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# Mock 01

# IBPS RRB PO Prelims 2018

## REASONING ABILITY

**Direction (1-5):** Study the following information carefully and answer the given questions:

Eleven boxes A, B, C, D, E, F, G, H, I, J, K are kept one above the other. Box G is kept at fifth position from the top. Two boxes are kept between G and H. Box D is kept just above box H. There are as many boxes above box D as below box B. Five boxes are kept between box F and box K, which is kept at one of the positions below box G. Box A is kept at one of the positions above box F. Only one box is kept between Box G and Box C. Box I is kept above box E but not just above. Box E is not kept immediately above or immediately below box C.

**1.** What is the position of box I?
(a) 8th from the bottom
(b) 7th from the top
(c) 3rd from the top
(d) 6th from the bottom
(e) none of these

**2.** How many boxes are kept between box E and Box H?
(a) seven (b)six (c) five
(d) four (e) eight

**3.** Which among the following statement is true regarding box J?
(a) it is 7th from the bottom
(b) Box K is placed above box J
(c) only two boxes are kept between box B and box J
(d) It is kept just below box H
(e) All are true

**4.** Which of the following represents the boxes kept between boxes A and I?
(a)C, B (b) A, K (c) F, G
(d) J, D (e) none of these

**5.** Which of the following box is kept just above box B?
(a) C (b) K (c) F
(d) D (e) none of these

**Direction (6-8):** Study the following information carefully and answer the given questions

Point B is 14m east of point A. Point C is 9m north of point B. Point D is 12m east of point C. Point E is 15m south of point D. Point F is 30m west of point E. Point G is 10m north of point F. Point H is 18 m east of point G.

**6.** If point X is 6m south of point A then which point is at shortest distance from point X?
(a) E (b) A (c) F
(d) B (e) G

**7.** What is the distance of point C from point H?
(a) 9m (b) 5m (c) 4m
(d) 6m (e) 7m

**8.** Point B is in which direction with respect to point F?
(a) South (b) South-east (c) North
(d) North-east (e) North-west

**Direction (9-13):** Study the following information carefully and answer the given questions

Eight persons A, B, C, D, E, F, G, H are sitting around a circular table such that five of them are facing towards the center and the rest are facing away from the center. Three persons are sitting between F and H, who is facing center. C is 2nd to the right of F and faces opposite direction to F. A sits 3rd to the left of C.G is one of the neighbor of E. Two persons sit between G and B, who is not neighbor of H.G does not face C. G and A face same direction but opposite to F.

**9.** What is the position of E with respect to A?
(a) immediate right (b) 5th to the left
(c) 2nd to the right (d) 2nd to the left
(e) none of these

**10.** How many persons are sitting between C and H, wen counted from the left of C?
(a) one (b) two (c) three
(d) four (e) none

**11.** Four of the five are alike in a certain way, which among the following does not belongs to that group?
(a) C (b) B (c) F
(d) D (e) E

**12.** Which of the following represents the immediate neighbor of G?
(a) C (b) B (c) F
(d) D (e) A

**13.** Which of the following is not true regarding F?
(a) it faces towards the center
(b) E is immediate left to F
(c) Two persons sit between F and D, when counted from the right to D
(d) All are true
(e) no one sits between F and B

**Direction (14-18):** Study the following information carefully and answer the given questions.

Certain number of persons are sitting in a row facing north. M sits 4th to the right of S. Five persons sit between M and X. T sits at one of the positions left to S. The number of persons sitting between M and U are same as between S and T. Q is 2nd from one of the extreme ends. Four persons sit between S and U. No one sits to the right of N, who is immediate right to P. X is 3rd left to P. Not more than two persons sit between Q and U.

**14.** How many persons are sitting in the row?
(a) 17 (b) 20 (c) 24
(d) 26 (e) 27

**15.** How many persons are sitting between S and T?
(a) seven (b)six (c) five
(d) four (e) eight

**16.** What is the position of U from the left end?
(a) 6th (b) 5th (c) 4th
(d) 2nd (e) 3rd

**17.** How many persons are sitting between Q and M?
(a) seven (b) eleven (c) ten
(d) nine (e) eight

**18.** Which of the following represents the person sitting at extreme end?
(a) M (b) U (c) X
(d) P (e) T

**19.** If the second, forth, seventh and eighth letter of the word "FRACTION" are combined to form a meaningful word, then what will be the 3rd letter from the left in the so formed word. If more than one meaningful word is formed then the answer is X, if no such word is formed then answer is Z?
(a) O (b) X (c) R
(d) Z (e) C

**20.** How many pair of digits have same number of digits between them in the number "573814269" as in the numeric series?
(a) five (b) four (c) six
(d) three (e) more than six

**Direction (21-25):** Study the following information carefully and answer the given questions:

Movies of different duration released on different days starting from Monday to Friday (starting from Monday). Movie A was released On Tuesday. No movie released between A and the one which is of 75-minute duration. Only one movie is released between the one which is of 75-minute duration and the one which is of 100-minute duration. No movie released between the one which is of 100 minute and B. Only one movie released after B. B released immediately after 100-minute duration movie. Movie C released immediately after the one which is of 130-minute duration. More than two movies released in between C and D. The movie which is of 90-minute duration released before E. One of movie was of 20 minutes more duration than E.

**21.** How many movies were released after E?
(a) One (b) Two (c) None
(d) Three (e) More than three

**22.** Which of the following movie was of 150-minute duration?
(a) E
(b) A
(c) There is no such movie
(d) C
(e) D

**23.** What is the total duration of movie D and E together?
(a) 135 (b) 225 (c) 165
(d) 175 (e) 190

**24.** Which of the following statement is true regarding B?
(a) The movie released after B is of 120-minute duration
(b) Two movies released in between A and B
(c) Movie B is of 100-minute duration
(d) Total duration of movie B and A is 225 minutes
(e) Movie A released after B.

**25.** Which of the following statement is true?
(a) The movie released before A is of 130-minute duration
(b) Three movies released in between A and E
(c) No movie released in between A and E
(d) Total duration of movie C and A is 230 minutes
(e) Movie C released immediately after E.

**Direction (26-28):** Study the following information carefully and answer the given questions:
F is the husband of G. K is the mother-in-law of G. H is the Father of F. M is the mother of H, P is the mother of K and B.

**26.** If Y is the father of H then how is Y related to M?
(a) Mother (b) Father (c) Sister
(d) Brother (e) Husband

**27.** How is P related to F?
(a) Grandfather (b) Aunt (c) Mother
(d) Grandmother (e) Wife

**28.** How is B related to H?
(a) Sister (b) Brother (c)Husband
(d) Can't be determine (e) Wife

**Direction (29-31):** Study the following information carefully and answer the given questions:There are six persons M, N, O, P, Q, R of different heights. N is shorter than M but taller than Q. Only two person are taller than M. R is taller than Q and O. Q is not the shortest. The one who is second shortest is 154m. P is not the shortest person.

**29.** If M is 19m taller than Q then what is the height of M?
(a) 190m (b) 181m (c) 175m
(d) 130m (e) 173m

**30.** If P is 181m than which of the following is true?
I. Only one person is taller than P.
II. The difference between the heights of P and Q is 27m
III. O is the shortest person.
(a) Only I (b) Only II and I
(c) All are true (d) Only III and II
(e) Only III and I

**31.** How many persons are shorter than N?
(a) One (b) Two (c) None
(d) Three (e) More than three

**Directions (32-35):** Question consists of Some statements followed by two conclusions. Consider the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow from the given statements using all statements together.

**32. Statements:** All Grills are Arrow. Some Hat are Grills. Some Cell are Arrow.
**Conclusions**:
I. Some Cell are definitely not Grills.
II. Some Hat can never be Arrow.
(a) Only I follows
(b) Only II follows
(c) Neither I nor II follow
(d) Both I and II follow
(e) Either I or II follow

**33. Statements:** All Grills are Arrow. Some Hat are Grills. Some Cell are Arrow.
**Conclusions:**
I. Some Hat are Arrow.
II. Some Grills are Cell.
(a) Only II follows
(b) Only I follows
(c) Either I nor II follow
(d) Both I and II follow
(e) Neither I or II follow

**34. Statements:** Some Door are Fan. No Door is Rose. No Fan is Shelf.
**Conclusions:**
I. Some Fan can never be Rose.
II. Some Rose are Shelf is a possibility.
(a) Neither I nor II follows
(b) Only I follows
(c) Either I or II follow
(d) Both I and II follow
(e) Only II follows

**35. Statements:** Some Door are Fan. No Door is Rose. No Fan is Shelf.
**Conclusions:**
I. All Door are Shelf is a possibility.
II. All Shelf can be Doors.
(a) Either I or II follows
(b) Only II follows
(c) Neither I nor II follow
(d) Both I and II follow
(e) Only I follows

**Direction (36-40):** Study the following information carefully and answer the given questions:
Fourteen persons are sitting in two parallel rows such that seven persons are sitting in each row. A, B, C, D, E, F, G are sitting in row-1 facing north while P, Q, R, S, T, U, V are sitting in row-2 facing south. G sits third to the left of A and neither of them sits at an extreme end of the row. The one faces A sits immediate right to T. Only one person sits between T and Q. The one who faces Q sits third to the right of E. S sits to the immediate left of V. S neither faces G nor E. D is an immediate neighbour of the one who faces S. The one who faces C sits fifth to the left of P. B sits third to the left of F. U sits at one of position to the right of R.

**36.** Four of the following are alike in a certain way so form a group which of the following does not belong to that group?
(a) U (b) B (c) T
(d) C (e) P

**37.** How many persons sits between F and C?
(a) One (b) Two (c) None
(d) Three (e) More than three

**38.** Which of the following is not true regarding U?
(a) No one sits to the right of U
(b) U sits third to the right of Q,
(c) P is an immediate neighbour of U.
(d) E is an immediate neighbour of the one who faces U,
(e) Only two persons sit between U and S

**39.** What is the position of C with respect to A?
(a) Second to the left
(b) Third to the right
(c) Immediate right
(d) Immediate left
(e) Second to the right

**40.** What is the position of B with respect to D?
(a) Third to the left
(b) Second to the left
(c) Forth to the left
(d) Third to the right
(e) Fifth to the right

# QUANTITATIVE APTITUDE

**Directions (41-45):** Find the wrong number in the following number series ?

**41.** 1, 3, 7, 15, 31, 64, 127
(a) 1 (b) 3 (c) 15
(d) 64 (e) 127

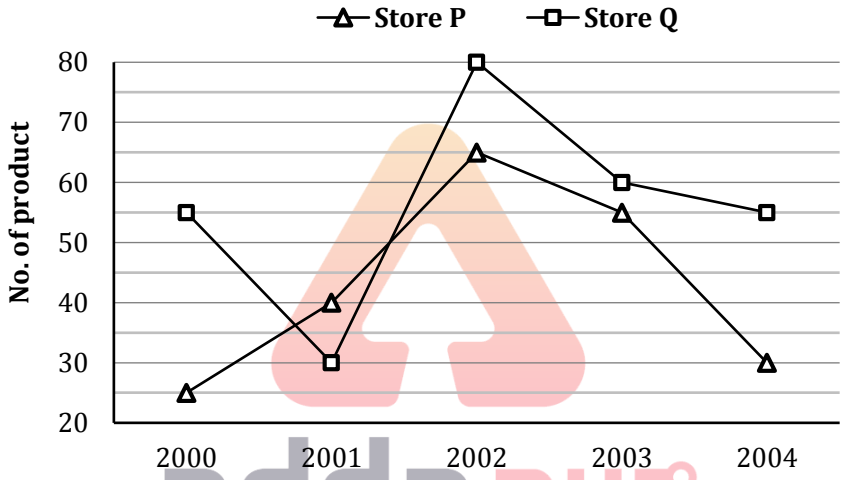
**42.** 1, 15, 119, 475, 949, 947, 473
(a) 947 (b) 475 (c) 15
(d) 473 (e) 1

**43.** 250, 260, 291, 314, 340, 370, 405
(a) 370 (b) 314 (c) 260
(d) 405 (e) 250

**44.** 750, 535, 411, 348, 322, 314, 315
(a) 315 (b) 750 (c) 411
(d) 348 (e) 314

**45.** 2, 7, 27, 107, 427, 1708, 6827
(a) 107 (b) 1708 (c) 2
(d) 6827 (e) 7

**Directions (46-50): Study the line-graph carefully & answer the question given below.**
Line-graph given below shows the total no. of products for (kid + adult) in two different stores P & Q in five different years.




**46.** What is the difference between total no. of products in store P in year 2003 & 2004 together and total no. of products in year 2000?
(a) None of these (b) 10 (c) 20
(d) 15 (e) 5

**47.** If total products in both the stores in year 2006 is increased by 20% as compared to year 2004. Then find total no. of products in year 2006?
(a) 102 (b) None of these
(c) 96 (d) 108
(e) 92

**48.** What is the ratio of total products in store Q in year 2002 & 2003 together to total products in store Q in year 2000?
(a) 23 : 12 (b) 23 : 11 (c) 28 : 11
(d) None of these (e) 27 : 13

**49.** What is the average no. of products in all the years together in store P?
(a) 48 (b) 43 (c) 57
(d) None of these (e) 53

**50.** Total no. of products in store P in year 2003 and in store Q in year 2004 together is what percent more/less than total no. of products in store Q in year 2000?
(a) 150% (b) 40% (c) 125%
(d) 100% (e) 50%

**Directions (51-55):** Solve the given quadratic equations and mark the correct option based on your answer—
(a) $x \geq y$
(b) $x \leq y$
(c) $x > y$
(d) x = y or no relation can be established between x and y.
(e) $x < y$

**51.** **(i)** $x^2 - 20x + 96 = 0$
**(ii)** $y^2 = 64$

**52.** **(i)** $4x^2 - 21x + 20 = 0$
**(ii)** $3y^2 - 19y + 30 = 0$

**53.** **(i)** $x^2 - 11x + 24 = 0$
**(ii)** $y^2 - 12y + 27 = 0$

**54.** **(i)** $x^2 + 12x + 35 = 0$
**(ii)** $5y^2 + 33y + 40 = 0$

**55.** **(i)** $4x^2 + 9x + 5 = 0$
**(ii)** $3y^2 + 5y + 2 = 0$

**Directions (56-60):** Study the following paragraph carefully & answer the question given below.

There are 1000 students in a college. Out of 1000 students some appeared in exams 'X', 'Y' and 'Z' while some not. Number of student not appeared in any exam is equal to number of students appeared in exam 'Z' only. Number of students appeared in exam 'Y' is 360. Ratio of number of students appeared in exam 'X' and 'Y' only to number of students appeared in exam 'Y' and 'Z' only is 2 : 3. Number of student appeared in exam 'X' and 'Z' both is half of number of students appeared in only exam 'Z'. Number of students appeared in exam 'X' only is 50% more than number of students appeared in 'Y' only. Number of students appeared in all the three exam is 4% of the total number of students in the college. Number of students appeared in 'Y' exam only is same as number of students appeared in 'Y' and 'Z' only.

**56.** How many students appeared in at least two exams?
(a) 240 (b) 260 (c) 300
(d) 360 (e) 500

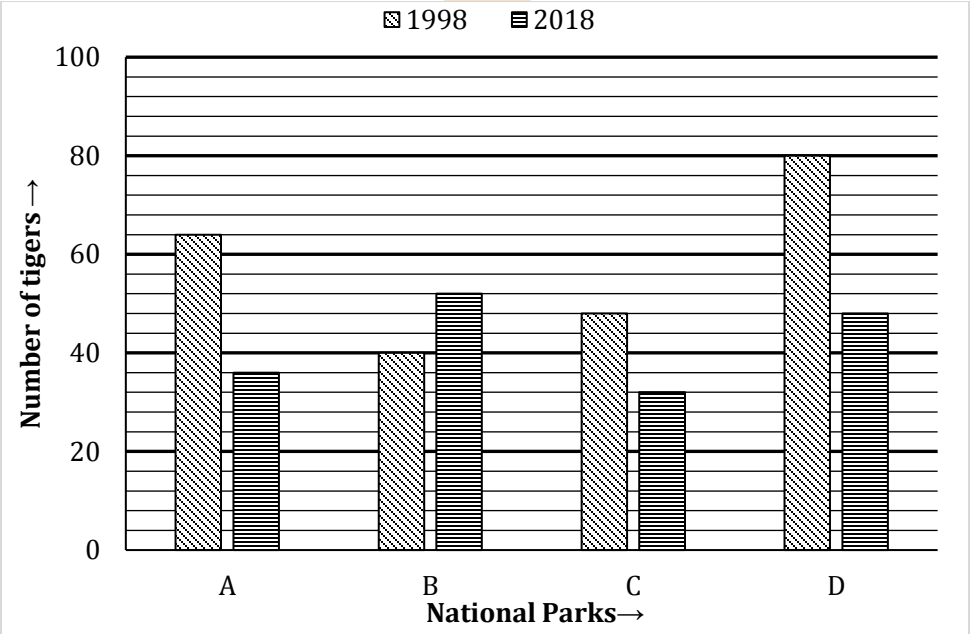
**57.** How many students appeared in two exams only?
(a) 280 (b) 220 (c) 340
(d) 300 (e) 260

**58.** How many students appeared in at most two exams?
(a) 240 (b) 260 (c) 300
(d) 500 (e) 960

**59.** How many students not appeared in exam Y?
(a) 440 (b) 360 (c) 540
(d) 640 (e) None of these

**60.** How many students appeared in exam X or in exam Z?
(a) 240 (b) 360 (c) 500
(d) 680 (e)760

**Direction (61-65):** Bar chart given below shows Number of tigers in different National Parks i.e. A to D of a country in two different years. Study the data carefully and answer the following questions




**61.** Number of tigers in National Park B and C together in 2018 is how much less more/less than Number of tigers in National Park A and D together in 1998?
(a) 40 (b) 44 (c) 52
(d) 60 (e) 72

**62.** Number of tigers in National Park 'D' in both years together is what percent of the Number of tigers in National Park 'C' in both years together?
(a) 60% (b) 160% (c) 140%
(d) 120% (e) 180%

**63.** Find the ratio between number of tigers in National Park 'A' in 2018 to number of tigers in National Park 'B' in 1998?
(a) 9 : 10 (b) 10 : 9 (c) 16 : 13
(d) 13 : 16 (e) 3 : 4

**64.** Number of tigers in National Park 'E' in 2018 is 40% more than number of tigers in National Park 'D' in 1998 while number of tigers in National park 'E' in 1998 is 25% less than number of tigers in National Park 'C' in 2018. Find total number of tigers in National park 'E' in 1998 and 2018 together?
(a) 148 (b) 84 (c) 172
(d) 160 (e) 136

**65.** Average number of tigers in all National park in 2018 is how much less/more than average number of tigers in all National park in 1998?
(a) 14 (b) 16 (c) 18
(d) 20 (e) 22

**66.** The difference between downstream speed and upstream speed of boat is 6 km/hr and boat travels 72 km from P to Q (downstream) in 4 hours. Then find the speed of boat in still water?
(a) 15 km/hr (b) 18 km/hr (c)20km/hr
(d) 16 km/hr (e) 24 km/hr

**67.** In a vessel, there are two types of liquids A and B in the ratio of 5 : 9. 28 lit of the mixture is taken out and 2 lit of type B liquid is poured into it, the new ratio(A:B) thus formed is 1 : 2. Find the initial quantity of mixture in the vessel?
(a) 84 lit (b) 42 lit (c) 50 lit
(d) 56 lit (e) 70 lit

**68.** The average weight of 5 students in a class is 25.8 kg. When a new student joined them, the average weight is increased by 3.9 kg. Then find the approximate weight of the new student.
(a) 55 kg (b) 49 kg (c) 42 kg
(d) 44 kg (e) 58 kg

**69.** A person has purchased two adjacent plots, one is in rectangular shape and other is in square shape and combined them to make a single new plot. The breadth of the rectangular plot is equal to the side of the square plot and the cost of fencing the new plot is Rs. 390 (Rs. 5/m). Find the side of square if the length of the rectangular plot is 15 m.
(a) 10 m (b) 8 m (c) 12 m
(d) 9 m (e) 6 m

**70.** A shopkeeper marked his article 50% above the cost price and gives a discount of 20% on it. If he had marked his article 75% above the cost price and gives a discount of 20% on it then find the earlier profit is what percent of the profit earned latter?
(a) 50% (b) 60% (c) $33\frac{1}{3}\%$
(d) 40% (e) 75%

**71.** A person invested two equal amounts in two different schemes. In first scheme, amount is invested at 8% p.a. on SI for T years and SI received is Rs 2000 while in second scheme, amount is invested at 10% p.a. for 2 years at CI and the compound interest received is Rs. 1050. Find the value of T.
(a) 4 yr (b) 8 yr (c) 6 yr
(d) 5 yr (e) 3 yr

**72.** Satish saves 20% of his monthly salary. And of the remaining salary $\frac{1}{4}$th and $\frac{1}{2}$th he gives to his mother and sister respectively and the remaining salary he submits as his EMI for the payment of his car. If his annual EMI was Rs. 60,000, then find his monthly salary?
(a) Rs. 40,000 (b) Rs. 35,000
(c) Rs. 32,000 (d) Rs. 30,000
(e) Rs. 25,000

**73.** The sum of four times of an amount 'x' and (x – 9.75) is Rs. 442. Find the approximate value of x.
(a) Rs. 85 (b) Rs. 90 (c) Rs. 100
(d) Rs. 1100 (e) Rs. 75

**74.** A and B entered into a partnership by investing some amounts. The investment of A is twice of the investment of B. Another person C joined them after 4 months. At the end of a year, the profit share of A and C is equal. Then find the profit share of B is what percent of the profit share of C.
(a) 50% (b) $33\frac{1}{3}\%$ (c) 40%
(d) 60% (e) 75%

**75.** The ratio of age of Ishu 8 years hence and that of Ahana 6 years hence is 5 : 6. The age of Ishu 10 years hence is equal to the age of Ahana 6 years hence. Then, find the present age of Ishu.
(a) 1.5 yr (b) 2 yr (c) 3 yr
(d) 4 yr (e) 5 yr

**76.** What is the difference between 20% of P and 20% of (P + 5000).
(a) 1500 (b) 1200 (c) 1000
(d) 2000 (e) 1600

**77.** The ratio of the diameter of base and height of a cylinder is 2 : 3. Find the radius of the cylinder if the approximate volume of cylinder is 3234.01 $cm^3$?
(a) $\frac{21}{2}$ cm (b) $\frac{7}{2}$ cm (c) 21 cm
(d) 7 cm (e) 14 cm

**78.** A train of some length passes the platform of length 524 m in 55 seconds. Find the length of train if the speed of train is 72 km/hr.
(a) 476 m (b) None of these
(c) 428 m (d) 526 m
(e) 576 m

**79.** Efficiency of B is two times more than efficiency of A. Both started working alternatively, starting with B and completed the work in total 37 days. If C alone complete the same work in 50 days then find in how many days A and C together will complete the work?
(a) 24 days (b) 30 days (c) 36 days
(d) 48 days (e) 18 days

**80.** 7 men and 6 women together can complete a piece of work in 8 days and work done by a women in one day is half the work done by a man in one day. If 8 men and 4 women started working and after 3 days 4 men left the work and 4 new women joined then, in how many more days will the work be completed
(a) 7 days (b) 6 days (c) 5.25 days
(d) 6.25 days (e) 8.14 days

# Mock 01 : Solutions

## REASONING ABILITY

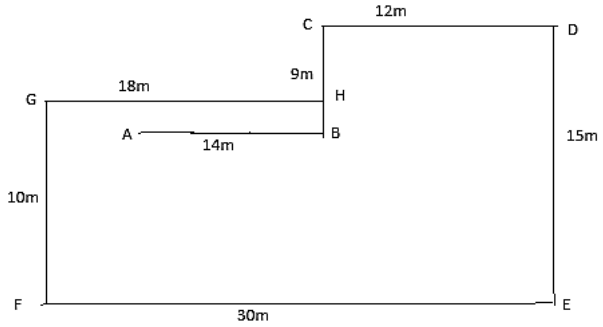
**Direction (1-5):**

| BOX |
|---|
| D |
| H |
| A |
| F |
| G |
| I |
| C |
| J |
| E |
| K |
| B |

**1. (d); 2. (b); 3. (c);**

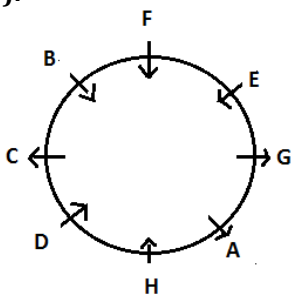
**4. (c); 5. (b);**

**Direction (6-8):**




**6. (c); 7. (b); 8. (d);**

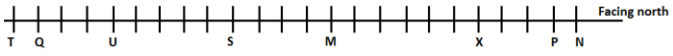
**Direction (9-13):**




**9. (d); 10. (a); 11. (a);**

**12. (e); 13. (c);**

**Direction (14-18):**

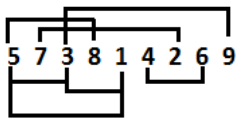



**14. (c); 15. (e); 16. (b);**

**17. (b); 18. (e);**

**19. (c);** 2nd, 4th,7th and 8th letters are R, C, O, N
The meaningful word formed is CORN

**20. (e);**



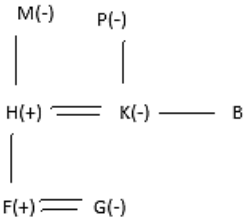

**Direction (21-25):**

| Days | Movies | Duration |
|---|---|---|
| Monday | D | 75 |
| Tuesday | A | 90 |
| Wednesday | E | 100 |
| Thursday | B | 130 |
| Friday | C | 120 |

**21. (b); 22. (c); 23. (d);**

**24. (a); 25. (c);**

**Direction (26-28):**



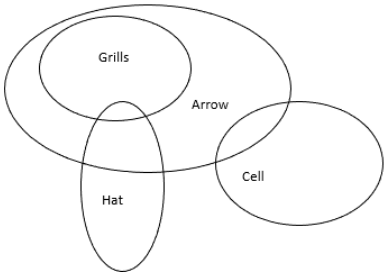

**26. (e); 27. (d); 28. (d);**

**Direction (29-31):** R/P > R/P > M > N > Q > O

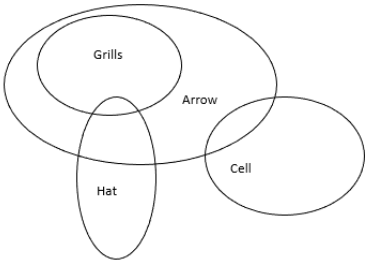
**29. (e); 30. (d); 31. (b);**

**Directions (32-35):**

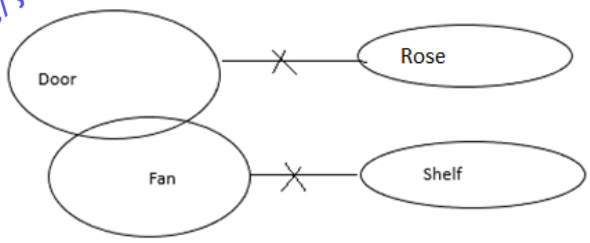
**32. (c);**



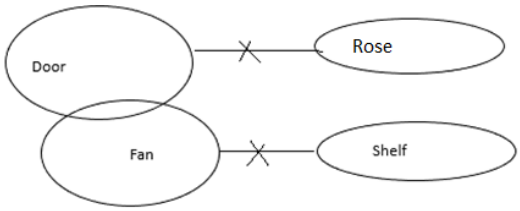

**33. (b);**



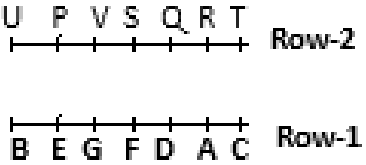
**34. (d);**




**35. (b);**




**Direction (36-40):**




**36. (e);**

**37. (b);**

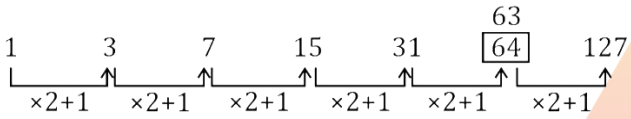
**38. (b);**

**39. (c);**

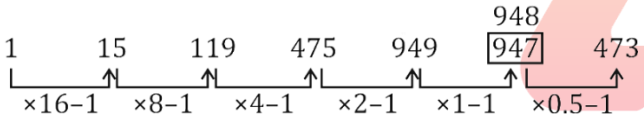
**40. (c);**

## QUANTITATIVE APTITUDE

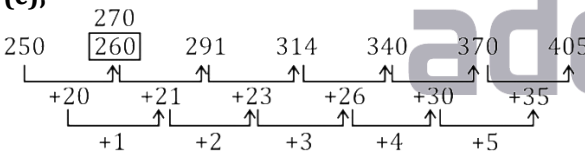
**41. (d);**



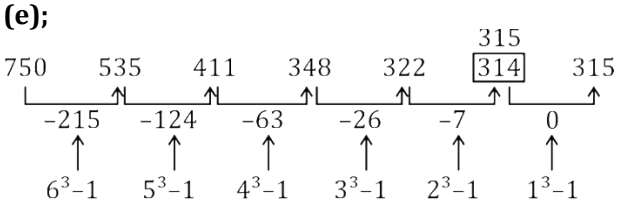

**42. (a);**



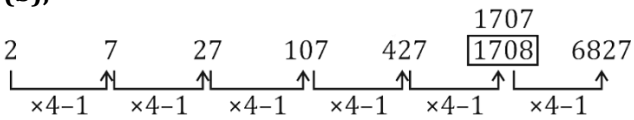

**43. (c);**



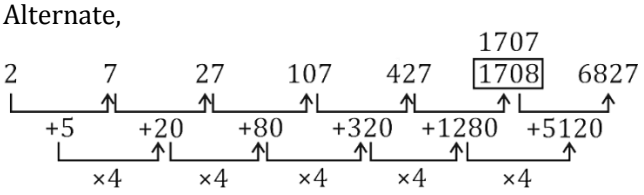

**44. (e);**




**45. (b);**




Alternate,




**46. (e);** Required difference
= (55 + 30) – (55 + 25) = 5

**47. (a);** Total no. of products in year 2006
$= (55 + 30) \times \frac{120}{100} = 102.0$

**48. (c);** Required ratio
$= \frac{80+60}{55} = \frac{140}{55} = 28 : 11$

**49. (b);** Required Average
$= \frac{25+40+65+55+30}{5} = \frac{215}{5} = 43$

**50. (d);** Required percentage
$= \frac{(55+55)-55}{55} \times 100$
$= \frac{55}{55} \times 100 = 100\%$

**51. (a);** **(i)** $x^2 - 20x + 96 = 0$
$x^2 - 12x - 8x + 96 = 0$
$x(x-12) - 8(x-12) = 0$
$(x-12)(x-8) = 0$
$x = 12, 8$

**(ii)** $y^2 = 64$
$y = \pm 8$
$\therefore x \geq y$

**52. (d);** **(i)** $4x^2 - 21x + 20 = 0$
$4x^2 - 16x - 5x + 20 = 0$
$4x(x-4) - 5(x-4) = 0$
$(4x-5)(x-4) = 0$
$x = \frac{5}{4}, 4$

**(ii)** $3y^2 - 19y + 30 = 0$
$3y^2 - 9y - 10y + 30 = 0$
$3y(y-3) - 10(y-3) = 0$
$(3y-10)(y-3) = 0$
$y = \frac{10}{3}, 3$
$\therefore$ No relation can be established between x and y

**53. (d);** **(i)** $x^2 - 11x + 24 = 0$
$x^2 - 8x - 3x + 24 = 0$
$x(x-8) - 3(x-8) = 0$
$(x-3)(x-8) = 0$
$x = 3, 8$

**(ii)** $y^2 - 12y + 27 = 0$
$y^2 - 9y - 3y + 27 = 0$
$y(y-9) - 3(y-9) = 0$
$(y-9)(y-3) = 0$
$y = 9, 3$
∴ No relation can be established between x and y

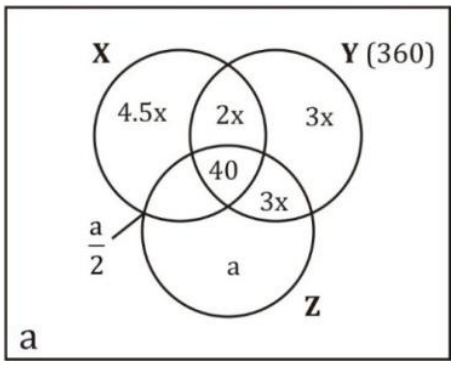
**54. (b);** **(i)** $x^2 + 12x + 35 = 0$
$x^2 + 7x + 5x + 35 = 0$
$x(x+7) + 5(x+7) = 0$
$(x+7)(x+5) = 0$
$x = -7, -5$

**(ii)** $5y^2 + 33y + 40 = 0$
$5y^2 + 25y + 8y + 40 = 0$
$5y(y+5) + 8(y+5) = 0$
$(y+5)(5y+8) = 0$
$y = -\frac{8}{5}, -5$
$\therefore y \geq x$

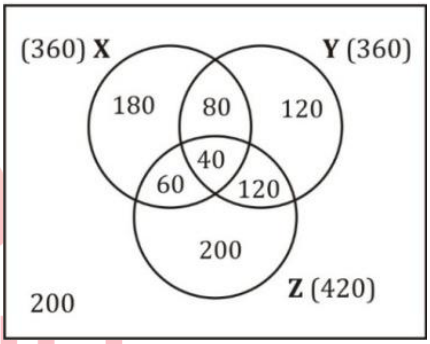
**55. (b);** **(i)** $4x^2 + 9x + 5 = 0$
$4x^2 + 4x + 5x + 5 = 0$
$4x(x+1) + 5(x+1) = 0$
$(4x+5)(x+1) = 0$
$x = -1, -\frac{5}{4}$

**(ii)** $3y^2 + 5y + 2 = 0$
$3y^2 + 3y + 2y + 2 = 0$
$3y(y+1) + 2(y+1) = 0$
$(3y+2)(y+1) = 0$
$y = -\frac{2}{3}, -1$
$\therefore y \geq x$

**Solutions (56-60):**
Total students = 1000
Let, students appear in exam Z only = a
Total students appeared in exam Y = 360
Ratio of number of students appeared in exam X and Y only to students appeared in exam Y and Z only = 2 : 3
Students appeared in exam X and Z both
= a/2
Number of students appeared in all three exams = $\frac{4}{100} \times 1000 = 40$
Number of students appeared in Y exam only
= No. of students appeared in Y and Z only
= 3x
Number of students appeared in exam X and Y only
$= \frac{2}{3} \times 3x = 2x$
1000




Now, 2x + 3x + 3x + 40 = 360
⇒ x = 40
$and, 12.5x + a + \frac{a}{2} + a = 1000$
$\frac{5a}{2} = 500$
⇒ a = 200
1000




**56. (c);** Students appeared in atleast two exams = 80 + 60 + 40 + 120
= 300

**57. (e);** Students appeared in two exams only = 80 + 60 + 120 = 260

**58. (e);** Students appeared in atmost two exams = 180 + 120 + 200 + 60 + 80 + 120 + 200= 960

**59. (d);** Student not appeared in exam Y = 1000 – 360 = 640

**60. (d);** Students appeared in exam X or in exam Z
= 180 + 60 + 40 + 80 + 200 + 120
= 680

**61. (d);** Number of tigers in National Park B and C together in 2018 = 52 + 32 = 84
Number of tigers in National Park A and D together in 1998
= 64+80 = 144
Required difference = 144-84 = 60

**62. (b);** Number of tigers in National Park D in 1998 and 2018 together = 80 + 48 = 128
Number of tigers in National Park C in 1998 and 2018 together = 48 + 32 = 80
Required % = $\frac{128}{80} \times 100 = 160\%$

**63. (a);** Required Ratio = $\frac{36}{40} = \frac{9}{10}$

**64. (e);** Number of tigers in National Park E in 2018 = $\frac{140}{100} \times 80 = 112$
Number of tigers in National Park E in 1998 = $\frac{75}{100} \times 32 = 24$
Number of tigers in National Park E in 1998 and 2018 together
= 112 + 24 = 136

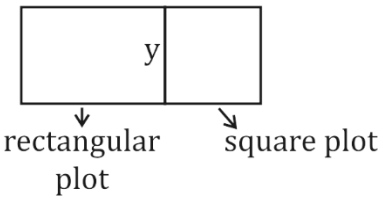
**65. (b);** Total number of tigers in 2018
= 36 + 52 + 32 + 48 = 168
Total number of tigers in 1998
= 64 + 40 + 48 + 80 = 232
Required difference = $\frac{232}{4} - \frac{168}{4}$
$= \frac{64}{4} = 16$

**66. (a);** Let the speed of boat in still water be x km/hr and that of stream be y km/hr
ATQ,
(x + y) – (x – y) = 6
⇒ 2y = 6 ⇒ y = 3 km/hr
Downstream stream = (x + y) = $\frac{72}{4}$ = 18 km/hr
⇒ x = 15 km/hr

**67. (d);** Let the initial quantity of mixture in vessel be x lit
ATQ,
$\frac{x \times \frac{5}{14} - 10}{x \times \frac{9}{14} - 18 + 2} = \frac{1}{2}$
$\Rightarrow \frac{5x - 140}{9x - 224} = \frac{1}{2}$
⇒ 10x – 280 = 9x – 224
⇒ x = 56 lit

**68. (b);** Weight of new student = 6 × (25.8 + 3.9) – 5 × 25.8
≈ 49 kg

**69. (c);**




Let the breadth of rectangular plot be y m and length = 15 m
ATQ,
30 + y + 3y = 390/5
⇒ 30 + 4y = 78
⇒ 4y = 48 ⇒ y = 12 m

**70. (a);** Let the CP be Rs. 100x
Then, MP = Rs. 150x
SP = 150x × $\frac{80}{100}$ = Rs. 120x
Profits = Rs. 20x
New MP = Rs. 175x
New SP = 175x × $\frac{80}{100}$ = Rs. 140x
New Profit = Rs. 40x
Required % = $\frac{20x}{40x} \times 100 = 50\%$

**71. (d);** Let the amount be Rs. x
CI at 10% in 2 years = 10 + 10 + $\frac{10 \times 10}{100}$
= 21%.
ATQ,
$\frac{x \times 21}{100} = 1050 \Rightarrow$ x = Rs. 5000
And,
$\frac{5000 \times 8 \times T}{100} = 2000$
⇒ T = 5 years.

**72. (e);** Let the monthly salary be Rs. 100 x.
EMI per month
$= 100x - \left(20x + 80x \times \frac{1}{4} + 80x \times \frac{1}{2}\right)$ = Rs. 20x
ATQ,
20x × 12 = 60,000
⇒ x = 250
Monthly Salary = Rs. 25,000

**73. (b);** ATQ,
4x + x – 9.75 = 442
5x = 451.75
x = Rs. 90

**74. (a);** Let the investment of B be Rs. x
∴ investment of A = Rs 2x
Ratio of profit,

| $A$ | : | $B$ | : | $C$ |
|---|---|---|---|---|
| $12 \times 2x$ | : | $12 \times x$ | : | $8 \times y$ |

ATQ,
24x = 8y
y = 3x
∴ Required percentage = $\frac{12 \times x}{8 \times 3x} \times 100$
= 50%

**75. (b);** Let present age of Ishu & Ahana be x year & y year respectively

∴ ATQ,

$\frac{x+8}{y+6}=\frac{5}{6}$

6x + 48 = 5y + 30

6x – 5y = – 18 ... (i)

x + 10 = y + 6

x – y = – 4 ... (ii)

∴ x = 2 years

∴ present age of Ishu is 2 years.

**76. (c);** quired difference = $\frac{20}{100}(P+5000)-\frac{20}{100}\times P$

= 1000

**77. (d);** Let diameter of base be 2x cm & height of cylinder be 3x cm

∴ radius = $\frac{2x}{2}=x$ cm

We know,

Volume of cylinder = $\pi r^2 h$ (r→ radius, h → height)

ATQ,

$\pi r^2 h = 3234$

$\frac{22}{7}\times x^2\times 3x = 3234$

x = 7cm

Radius = 7cm

**78. (e);** Speed of train in m/s. = $72\times\frac{5}{18}=20$ m/s

Let length of train be x m

ATQ,

$\frac{524+x}{55}=20$

x = 1100 – 524 = 576m

**79. (b);** Lets efficiency of A is x unit/day and B's efficiency is 3x unit/day

So, B work for 19 days and A work for 18 days

ATQ—

Total work = 19 × 3x + 18 × x = 75x

$Efficiency\ of\ C=\frac{75x}{50}$

$=1.5x\ unit/day$

$(A+C)\ together=\frac{75x}{(x+1.5x)}$

$=30\ days$

**80. (d);** One day work of women = half of work done by men in one day

Let efficiency of one women = w unit/day

Man's efficiency = 2w unit/day

Total work = (7 × 2w + 6 × w) × 8 =160w unit

8 men and 4 women start work for 3 days

Total work done = (8 × 2w + 4 × w) × 3

= 60w

4 women replace 4 man

= (4 × 2w + 8 × w) =16w

Days required = $\frac{100w}{16w}$= 6.25 days

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# Mock 02

# IBPS RRB PO Prelims 2017

## REASONING ABILITY

**1.** What should come in place of question mark (?) in the following series based on the above arrangement?
ZN XD UG QK ?
(a) LK (b) LO
(c) LP (d) KP
(e) Other than the given options

**2.** How many such pair of numbers are there in the given number "46579739" (Both backward and forward) same as far as according to numeric series?
(a) One (b) Two
(c) Three (d) More than three
(e) None of these.

**3.** If it is possible to make only one meaningful word with the 1st ,2nd ,4th and 7th letters of the word '**ECUADOR**' which would be the second letter of the word from the right? If more than one such word can be formed give 'Y' as the answer. If no such word can be formed, give 'Z' as your answer.
(a) Y (b) E (c) I
(d) Z (e) M

**4.** If 1 is subtracted from each odd number and 2 is added to each even in the number **9436527,** then how many digits will appear twice in the new number thus formed?
(a) Only 8 (b) Only 8 and 6 (c) 8, 6 and 4
(d) 2, 4 and 6 (e) None of these

**5.** How many letter will be remain the same position in the word 'MONSTER' when they arranged in the ascending order from left to right?
(a) One (b) Two (c) Three
(d) More than Three (e) None

**Directions (6-10):** Read the following information carefully and answer the following questions.
Eight boxes A, B, C, D, E, F, G and H are place one above the other in any particular order. Box no. 1 is at the bottom and box no. 8 is at the top. Three boxes are placed between A and B. Box H is placed immediately below A. There are two boxes between H and G. There are as many boxes between C and D as between H and B. Box C is kept above D. Box E is kept immediately below box D. Three boxes are there between E and F.

**6.** How many boxes are there above box D?
(a) 4 (b) 3 (c) 6
(d) 2 (e) None of these

**7.** Which of the following boxes is kept at the top?
(a) B (b) A (c) D
(d) E (e) None of these

**8.** Choose the odd one out?
(a) B (b) G (c) A
(d) D (e) E

**9.** Which of the following boxes is kept between F and A?
(a) B (b) G
(c) C (d) H
(e) None as box F is immediately above box A

**10.** How many boxes are there between C and A
(a) Less than 2 (b) 4 (c) 5
(d) 6 (e) None of these

**Directions (11-15):** In these questions, relationships between different elements are shown in the statements. These statements are followed by two conclusions. Give answer
(a) if only conclusion I follows
(b) if only conclusion II follows
(c) if either conclusion I or conclusion II follows
(d) if neither conclusion I nor conclusion II follows
(e) if both conclusions I and II follow

**11. Statement:** R ≥ S ≥ T > U > X; T < V < W
**Conclusions:** **I.** R > X **II.** X < W

**12. Statement:** E = F < G < H; G ≥ I
**Conclusions:** **I.** H > I **II.** E > I

**13. Statement:** A > B > F > C; D > E > C
**Conclusions:** **I.** C < A **II.** B > D

**14. Statement:** K ≤ L ≤ M = N; P ≥ O ≥ N
**Conclusions:** **I.** K < P **II.** K = P

**15. Statement:** D < E < F < G; K > F
**Conclusions:** **I.** K ≤ G **II.** K > D

**Directions (16-20):** Read the following information carefully and answer the following questions.
Seven persons A, B, C, D, E, F and G were born on different months viz. January, February, March, April, June, August and October of the same year, but not necessarily in the same order.
Only three persons were born before E and D is not one of them. F was not born immediately after E. B was born after F. A was born immediately before the month in which G was born. Only two persons were born between G and F.

**16.** How many persons were born between C and E?
(a) Three (b) Two (c) Four
(d) Five (e) None of these

**17.** Who amongst the following is the oldest?
(a) A (b) C (c) E
(d) B (e) F

**18.** Who amongst the following was born between the months in which A and D were born?
(a) E (b) G (c) C
(d) B (e) Both E and G

**19.** How many persons were born after D?
(a) One (b) Three (c) Four
(d) Two (e) None of these

**20.** Who amongst the following is the person who was born in the month which has less than 30 days?
(a) F (b) B (c) G
(d) C (e) A

**Directions (21-25):** Study the following information carefully and answer the given questions:
In a certain code language
'card win team time' is written as 'la ta ja sa'
'fight game play card' is written as 'ja pa ra da'
'in win team fight' is written as 'da ta fa la'.

**21.** What is the code for 'time'?
(a) sa (b) da (c) ja
(d) la (e) None of these

**22.** 'card fight in' can be coded as?
(a) sa ja ra (b) fa ja da
(c) da ra ta (d) Can't be determined
(e) None of these

**23.** What is the code for 'game'?
(a) ra
(b) pa
(c) Either ra or pa
(d) da
(e) None of these

**24.** Which of the following is the code for 'in'?
(a) ta (b) da (c) la
(d) fa (e) None of these

**25.** If 'game in risk' is coded as 'Pa fa xa' than what will be the code for 'risk card fight'?
(a) Ja sa da (b) ja da ra (c) sa da fa
(d) xa ja da (e) None of these

**Directions (26-30):** Study the following information to answer the given questions
Twelve people are sitting in a two parallel rows containing six people each in such a way that there is an equal distance between adjacent persons. In row 1 – A, B, P, Q, X and Y are seated (but not necessarily in the same order) and all of them are facing south. In row 2 – E ,F ,R ,Z ,S and U are seated (but not necessarily in the same order) and all of them are facing North. Therefore in the given seating arrangement each member seated in a row faces another member of the other row. Q sits fourth to the left of A. The one facing A sits third to the left of S. Only one person sits between S and E. E does not sit at any of the extreme ends of the line The one facing U sits second to the right of B. U does not sit at any of the extreme ends of the line. Only two people sit between B and Y. The one facing B sits second to the left of Z. F is not an immediate neighbour of U. P is not immediate neighbour of Q.

**26.** Which of the following groups of people represents the people sitting at extreme ends of both the rows?
(a) Q, Y, Z, R (b) F, Y, F, B (c) S, Y, Z, R
(d) Q, F, Z, B (e) Q, Y, Z, S

**27.** Who amongst the following faces, F?
(a) Q (b) P (c) A
(d) X (e) B

**28.** Which of the following is true with respect to the given information?
(a) B faces one of the immediate neighbours of Z.
(b) F sits exactly between R and E.
(c) None of the given options is true
(d) A is an immediate neighbour of B
(e) A faces U.

**29.** Which of the following is true regarding X?
(a) B sits second to the right of X.
(b) F is an immediate neighbor of the person who faces X
(c) Both P and Y are immediate neighbours of X
(d) Only one person sits between X and A
(e) None of the given options is true

**30.** Who amongst the following sits second to the right of the person who faces P?
(a) F (b) U (c) R
(d) E (e) S

**Directions (31-35):** Study the following information carefully and answer the questions given below:

Eight friends M, N, O, P, Q, R, S and T are sitting around a circular table with equal distance between them but not necessarily in the same order. Some of them are facing the centre with some face outside (i.e. opposite to centre).

O sits second to the right of R, R faces the centre. Only two people sit between O and N (either form O's right or O's left). S sits second to the right of O. T sits to the immediate right of N. S and N face opposite direction (i.e. if N faces the centre then S faces outside and vice versa). Immediate neighbor of S face the same direction (i.e. If one neighbor faces the centre then the other also faces the centre and vice-versa) Only three people sit between P and Q. Neither P nor M is an immediate neighbor of R. Q sits second to the right of M. Both T and Q face a direction opposite to that of O (i.e. if O faces the centre then both T and Q faces outside and vice-versa).

**31.** Who sits exactly between M and P?
(a) N (b) S (c) R
(d) Q (e) None of these

**32.** How many people in the given arrangement face the centre?
(a) One (b) Three (c) Five
(d) Four (e) None of these

**33.** Who sits second to the right of T?
(a) O (b) Q
(c) S (d) R
(e) Other than the given options

**34.** Four of the following five are alike in a certain way based on the given seating arrangement and so form a group. Which is the one that does not belong to that group?
(a) P (b) O (c) T
(d) M (e) Q

**35.** What is P's position with respect to R?
(a) Second to the left (b) Third to the right
(c) Third to the left (d) Sixth to the right
(e) Second to the right

**Directions (36–40):** In each question below are given some statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts.

Give answer
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**36. Statements:** All bags are purses.
No purse is black.
All blacks are covers.
**Conclusions:** **I.** All bags are covers
**II.** Some covers are purses.

**37. Statements:** Some cats are rats.
Some rats are fishes.
All fishes are birds.
**Conclusions:** **I.** Some fishes are rats.
**II.** All cats being birds is a possibility

**38. Statements:** Some flowers are roses.
No rose is red.
All red are leaves.
**Conclusions:** **I.** Some flowers are definitely not red.
**II.** Some leaves are definitely not roses.

**39. Statements:** All cards are sheets.
All files are cards.
Some sheets are papers.
**Conclusions:** **I.** All files being papers is a possibility.
**II.** All files are not sheets.

**40. Statements:** Some flowers are roses.
No rose is red.
All red are leaves.
**Conclusions:** **I.** Some flowers are not leaves.
**II.** No leave is a red.

## QUANTITATIVE APTITUDE

**Directions (41-45):** What should come in place of the question mark (?) in following number series problems?

**41.** 190, 94, 46, 22, ?, 4
(a) 12 (b) 14 (c) 10
(d) 8 (e) None of these

**42.** 5, 28, 47, 64, 77, ?
(a) 84 (b) 86 (c) 89
(d) 88 (e) None of these

**43.** 7, 4, 5, 12, 52, ?
(a) 424 (b) 428 (c) 318
(d) 440 (e) None of these

**44.** 6, 4, 5, 11, 39, ?
(a)159 (b) 169 (c) 189
(d)198 (e) None of these

**45.** 89, 88, 85, 78, 63, ?
(a) 30 (b) 34 (c) 36
(d) 32 (e) None of these

**46.** There are 3 consecutive odd numbers and 3 consecutive even numbers. The smallest even number is 9 more than largest odd number. If the square of average of all the 3 given odd number is 507 less than the square of the average of all the 3 given even number, what is the smallest odd number.
(a) 11 (b) 13 (c) 17
(d) 19 (e) 9

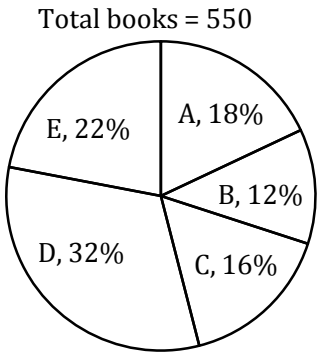
**47.** A can complete a task in 15 days B is 50% more efficient than A. Both A and B started working together on the task and after few days B left task and A finished the remaining $\frac{1}{3}$ of the given work. For how many days A and B worked together.
(a) 3 (b) 5 (c) 4
(d) 6 (e) 2

**48.** A boat can travel 9.6 km downstream in 36 min. If speed of the water current is 10% of the speed of the boat in downstream. How much time will boat take to travel 19.2 km upstream.
(a) 2 hours (b) 3 hours (c) 1.25 hours
(d) 1.5 hours (e) 1 hour

**49.** A started a business with a initial investment of Rs. 1200. 'X' month after the start of business, B joined A with on initial investment of Rs. 1500. If total profit was 1950 at the end of year and B's share of profit was 750. Find 'X'
(a) 5 month (b) 6 month (c) 7 month
(d) 8 month (e) 9 month

**50.** Ratio between curved surface area and total surface area of a circular cylinder is 3 : 5. If curved surface area is 1848 $cm^3$ then what is the height of cylinder.
(a) 28 (b) 14 (c) 17
(d) 21 (e) 7

**Directions (51-55):** Given below is the pie chart which shows the percentage distribution of a book 'XYZ' publishes in 5 different stores.




**51.** If number of female who bought the books in store E are 21 more than number of males who bought books from same store then find the number of females who bought book in store E.
(a) 75 (b) 78 (c) 71
(d) 68 (e) 73

**52.** Find the central angle for the book D.
(a) 117.5° (b) 115.2° (c) 112.8°
(d) 108.5° (e) 118.8°

**53.** If total books of another publisher 'MNP' is 20% more than books of 'XYZ' publisher then what will be total books sold by store A and B for publisher 'MNP'. Percentage-distribution for different stores for MNP remains same as for 'XYZ'
(a) 200 (b) 178 (c) 181
(d) 186 (e) 198

**54.** What is the ratio of total books sold by store A and C together to the total books sold by store D and E together
(a) 17 : 27 (b) 18 : 29 (c) 21 : 28
(d) 22 : 23 (e) 24 : 29

**55.** What is the difference between average of book sold by store A and E together and average books sold by store C and D together?
(a) 33 (b) 11 (c) 22
(d) 44 (e) 20

**Directions (56-60):** In each of these questions, two **equ**ations (I) and (II) are given. You have to solve **both** the equations and give answer
**(a)** if x>y (b) if x≥y
**(c)** if x<y (d) if x ≤y
**(e)** if x = y or no relationship can be established.

**56. I.** $x^2 + 9x + 20 = 0$ **II.** $y^2 = 16$

**57. I.** $x^2 - 7x + 12 = 0$ **II.** $3y^2 - 11y + 10 = 0$

**58. I.** $x^2 - 8x + 15 = 0$ **II.** $y^2 - 12y + 36 = 0$

**59. I.** $2x^2 + 9x + 7 = 0$ **II.** $y^2 + 4y + 4 = 0$

**60. I.** $2x^2 + 15x + 28 = 0$ **II.** $2y^2 + 13y + 21 = 0$

**61.** Train A completely crosses train B which is 205 m long in 16 second. If they are travelling in opposite direction and sum of speed of both are 25 m/s. then find the difference (in meter) between lengths of both trains.
(a) 5 (b) 6 (c) 8
(d) 10 (e) 12

**62.** A trader mixes 14 kg rice of variety A which costs Rs. 60/kg with 18 kg of quantity of type B rice. He sells the mixture at Rs. 65/Kg and earns a profit of $\frac{100}{3}$ %. Then what was the cost price of type B rice.
(a) 30 (b) 20 (c) 40
(d) 50 (e) 45

**63.** Present age of A is 3 years less than present age of B. Ratio of B's age 5 year ago and A's age 4 year hence is 3 : 4 then find present age (in years) of A.
(a) 20 (b) 17 (c) 23
(d) 26 (e) 29

**64.** A bag contains 6 Red, 5 Green and 4 Yellow coloured balls. 2 balls are drawn at random after one another without replacement then what is the probability that atleat one ball is Green.
(a) $\frac{2}{3}$ (b) $\frac{4}{5}$ (c) $\frac{3}{8}$
(d) $\frac{4}{7}$ (e) $\frac{2}{7}$

**65.** Cost price of B is 200 more than cost price of A. B is sold at 10% profit and A is sold at 40% loss and selling price of A and B are in the ratio 4 : 11. If A is sold at 20% loss then what will be selling price of A.
(a) 320 (b) 400 (c) 240
(d) 160 (e) 360

**Directions (66-70):** Read the following table carefully and answer the following questions—
No of students and % of students passed out of those who appeared are given for two subjects from year 2001 to 2005 in a college XYZ.

| Year | Statistics | | Economics | |
|---|---|---|---|---|
| | No. of students appeared | % of students passed | No. of students appeared | % of students passed |
| 2001 | 2200 | 45% | 4200 | 40% |
| 2002 | 2700 | 55% | 3800 | 45% |
| 2003 | 2500 | 35% | 2600 | 60% |
| 2004 | 3200 | 65% | 4800 | 55% |
| 2005 | 4800 | 60% | 2200 | 50% |

**66.** Find the average number of students who were failed in Economics in year 2002 and year 2003 together?
(a) 1435 (b) 1565 (c) 1720
(d) 1590 (e) None of these

**67.** Number of students failed in Statistics in the year 2003 is what % of the number of students failed in Economics in the same year?
(a) 145.75% (b) 150% (c) 156.25%
(d) 158.25% (e) None of these

**68.** Find the ratio between the total number of students appeared in Economics from 2002 to 2004 together and the total number of students appeared in Statistics from year 2003 to 2005 together?
(a) 13 : 14 (b) 14 : 13 (c) 15 : 16
(d) 16 : 15 (e) None of these

**69.** Find the difference between the total number of students passed in Statistics from year 2002 and total number of students failed in Economics from year 2005.
(a) 690 (b) 385 (c) 485
(d) 550 (e) 610

**70.** Find the average number of students appeared in Economics from year 2001 to 2004 together?
(a) 3090 (b) 3015 (c) 3060
(d) 3075 (e) 3850

**Direction (71-75):** What approximate value should come in place of question mark (?) in the following questions? (Note: You are not expected to calculate the exact value)

**71.** ? % of (5284.89 ÷ 7.08) = 986.01 – 533. 06
(a) 42 (b) 39 (c) 74
(d) 65 (e) 60

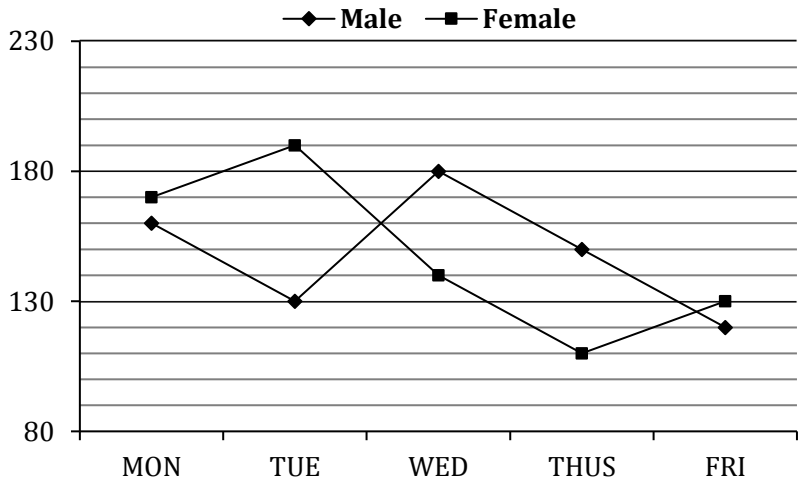
**72.** (1041.84 + ?) ÷ 3.02 = 1816.25 ÷ 4.01
(a) 442 (b) 337 (c) 385
(d) 268 (e) 320

**73.** 69.3% of 445.12 ÷ 14.06 = 623.08 ÷ ?
(a) 28 (b) 19 (c) 21
(d) 33 (e) 37

**74.** $?^2$ + 114.09 – 24.06 × 5.14 = 163.19
(a) 7 (b) 13 (c) 11
(d) 15 (e) 19

**75.** 768.16 ÷ 11.87 × $\sqrt{257}$ – 58.05 = ?
(a) 1033 (b) 1175 (c) 966
(d) 880 (e) 975

**Directions (76-80):** Study the following line graph carefully and answer the following questions.
Number of males and number of females are given. They are visiting a place from Monday to Friday.



**76.** Find the ratio of the total number of males visited the place on Tuesday and Thursday together to the total number of females visited the place on Monday and Friday together?
(a) 29 : 30 (b) 30 : 29 (c) 25 : 26
(d) 26 : 25 (e) None of these

**77.** Total number of males and females together visited the place on Tuesday are what percent more/less than the total number of male and females together visited the place on Thursday ?
(a) $26\frac{12}{13}\%$ (b) $25\frac{3}{13}\%$ (c) $26\frac{3}{13}\%$
(d) $25\frac{7}{13}\%$ (e) None of these

**78.** Find the difference between the total number of females visited the place from Monday to Wednesday and the total number of males visited the place from Wednesday to Friday?
(a) 30 (b) 60 (c) 40
(d) 50 (e) None of these

**79.** If on Saturday the number of males and number of females increased by 25% and 20% respectively as compared to that on Friday then find the total number of males and females together visited the place on Saturday?
(a) 196 (b) 306 (c) 316
(d) 206 (e) 216

**80.** Total number of males and females visited the place on Monday and Tuesday together is how much more than the total number of males and females visited the place on Thursday and Friday together?
(a) 175 (b) 125 (c) 150
(d) 160 (e)130

# Mock 02 : Solutions

## REASONING ABILITY

**1. (c);** LP

**2. (d);**

4 6 5 7 9 7 3 9

**3. (a);** Race, Care

**4. (c);**

9 4 3 6 5 2 7

8 6 2 8 4 4 6

**5. (a);**

M O N S T E R

E M N O R S T

**Directions (6-10):**

| Number | Box |
|---|---|
| 8 | B |
| 7 | C |
| 6 | G |
| 5 | F |
| 4 | A |
| 3 | H |
| 2 | D |
| 1 | E |

**6. (c);** **7. (a);** **8. (e);**
**9. (e);** **10. (e);**

**Directions (11-15):**
**11. (e);** Both conclusion I and II follow.

**12. (a);** Only conclusion I follows.

**13. (a);** Only conclusion I follows.

**14. (c);** Either conclusion I or II follows.

**15. (b);** Only conclusion II follows.

**Directions (16-20):**

| Month | Person |
|---|---|
| January | C |
| February | A |
| March | G |
| April | E |
| June | D |
| August | F |
| October | B |

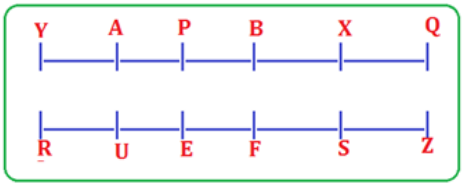
**16. (b);** **17. (b);** **18. (e);**
**19. (d);** **20. (e);**

**Directions (21-25):**

| Word | Code |
|---|---|
| Card | ja |
| Time | sa |
| Win/team | la/ta |
| Fight | da |
| Game/Play | pa/ra |
| In | fa |

**21. (a);** **22. (b);** **23. (c);**
**24. (d);** **25. (d);**

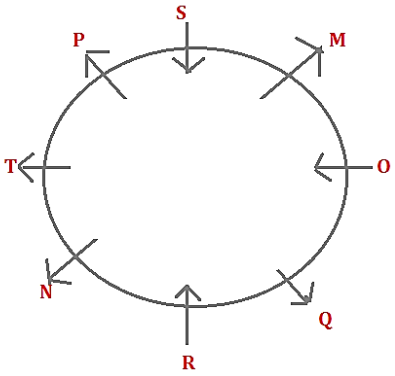
**Direction (26-30):**




**26. (a);** **27. (e);** **28. (e);**

**29. (b);** **30. (e);**

**Direction (31-35):**

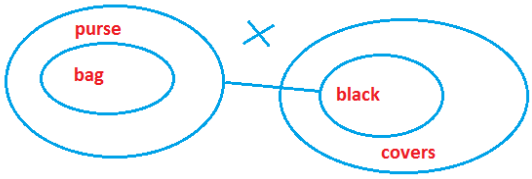



**31. (b);** **32. (b);** **33. (c);**

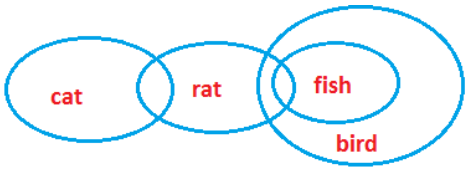
**34. (b);** **35. (c);**

**Directions (36–40):**

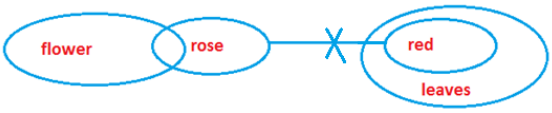
**36. (d);**



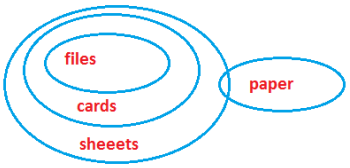

**37. (e);**



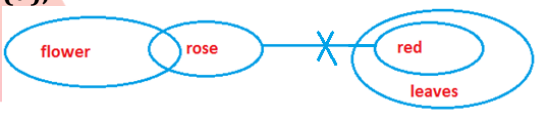

**38. (e);**




**39. (a);**



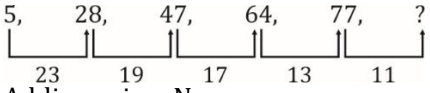

**40. (d);**




## QUANTITATIVE APTITUDE

**41. (c);** Series is ÷2–1, ÷2–1
(22÷2)–1=10

**42. (d);**

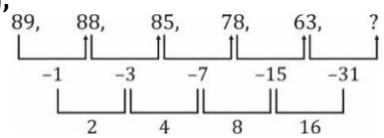



Adding prime No.
77 + 11 = 88

**43. (a);** (7+1) × 0.5 = 4
(4+1) × 1 = 5
(5+1) × 2 = 12
(12+1) × 4 =52
(52 +1)× 8 = 424

**44. (c);** (6×1)–2 = 4
(4×2)–3 = 5
(5×3) –4 = 11
(11×4) –5 = 39
(39×5) –6 = 189

**45. (d);**




63 – 31 = 32

**46. (a);** Let a consecutive odd numbers
$= x - 2,\ x$ and $x + 2$
and consecutive even numbers
$= y - 2,\ y,\ y + 2$
So, $y - 2 = 9 + x + 2$
$y - x = 13$ ... (i)
and
$(x)^2 + 507 = (y)^2$
$y^2 - x^2 = 507$
$(x + y)(y - x) = 507$
$(x + y) = \frac{507}{13} \Rightarrow x + y = 39$ ... $(i)$
Solving (i) and (ii) $y = 26$ and $x = 13$
so smallest odd numbers = $x - 2 = 13 - 2 = 11$

**47. (c);** A complete work in 15 days.
B will complete work in 10 days.
They together will complete whole work
$= \frac{15\times10}{25} = 6\ days$
A and B together worked for = $6 \times {}^{2}/_{3} = 4$ days

**48. (d);** $Speed\ of\ downstream = \frac{9.6}{36} km/min$
$= 16\ km/hr$
Speed of current = 1.6 km/hr
Let speed of man in still water = $x$
So, $x$ = 16 – 1.6 = 14.4 km/hr
$Required\ time\ in\ upstream = \frac{19.2}{14.4-1.6}$
$= 1.5\ hours$

**49. (b);** Ratio of profit of A and B = 1200 : 750
= 24 : 15 = 8 : 5
So,
$\frac{1200\times12}{1500\times y} = \frac{8}{5}$
$y = 6$ months
x = 6 month

**50. (d);** $\frac{2\pi rh}{2\pi r(r+h)} = \frac{3}{5}$
5h = 3r + 3h
2h = 3r
and
2πrh = 1848
$2 \times \frac{22}{7} \times \frac{2}{3}h \times h = 1848$
$h = 21$

**51. (c);** Let male who purchased book from Store E = $x$
Then
$x + x + 21 = \frac{22}{100} \times 550$
$x = 50$
Required number of females = 50 + 21 = 71

**52. (b);** $\frac{18}{5} = \frac{x}{32}$
$x = \frac{18\times32}{5} = 18 \times 6.4 = 115.2$

**53. (e);** $Total\ books\ of\ store\ XYZ = \frac{120}{100} \times 550$
$= 660$
Total books sold by store A and B
= (18% + 12%) of 660 = 198

**54. (a);** Required ratio = (18% + 16%) : (32% + 22%)
= 34 : 54 = 17 : 27

**55. (c);** Required difference
$= \frac{1}{2}[(32\% + 16\%) - (18\% + 22\%)]550$
$= \frac{1}{2} \times 8\%\ of\ 550 = 4\%\ of\ 550 = 22$

**56. (d);**
I. $x^2 + 5x + 4x + 20 = 0$
$x(x + 5) + 4(x + 5) = 0$
$(x + 4)(x + 5) = 0$
$x = -4, -5$
II. $y^2 = 16$
$y = \pm4$
$\therefore x \leq y$

**57. (a);**
I. $x^2 - 7x + 12 = 0$
$x^2 - 4x - 3x + 12 = 0$
$x(x - 4) - 3(x - 4) = 0$
$(x - 3)(x - 4) = 0$
$x = 3, 4$
II. $3y^2 - 11y + 10 = 0$
$3y^2 - 6y - 5y + 10 = 0$
$3y(y - 2) - 5(y - 2) = 0$
$(3y - 5)(y - 2) = 0$
$y = 2, \frac{5}{3}$
$\therefore x > y$

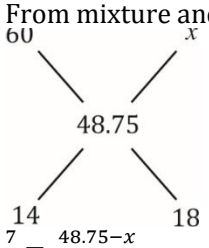
**58. (c);**
I. $x^2 - 8x + 15 = 0$
$x^2 - 3x - 5x + 15 = 0$
$x(x - 3) - 5(x - 3) = 0$
$(x - 3)(x - 5) = 0$
$x = 3, 5$
II. $y^2 - 12y + 36 = 0$
$y^2 - 6y - 6y + 36 = 0$
$y(y - 6) - 6(y - 6) = 0$
$(y - 6)(y - 6) = 0$
$y = 6$
$\therefore x < y$

**59. (e);**
I. $2x^2 + 9x + 7 = 0$
$2x^2 + 7x + 2x + 7 = 0$
$x(2x + 7) + 1(2x + 7) = 0$
$(x + 1)(2x + 7) = 0$
$x = -1, -\frac{7}{2}$
II. $y^2 + 4y + 4 = 0$
$y^2 + 2y + 2y + 4 = 0$
$y(y + 2) + 2(y + 2) = 0$
$(y + 2)(y + 2) = 0$
$y = -2, -2$
$\therefore$ No relation.

**60. (d);**
I. $2x^2 + 15x + 28 = 0$
$2x^2 + 8x + 7x + 28 = 0$
$2x(x + 4) + 7(x + 4) = 0$
$(2x + 7)(x + 4) = 0$
$x = \left(-\frac{7}{2}\right), -4$
II. $2y^2 + 13y + 21 = 0$
$2y^2 + 7y + 6y + 21 = 0$
$y(2y + 7) + 3(2y + 7) = 0$
$(y + 3)(2y + 7) = 0$
$y = -3, \frac{-7}{2}$
$x \leq y$

**61. (d);** In 16 second distance covered by both
= 16 × 25 = 400 m
So length of A = 400 – 205 = 195
Required difference = 10 m

**62. (c);** Let cost price of mixture = $y$
$So, \frac{4}{3}y = 65$
$y = 48.75$
From mixture and allegation




$\frac{7}{9} = \frac{48.75-x}{60-48.75}$
$78.75 = 438.75 - 9x$
$360 = 9x$
$x = 40$ Rs./kg

**63. (a);** Let B's age = $x$
So A's age = $x - 3$
$\frac{x-5}{x+1} = \frac{3}{4}$
$x = 23$
A's age = $23-3 = 20\ years$

**64. (d);** Probability that no ball is green
$\frac{^{10}C_1 \times ^{9}C_1}{15\times14} = \frac{90}{15\times14} = \frac{3}{7}$
Required probability $= 1 - \frac{3}{7} = \frac{4}{7}$

**65. (a);** Let C.P. of A = $x$
So C.P. of B = $200 + x$
According to question
$\frac{\frac{110}{100}(x+200)}{\frac{60}{100}x} = \frac{11}{4} \Rightarrow \frac{x+200}{6x} = \frac{1}{4}$
$x = 400$
If it is sold at 20% loss then selling price
$= \frac{80}{100} \times 400 = 320$

**66. (b);** No. of students failed in Economics in year 2002
$= \frac{(100-45)}{100} \times 3800 = 2090$
No. of students failed in Economics in year 2003
$= \frac{(100-60)}{100} \times 2600 = 1040$
$Required\ average = \frac{2090+1040}{2} = 1565$
$Short\ trick = \frac{55\times38+40\times26}{2} = 1565$

**67. (c);** No. of students failed in Statistics in year 2003
$= \frac{100-35}{100} \times 2500 = 1625$
No. of students failed in Economics in year 2003
$= \frac{100-60}{100} \times 2600 = 1040$
$Required\ \% = \frac{1625}{1040} \times 100 = 156.25\%$
$Short\ trick = \frac{65\times25}{40\times26} \times 100 = 156.25\%$

**68. (d);** Total no. of students appeared in Economics from 2002 to 2004
= 3800 + 2600 + 4800 = 11200
Total no. of students appeared in Statistics from 2003 to 2005
= 2500 + 3200 + 4800 = 10500
Required ratio = 11,200 : 10,500 = 16 : 15

**69. (b);** Total no. of students passed in Statistics in year 2002
$= \frac{55}{100} \times 2700 = 1485$
Total no. of students failed in Economics in year 2005
$= \frac{50}{100} \times 2200 = 1100$
Required difference = 1485 – 1100 = 385
Short trick = 55 × 27 – 50 × 22 = 385

**70. (e);** Average no. of students appeared in Economics from year 2001 to 2004 together
$= \frac{4200+3800+2600+4800}{4} = \frac{15400}{4} = 3850$

**71. (e);** $\frac{?}{100} \times 750 = 450 \Rightarrow ? \approx 60$

**72. (e);** $\frac{(1042+?)}{3.02} = 454 \Rightarrow ? = 320$

**73. (a);** $\frac{310}{14} = \frac{625}{?} \Rightarrow ? \approx 28$

**74. (b);** $?^2 = 170 \Rightarrow ? \approx 13$

**75. (c);** $\approx 64 \times 16 - 58 \approx 966$

**76. (a);** Total no. of males visited on Tuesday and Thursday = 140 + 150 = 290
Total no. of females visited on Monday and Friday = 170 + 130 = 300
Required ratio = 290: 300 = 29: 30

**77. (a);** Total no. of males and females together on Tuesday = 140 + 190 = 330
Total no. of males and females together on Thursday = 150 + 110 = 260
$Required\ \% = \frac{330-260}{260} \times 100 = 26\frac{12}{13}\%$

**78. (d);** Total no. of females visited from Monday to Wednesday = 170 + 190 + 140 = 500
Total no. of males visited from Wednesday to Friday = 180 + 150 + 120 = 450
Required difference = 500 – 450 = 50

**79. (b);** On Saturday —
Total no. of males visited the place
$= \frac{125}{100} \times 120 = 150$
Total no. of females visited the place
$= \frac{120}{100} \times 130 = 156$
Required males and females
= 150 + 156 = 306

**80. (c);** Total males and females visited the place on Monday and Tuesday together
= 160 + 140 + 170 + 190 = 660
Total males and females visited the place on Thursday and Friday together
= 150 + 120 + 110 + 130 = 510
Required no. of persons = 660 – 510 = 150

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# Mock 03

# IBPS RRB PO Prelims 2016

## REASONING ABILITY

**Directions: (1–5):** In these questions, a relationship between different elements is shown in the statements(s). The statements are followed by two conclusions. Give answer
(a) if only conclusion I is true.
(b) if only conclusion II is true.
(c) if either conclusion I or II is true.
(d) if neither conclusion I nor II is true.
(d) if both conclusions I and II are true.

**1.** **Statements :** A > B ≥ C < D, C = E > G
**Conclusions : I.** D > E **II.** B > E

**2.** **Statements :** P ≤ Q > M ≥ N, Q = S
**Conclusions : I.** S > P **II.** N < S

**3.** **Statements :** S > M = Z > T < Q > V
**Conclusions : I.** V = S **II.** Q > M

**4.** **Statements :** T < U = V ≤ S > P ≥ Q
**Conclusions : I.** S > T **II.** V ≥ Q

**5.** **Statements :** M ≥ N > R > W, E = J > L ≥ W
**Conclusions : I.** E > W **II.** M > L

**Directions (6-10):** In each of the question-sets below are three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Given answer.
(a) If only conclusions I follows.
(b) if only conclusion II follows.
(c) if either conclusions I or conclusion II follows.
(d) if neither conclusion I nor conclusion II follows.
(e) if both conclusion I and conclusion II follow.

**6.** **Statements:** All pencils are Cutter
Some Cutter are Scale.
No Scale is a campass.
**Conclusions:**
**I.** All pencils being Scale is a possibility.
**II.** No campass is a Cutter.

**7.** **Statements:** Some circles are triangles.
All triangles are squares.
No square is a rectangle.
**Conclusions:**
**I.** Some triangles being rectangles is a possibility.
**II.** All squares being circles is a possibility.

**8.** **Statements:** All pencils are Cutter
Some Cutter are Scale.
No Scale is a compass.
**Conclusions:**
**I.** All compass being pencils is a possibility.
**II.** At least some Cutters are pencils.

**9.** **Statements:** Some wallets are bags.
Some bags are leather.
All purses are leather.
**Conclusions:** **I.** some purse are bags.
**II.** Some purse are wallet.

**10.** **Statements:** Some circles are triangles.
All triangles are squares.
No square is a rectangle.
**Conclusions:**
**I.** No rectangle is a triangle.
**II.** Some circles are not rectangles.

**Directions (11-15):** Study the following information to answer the given questions
Eight students M, N, O, P , U, V, W and X are sitting around a square table in such a way four of them sit at four corners while four sit in the middle of each of the four sides. The one who sit at the 4 corners face the centre and others facing outside.
M who faces the centre sits third to the left of V. U who faces the centre is not an immediate neighbour of V. Only one person sits between V and W. P sits second to right of N. N faces the centre. O is not an immediate neighbour of M.

**11.** Which one does not belong to that group out of five?
(a)N (b)O (c)U
(d)P (e)M

**12.** Which will come in the place of ?
NOU UXM MWP ?
(a)PVN (b)PWM (c)POW
(d)POV (e)None of these

**13.** What is the position of W with respect to O ?
(a)Third to the right (b)Second to the left
(c)Second to the right (d)Fourth to the right
(e)None of these

**14.** Who sits third to the left of N ?
(a)X (b)M (c)W
(d)V (e)None of these

**15.** Which is true from the given arrangement ?
(a)W faces the centre (b)N faces outside
(c)X faces inside (d)M faces the centre
(e)None of these

**Directions (16-18):** Study the information carefully and answer the question given below.
M is father of A and C. R is brother of C. A is Husband of T and S is daughter of T. V is grandmother of S.

**16.** How is T related to M?
(a) Son in law (b) Daughter
(c) Daughter in law (d) Can't be determined
(e) None of these

**17.** If R has only one sister C than what is the relation of A to S?
(a) Mother (b) Father (c) Uncle
(d) Can't be determined
(e) None of these

**18.** How is M related to S?
(a) Father (b) Father in law
(c) Grandfather (d) Granddaughter
(e) None of these.

**Directions (19-23):** Study the following information carefully to answer the given questions:
Eight friends P, Q, R, S, T, U, V and W are seated in a straight line facing north, but not necessarily in the same order.

- Q sits second to right of U. U sits at one of the extreme ends of the line.
- Only three persons sit between Q and T.
- R sit third to the left of S. Only two persons sit between S and P.
- V is not an immediate neighbor of T.

**19.** Who among the following represents the person seated at the extreme right of the line?
(a) V (b) W (c)U
(d) R (e) P

**20.** Who among the following sit exactly between S and P?
(a) U, P (b) Q, U (c) U, V
(d) T, W (e) Q, T

**21.** What is the position of V with respect to T?
(a) Third to the left (b) Second to the right
(c) Fourth to the right (d) Third to the right
(e) Second to the left

**22.** Based on the given arrangement, which of the following is true with respect to W?
(a) Only two persons sit between W and R.
(b) Only two persons sit to the right of W.
(c) None of the given options is true.
(d) Both R and P are immediate neighbors of W.
(e) V sits on the immediate right of W.

**23.** How many persons are seated between V and P?
(a) None (b) One (c) Two
(d) Four (e) Three

**24.** In a certain code language SERIES is written as QCGTGU. How is EXPERT written in that code language?
(a) VTGRZG (b) RPCRZG (c) GZRCPR
(d) RPCGZR (e) None of these

**25.** How many such pairs of letters are there in the word COMPOSE each of which has many letters between them in the word as they have between them in the English alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) None of these

**Directions (26-30):** Study the information carefully and answer the question given below.
Nine persons P, Q, R, S, T, U, V, W and X. they live on a separate floor each of a 9-floor building but not necessarily in the same order. The ground floor is numbered 1, the first floor is numbered 2 and so on until the topmost floor is numbered Nine.
Only two persons live below the floor on which V lives. Only one person lives between V and P. W lives on an odd-numbered floor but not on floor no. 7.
Only two persons live between W and Q. X does not live on the topmost floor. P does not live on the lowermost floor. S lives immediately below R but R does not sit on topmost floor. Neither R nor T live on floor no 6. U lives immediately above P.

**26.** How many persons live between the floors on which P and S live?
(a) Three (b) More than three
(c) None (d) Two (e) One

**27.** Who lives on the floor immediately below V?
(a) U (b) T (c) S
(d) Q (e) X

**28.** On which of the following floor numbers does X live?
(a) Four (b) One (c) Two
(d) Five (e) Seven

**29.** Which of the following is true with respect to U as per the given arrangement?
(a) Only three persons live between U and Q
(b) Only three persons live above U.
(c) Only one person sits between U and S.
(d) U sits on odd numbered floor.
(e) None of these.

**30.** Who lives on the floor numbered 5?
(a) U (b) Q (c) S
(d) P (e) None of these

**Directions (31-33):** Study the information carefully and answer the question given below.
Mark starts from his house and moving in the south direction and after moving 25m, he took a right turn and move 40 m to reach his uncle house. again Mark start moving southwards and after travelling 50m he took a left and travels 80 m to reach his aunt home.

**31.** In which direction his aunt house is located with respect to his house?
(a) south west (b) south east (c) north east
(d) north west (e) None of these

**32.** Uncle house in which direction with respect to aunt house?
(a) North east (b) North west (c) South west
(d) South east (e) None of these

**33.** If Point A is 25m. to the north of uncle's house then what is the distance between A and Mark house?
(a) 40 m. (b) 30 m. (c) 20 m.
(d) Can't be determined
(e) None of these.

**Directions (34-38):** Study the information carefully and answer the question given below.
Gaurav Join classes from Monday to Sunday of the same week for different subject viz. Biology, Chemistry, Physics, Hindi, - Mathematics, English and Geography.
- Hindi class taken by him on Wednesday.
- There is one day gap between Hindi class and Mathematics class.
- And there is three day gap between mathematics class and English class.
- English class is scheduled immediately before Physics class but not in Monday.
- Chemistry is scheduled immediately after mathematics class.
- There is one day gap between Chemistry class and Geography class. And biology class scheduled on Sunday.

**34.** How many days gap between Maths and Chemistry class?
(a) One (b) Two (c) Three
(d) Four (e) None

**35.** Hindi class is scheduled on which day?
(a) Monday (b) Wednesday (c) Thursday
(d) Friday (e) None of these

**36.** Which of the following is correct combination given below?
(a) Hindi= Monday
(b) Physics= Tuesday
(c) Chemistry= Thursday
(d) Mathematics= Monday
(e) Biology= Friday

**37.** On which day of the week is Chemistry class is schedule?
(a) Monday (b) Tuesday (c) Wednesday
(d) Thursday (e) None of these.

**38.** Four of the followings five are alike in a certain ways form a group which one does not belong to the group?
(a) Tuesday=Hindi
(b) Monday=Chemistry
(c) Friday=Physics
(d) Wednesday=Hindi
(e) Thursday=English

**39.** If Divyaraj finds that he is fourteenth from the left end of the row and 7th from the right end of the row, then how many boys must be added to the row such that there are 30 boys in the row?
(a) 8 (b) 10 (c) 12
(d) 14 (e) None of these

**40.** Find odd one out from given series-
AZD FUI HSK OLP SHV
(a) AZD (b) FUI (c) HSK
(d) OLP (e) None of these

## QUANTITATIVE APTITUDE

**41.** Two pipes can fill a tank in 10 hours and 16 hours respectively. A third pipe can empty the tank in 32 hours. If all the three pipes are opened simultaneously then in how much time the tank will be full? (in hours)
(a) $7\frac{11}{21}$ (b) $7\frac{13}{21}$ (c) $8\frac{4}{21}$
(d) $6\frac{5}{14}$ (e) $8\frac{9}{14}$

**42.** a, b, c and d are four consecutive even numbers, if the sum of 'a' and 'c' is 120, what is the product of 'b' and 'd'?
(a) 4030 (b) 3780 (c) 3900
(d) 3900 (e) 3840

**43.** Three numbers are given. The average of first and third numbers is 24 more than that of average of second and third numbers. Find out the difference between the first and second numbers.
(a) 36 (b) 40 (c) 42
(d) 48 (e) 46

**44.** If 3 men or 9 boys can finish a piece of work in 21 days. In how many days can 5 men and 6 boys can complete the same piece of work?
(a) 12 days (b) 8 days (c) 14 days
(d) 10 days (e) 9 days

**45.** A sum of money fetches Rs 240 as simple interest at the rate of 5 p.c.p.a. after 6 years. What is the principal?
(a) Rs 200 (b) Rs 400 (c) Rs 800
(d) Rs 1,200 (e) Rs 1,000

**Directions (46– 50):** Study the given table carefully and answer the questions.
Table shows the total population in six different cities and the ratio of literate to illiterate population and also the percentage of graduate out of literate population in each city.

| Cities | Population (in thousand) | Literate: Illiterate | Percentage Graduate out of literate |
|---|---|---|---|
| A | 22 | 5 : 6 | 20% |
| B | 16 | 3 : 5 | 35% |
| C | 96 | 2 : 1 | 32% |
| D | 20 | 2 : 3 | 25% |
| E | 24 | 5 : 3 | $33\frac{1}{3}\%$ |

**46.** Graduate population of city B and D together is approximately what percent more/less than graduate population of city A and E together?
(a) 54% (b) 50% (c) 47%
(d) 42% (e) 37%

**47.** Population of city C who are literate but not graduate is how much more than the average graduate population of city D and E together?
(a) 40020 (b) 4020 (c) 4200
(d) 4420 (e) 40040

**48.** If the ratio of illiterate male to female in city B is 3:5 and ratio of graduate male to female population in city D is 2 : 3. Then find the ratio of total illiterate male in city B and graduate female in city D?
(a) 23 : 7 (b) 8 : 25 (c) 75 : 16
(d) 21 : 8 (e) 25 : 8

**49.** Illiterate population of city D is what percent of the Illiterate population of city 'C'?
(a) 25% (b) 37.5% (c) 40%
(d) 50% (e) 62.5%

**50.** Literate population of cities A and B together is approximately what percentage of the population which are not graduate of city D?
(a) 82% (b) 72% (c) 93%
(d) 79% (e) 89%

**Directions (51-55):** What will come in the place of the question mark (?) in the following number series?

**51.** 1, 11, 59, 239, 719, ?
(a) 1438 (b) 1439 (c) 1428
(d) 1429 (e) 1419

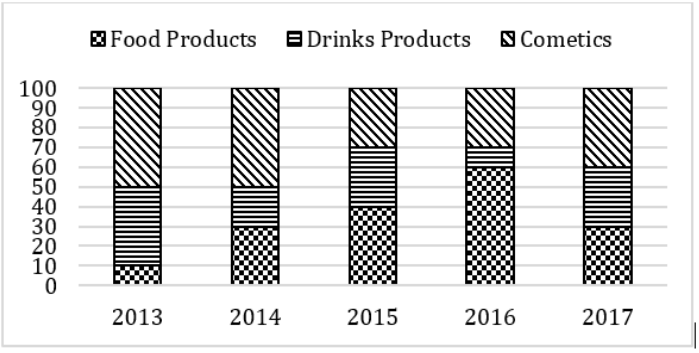
**52.** 18, 8, 30, 20, 42, ?
(a) 38 (b) 36 (c) 28
(d) 32 (e) 30

**53.** 2880, 480, 96, ?, 8, 4
(a) 16 (b) 24 (c) 20
(d) 28 (e) 32

**54.** 8, 10, 20, 50, ?, 248
(a) 115 (b) 103 (c) 113
(d) 108 (e) 118

**55.** 8, 6, 8, 14, 30, ?
(a) 75 (b) 76 (c) 77
(d) 78 (e) 79

**Directions (56-60)**: A Company produces three different products namely food, drinks and cosmetic products. If total production of the company was same for all years and % production of three products in particular years given below,then answer the questions that follows:



**56.** In 2013, number of food products produced by the company is what percent more/less than cosmetic products produced in year 2016?
(a) $33\frac{1}{3}\%$ (b) 25% (c) $66\frac{2}{3}\%$
(d) 20% (e) 50%

**57.** If total production in year 2017 was 1,20,000. Find the difference between number of food products produced in 2017 and drink products produced in 2014?
(a) 12000 (b) 15000 (c) 12500
(d) 10000 (e) 11500

**58.** Find the ratio b/w number of cosmetic products produced in 2017 and number of food products produced in 2013.
(a) 1 : 4 (b) 1 : 2 (c) 2 : 1
(d) 3 : 4 (e) 4 : 1

**59.** The difference b/w food products and drink products produced by the company in 2015 is 15000. Find the average of food and cosmetic products produced by company in 2013?
(a) 30000 (b) 50000 (c) 40000
(d) 45000 (e) 25000

**60.** Find the total production in 2018 if there is an increase of 10% in total production in 2018 as compared to previous year given that number of drink products produced in 2015 was 12000?
(a) 55000 (b) 44000 (c) 66000
(d) 33000 (e) None of these

**Directions (61-65):** In each of these questions, two equations I and II are given. You have to solve both the equations and give answer
(a) if $x > y$ (b) if $x \geq y$
(c) if $x < y$ (d) if $x \leq y$
(e) if $x = y$ or no relation can be established between $x$ and $y$

**61.** **I.** $x^2 - 264 = 361$ **II.** $y^3 - 878 = 453$

**62.** **I.** $3x^2 + 14x + 15 = 0$ **II.** $3y^2 - 1\,3y + 14 = 0$

**63.** **I.** $12x^2 - 17x + 6 = 0$ **II.** $y^2 - 16y + 63 = 0$

**64.** **I.** $x^2 - 48x + 575 = 0$ **II.** $46y^2 - 35y - 11 = 0$

**65.** **I.** $15x^2 - 11x - 12 = 0$ **II.** $20y^2 - 49y + 30 = 0$

**66.** Three friends Satish, Bhavya and Abhi complete the work in 10 days, 15 days & 12 days respectively. They started to work together but Satish left the work after two days and Abhi left the work 1 day before the completion of the work. In how many days the whole work will be completed?
(a) $5\frac{8}{9}$ days (b) 6 days (c) $7\frac{7}{8}$ days
(d) 8 days (e) 9 days

**67.** $\frac{2}{3}^{rd}$ of first number is equal to the cube of the second number. If the second number is equal to 12% of 100, what is sum of the first & 2nd number?
(a) 2408 (b) 2640 (c) 2426
(d) 2604 (e) 2804

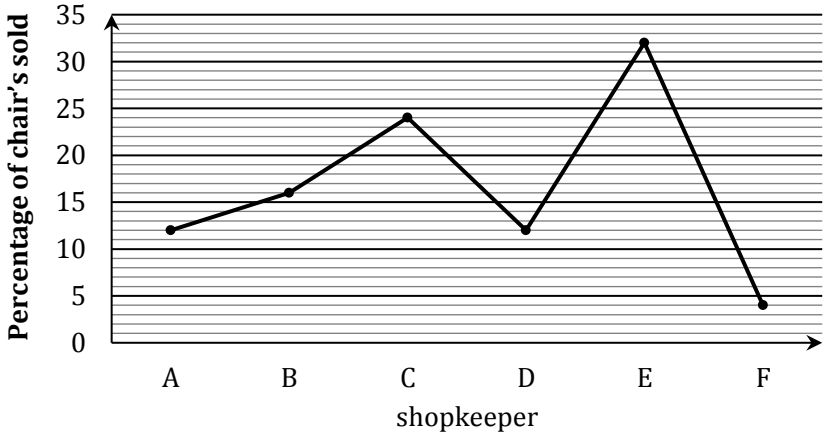
**68.** A wholeseller sells an item to a retailer at 20% discount, but charges 10% on the discounted price for packaging & delivery. The retailer sells it for 1023 more, thereby earning a profit of 25%. At what price had the wholeseller marked the item ?
(a) Rs. 4620 (b) Rs. 4650 (c) Rs. 4850
(d) Rs. 5240 (e) Rs. 5445

**69.** The present age of Bhagat and Abhi are in ratio of 9 : 8 respectively. After 10 years the ratio of their ages will be 10 : 9. What is the difference in their present age?
(a) 8 years (b) 6 years (c) 12 years
(d) 4 years (e) 10 years

**70.** The circumference of two circles is 132 m and 176 m respectively. What is difference between the area of larger circle and smaller circle ? (in $m^2$)
(a) 1052 (b) 1128 (c) 1258
(d) 1078 (e) 1528

**Directions (71-75):** Study the given line graph carefully and answer the questions.
Line graph shows the percentage of chair sold by six shopkeepers.

Total chair sold by all shopkeepers = 96 thousands.



**71.** Chairs sold by shopkeeper B and D together is how much more than chairs sold by shopkeeper A and F together ?
(a) 10420 (b) 11520 (c) 12480
(d) 11740 (e) 15220

**72.** Chairs sold by shopkeeper A and E together is how much percentage more than chairs sold by shopkeeper B and C together?
(a) 10% (b) 6% (c) 8%
(d) 12% (e) 14%

**73.** F sold only three types of chairs i.e. K, L and M in the ratio 3 : 5 : 4 .Find the difference of chairs sold by F of type K and M together and that of type L?
(a) 320 (b) 840 (c) 740
(d) 420 (e) 640

**74.** If there is another shopkeeper P who sells three types of chairs i.e. X, Y and Z. If chairs of type X sold is half of the total chairs sold by shopkeeper F, Chairs of type Y sold is 20% of the chairs sold by shopkeeper A and chairs of type Z sold is $\frac{2}{5}$ th of total chairs sold by shopkeeper B. Then find total number of chairs sold by Shopkeeper P?
(a) 12348 (b) 16368 (c) 12244
(d) 10368 (e) 10428

**75.** What is the ratio of average of chairs sold by shopkeeper B, C and D together to average of chairs sold by shopkeeper A and E together?
(a) 25 : 33 (b) 21 : 11 (c) 26 : 33
(d) 11 : 24 (e) 11 : 26

**Directions (76-80):** What should come in place of question mark (?) in the following questions?

**76.** 1528 + 525 ÷ 25 – 840 = 510 + ?
(a) 199 (b) 299 (c) 159
(d) 189 (e) 165

**77.** $\sqrt{1225} \div 7 + 18.5 \times 16 - 18\%$ of 10800 = ? – 1800
(a) 259 (b) 169 (c) 157
(d) 129 (e) 141

**78.** 65% of 180 + ?% of 210 = 80% of 225
(a) 45 (b) 30 (c) 40
(d) 50 (e) 25

**79.** $\sqrt{1500+?+17.5 \times 8 - 5\% \ of \ 20} = 42$
(a) 145 (b) 115 (c) 120
(d) 135 (e) 125

**80.** $\frac{13}{17}$ of $\frac{8}{156}$ of 153 = ?
(a) 8 (b) 12 (c) 7
(d) 6 (e) 4

# Mock 03 : Solutions

## REASONING ABILITY

**1. (a);** $D > C = E(True) B \geq C = E(False)$

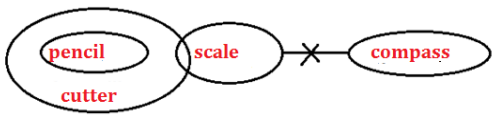
**2. (b);** $S = Q \geq P(False) S = Q > M \geq N(True)$

**3. (d);** $V = S(False) Q > M(False)$

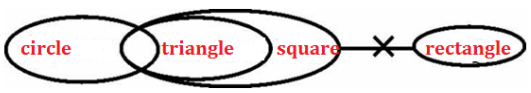
**4. (a);** $S \geq V = U > T(True) V \geq Q(False)$

**5. (a);** $E = J > L \geq W(True) M \geq N > R > W \leq L(False)$

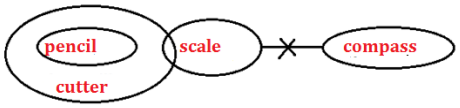
**6. (a);**



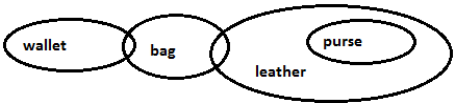

**7. (b);**



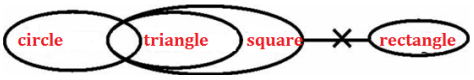

**8. (e);**



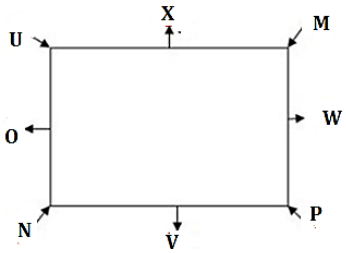

**9. (d);**




**10. (e);**

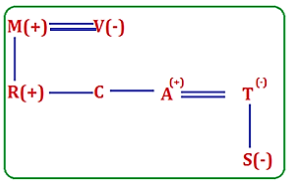



**Direction (11-15);**



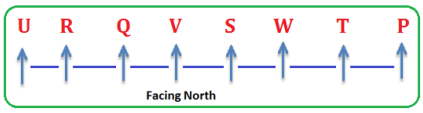
**11. (b); 12. (a); 13. (d);**
**14. (a); 15. (d);**

**Direction (16-18);**



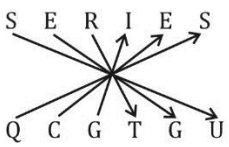

**16. (c); 17. (b); 18. (c);**

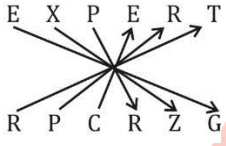
**Direction (19-23);**




**19. (e); 20. (d); 21. (a);**
**22. (b); 23. (e);**

**24. (b);**



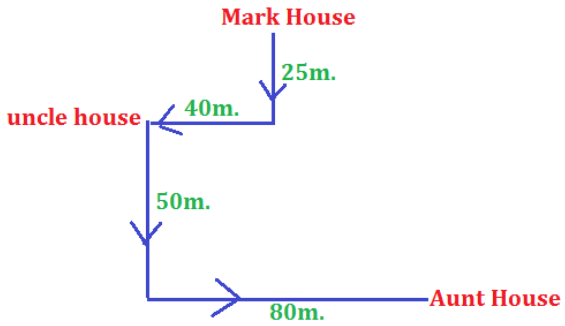

**25. (d);**


**Direction (26-30);**

| Floor | Persons |
|---|---|
| 9 | T |
| 8 | R |
| 7 | S |
| 6 | U |
| 5 | P |
| 4 | Q |
| 3 | V |
| 2 | X |
| 1 | W |

**26. (e); 27. (e); 28. (c);**
**29. (b); 30. (d);**

**Direction (31-33);**




**31. (b); 32. (b); 33. (a);**

**Direction (34-38);**

| Day | Subjects |
|---|---|
| Monday | Mathematics |
| Tuesday | Chemistry |
| Wednesday | Hindi |
| Thursday | Geography |
| Friday | English |
| Saturday | Physics |
| Sunday | Biology |

**34. (e); 35. (b); 36. (d);**
**37. (b); 38. (d); 39. (b);**
**40. (d);**

## QUANTITATIVE APTITUDE

**41. (b);** Part of the tank filled in 1 hour

$= \frac{1}{10} + \frac{1}{16} - \frac{1}{32} = \frac{16+10-5}{160} = \frac{21}{160}$

∴ Tank will be filled in $\frac{160}{21} = 7\frac{13}{21}$ hours

**42. (e);** ∵ a, b, c and d are four consecutive numbers and a + c = 120

∴ a +a+4 = 120

$\Rightarrow 2a = 116 \Rightarrow a = 58$

∴ b = 60 and d= 64

∴ b × d = 60 × 64 = 3840

**43. (d);** Let the numbers be a, b, and c respectively.

$\therefore \frac{a+c}{2} - \frac{b+c}{2} = 24$

⇒ (a +c) – (b + c) = 24 × 2 = 48

⇒ a –b = 48

**44. (e);** ∵ 3 men = 9 boys

∴ 1 man = 3 boys

∴ 5 men + 6 boys

= (5 × 3 + 6) boys = 21 boys

$\therefore M_1D_1 = M_2D_2$

$= 9 \times 21 = 21 \times D_2$

$= D_2 = \frac{9\times21}{21} = 9$ days

**45. (c);** Principal $= \frac{SI \times 100}{Time \times Rate}$

$\therefore \frac{240 \times 100}{5 \times 6} = Rs\ 800$

**46. (d);** Graduate population of city A and E together

$= 22000 \times \frac{5}{11} \times \frac{20}{100} + 24000 \times \frac{5}{8} \times \frac{1}{3}$

$= 2000 + 5000 = 7000$

Graduate population of city B and D together

$= 16000 \times \frac{3}{8} \times \frac{35}{100} + 20000 \times \frac{2}{5} \times \frac{25}{100}$

$= 2100 + 2000 = 4100$

Required percentage $= \frac{7000-4100}{7000} \times 100$

$= \frac{2900}{7000} \times 100 \approx 42\%$

**47. (a);** Population who are literate but not graduate of city C

$= 96000 \times \frac{2}{3} \times \frac{68}{100}$

$= 43520$

Average graduate population of city D & E together

$= \frac{1}{2}\left[20000 \times \frac{2}{5} \times \frac{25}{100} + 24000 \times \frac{5}{8} \times \frac{1}{3}\right]$

$= \frac{1}{2}[2000 + 5000] = 3500$

$\therefore$ Required difference = 43520 – 3500

= 40020

**48. (e);** Illiterate male in city B

$= 16000 \times \frac{5}{8} \times \frac{3}{8} = 3750$

Graduate female in city D

$= 20000 \times \frac{2}{5} \times \frac{25}{100} \times \frac{3}{5}$

$= 1200$

Required ratio $= \frac{3750}{1200} = 25 : 8$

**49. (b);** Illiterate Population in City D

$= 20{,}000 \times \frac{3}{5} = 12000$

Illiterate Population in City C

$= 96{,}000 \times \frac{1}{3} = 32000$

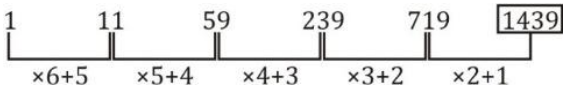
Required % $= \frac{12000}{32000} \times 100 = 37.5\%$

**50. (e);** *Required percentage*

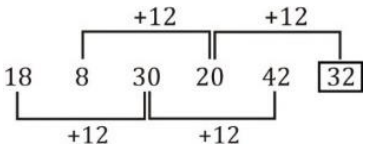
$= \frac{22{,}000 \times \frac{5}{11} + 16{,}000 \times \frac{3}{8}}{20{,}000 \times \frac{3}{5} + 20{,}000 \times \frac{2}{5} \times \frac{75}{100}} \times 100$

$= \frac{10{,}000 + 6{,}000}{12{,}000 + 6{,}000} \times 100 = \frac{1600}{18} \approx 89\%$

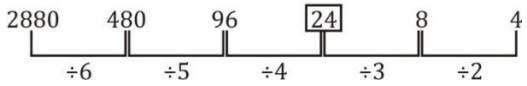
**51. (b);**



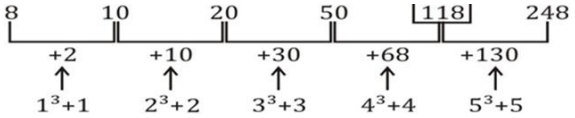

**52. (d);**



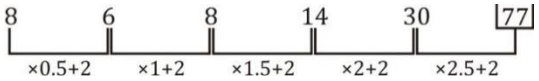

**53. (b);**




**54. (e);**




**55. (c);**




**56. (c);** Let total production of the company be x

$\therefore$ Required percent $= \frac{(.30x - 0.10x)}{0.30x} \times 100$

$= \frac{2}{3} \times 100 = 66\frac{2}{3}\%$ less

**57. (a);** Required difference = 30% of 1,20,000 – 20% of 1,20,000 = 12000

**58. (e);** Let total production be x

Required ratio $= \frac{40\% \text{ of } x}{10\% \text{ of } x} = 4 : 1$

**59. (d);** Let total production be x

ATQ,

10% of x = 15000

$\frac{x}{10} = 15000$

x = 1,50,000

Required average

$= \frac{10\% \text{ of } 1{,}50{,}000 + 50\% \text{ of } 1{,}50{,}000}{2}$

$= \frac{15000 + 75000}{2} = 45000$

**60. (b);** Let total production of each previous years be x

$\therefore \frac{30}{100}x = 12000 \Rightarrow x = 40000$

Total production in 2018 $= \frac{110}{100} \times 40000$

= 44000.

**61. (e);**

| *I.* $x^2 - 264 = 361$ | *II.* $y^3 - 878 = 453$ |
|---|---|
| $or, x^2 = 361 + 264$ | $or, y^3 = 453 + 878$ |
| $\therefore x^2 = 625$ | $or, y^3 = 1331$ |
| $\therefore x = \sqrt{625} = \pm 25$ | $\therefore y = \sqrt[3]{1331} = 11$ |

Hence no relation can be established.

**62. (c);**

| I. $3x^2 + 14x + 15 = 0$ | II. $3y^2 - 13y + 14 = 0$ |
|---|---|
| or, $3x^2 + 9x + 5x + 15 = 0$ | or, $3y^2 - 6y - 7y + 14 = 0$ |
| or, $3x(x + 3) + 5(x + 3) = 0$ | or, $3y(y - 2) - 7(y - 2) = 0$ |
| or, $(3x + 5)(x + 3) = 0$ | or, $(3y - 7)(y - 2) = 0$ |
| $\therefore x = -\frac{5}{3}, -3$ | $\therefore y = \frac{7}{3}, 2$ |

Hence $x < y$

**63. (c);**

I. $12x^2 - 17x + 6 = 0$
or, $12x^2 - 9x - 8x + 6 = 0$
or, $3x(4x - 3) - 2(4x - 3) = 0$
or, $(3x - 2)(4x - 3) = 0$
$\therefore x = \frac{2}{3}, \frac{3}{4}$

II. $y^2 - 16y + 63 = 0$
or, $y^2 - 9y - 7y + 63 = 0$
or, $y(y - 9) - 7(y - 9) = 0$
or, $(y - 7)(y - 9) = 0$
$\therefore y = 7, 9$

Hence $x < y$

**64. (a);**

I. $x^2 - 48x + 575 = 0$
or, $x^2 - 23x - 25x + 575 = 0$
or, $x(x - 23) - 25(x - 23) = 0$
or, $(x - 25)(x - 23) = 0$
$\therefore x = 25, 23$

II. $46y^2 - 35y - 11 = 0$
or, $46y^2 - 46y + 11y - 11 = 0$
or, $46y(y - 1) + 11(y - 1) = 0$
or, $(46y + 11)(y - 1) = 0$
$\therefore y = -\frac{11}{46}, 1$

Hence $x > y$

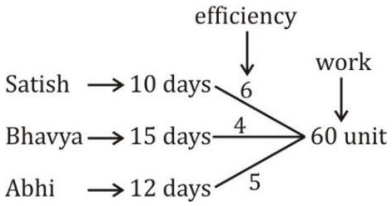
**65. (e);**

I. $15x^2 - 11x - 12 = 0$
or, $15x^2 - 20x + 9x - 12 = 0$
or, $5x(3x - 4) + 3(3x - 4) = 0$
or, $(5x + 3)(3x - 4)$
$\therefore x = -\frac{3}{5}, \frac{4}{3}$

II. $20y^2 - 49y + 30 = 0$
or, $20y^2 - 25y - 24y + 30 = 0$
or, $5y(4y - 5) - 6(4y - 5)$
$\therefore y = \frac{6}{5}, \frac{5}{4}$

No relation

**66. (a);**




(Satish+ Bhavya+ Abhi) 2 days work = 15 × 2 = 30 unit
Bhavya 1 day work = 4 unit
∴ Whole work will be completed
$= 2 + \frac{26}{9} + 1 = 2 + 2\frac{8}{9} + 1$
$= 5\frac{8}{9} days$

**67. (d);** $Second\ no. = \frac{100 \times 12}{100} = 12$
$\therefore\ first\ no. = 12^3 \times \frac{3}{2} = 1728 \times \frac{3}{2}$
$= 2592$
∴ Required sum = 12 + 2592 = 2604

**68. (b);** Let the price marked by whole seller be Rs. x
$\therefore\ S.P.\ of\ article\ for\ whole\ seller = x \times \frac{80}{100} \times \frac{110}{100} = \frac{22x}{25} = C.P\ of\ article\ for\ retailer$
$S.P.\ of\ article\ for\ retailer = \frac{22x}{25} \times \frac{125}{100} = \frac{11x}{10}$
ATQ,
$\frac{11x}{10} - \frac{22x}{25} = 1023$
$\frac{55x - 44x}{50} = 1023$
11x = 1023 × 50
⇒ x = Rs. 4650

**69. (e);** Let present age of Bhagat & Abhi be 9x and 8x respectively
After 10 years.
$\frac{9x+10}{8x+10} = \frac{10}{9}$
81x + 90 = 80x + 100
x = 10
∴ required difference = 10 years.

**70. (d);** Let radius of smaller & larger circles be $r_1$ & $r_2$ respectively.
$2\pi r_1 = 132$
$r_1 = 21$ m
$2\pi r_2 = 176 \Rightarrow r_2 = 28$ m.
∴ Required difference
$= \pi(r_2^2 - r_1^2) = \frac{22}{7} \times 49 \times 7 = 1078\ m^2$

**71. (b);** Required difference
$= [(16 + 12)\% - (12 + 4)\%] \times 96000$
$= \frac{12}{100} \times 96000 = 11520$

**72. (a);** Required percentage
$= \frac{(12+32) - (16+24)}{(16+24)} \times 100$
$= \frac{4}{40} \times 10 = 10\%$

**73. (e);** Total chairs sold by shopkeeper F
$= \frac{4}{100} \times 96000 = 3840$
Required difference
$= \frac{(7-5)}{12} \times 3840 = 640$

**74. (d);** Total chairs sold by Shopkeeper P
$= \left[\frac{1}{2} \times 4 + \frac{1}{5} \times 12 + \frac{2}{5} \times 16\right] \times \frac{96000}{100}$
$= 10368$

**75. (c);** $Required\ ratio = \frac{\frac{16+24+12}{3}}{\frac{12+32}{2}}$
$= \frac{52 \times 2}{3 \times 44} = 26 : 33$

**76. (a);** 1528 + 21 – 840 – 510 = ?
? = 1549 – 1350
? = 199

**77. (c);** $\frac{35}{7} + 296 - 1944 = ? - 1800$
301 + 1800 – 1944 = ?
? = 157.

**78. (b);** $\frac{65}{100} \times 180 + \frac{?}{100} \times 210 = \frac{80}{100} \times 225$
$\frac{?}{100} \times 210 = 180 - 117$
$? = \frac{63 \times 100}{210} = 30$

**79. (e);** 1500 + 140 – 1 + ? = 1764
? = 1764 – 1639
? = 125

**80. (d);** $\frac{13}{17} \times \frac{8}{156} \times 153 = ?\ \Rightarrow\ ? = 6$

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## REASONING ABILITY

**Directions (1-5):** Study the following information carefully and answer the questions given below:

Ten people are sitting in two parallel rows containing five people each in such a way that there is an equal distance between adjacent persons. In row 1 – A, B, C, D, E are seated and all of them are facing north. In row 2 – P, Q, R, S, T are seated and all of them are facing South. Therefore, in the given seating arrangement each member seated in a row faces another member of the other row. D sits third to the left of C. The one facing D sits second to the right of S, who does not face B. Either D or C sit at extreme end. Only one person sit between S and P. Two person sit between A and E, who is an immediate neighbor of C. P does not face E. Q sits third to the right of the one who is sitting opposite to E. T does not sit at extreme end of row.

**1.** Who among the following sit opposite to the one who is second to the right of D?
(a) R (b) S (c) P
(d) Q (e) None of these

**2.** How many persons sit between S and T?
(a) One (b) Two (c) Three
(d) None (e) None of these

**3.** Four among the following five belongs to a group. Who does not belong to that group?
(a) D (b) S (c)T
(d)C (e)B

**4.** Who among the following does not sit at any of the extreme ends in any of the rows?
(a)Q (b)A (c)R
(d)C (e)P

**5.** Who among the following sits opposite to A?
(a)P (b)Q (c)R
(d)S (e)T

**Directions (6-10):** Study the following information carefully and answer the questions given below:

In a certain code language
'key lock room flat' is written as 'ra lo ka fo'
'floor is key home' is written as 'nk nd fo sk'
'flat is lock house' is written as 'da ka nk ra'.

**6.** What is the code for 'room'?
(a) lo (b) sk (c) ra
(d) ka (e) None of these

**7.** 'key is house' can be coded as?
(a) fo da sk (b) nk fo da (c) nk fo nd
(d) Can't be determined (e) None of these

**8.** What is the code for 'floor'?
(a) sk (b) nd
(c)Either sk or nd (d) da (e) None of these

**9.** Which of the following is the code for 'house'?
(a) fo (b) nk (c) sk
(d) da (e)None of these

**10.** If 'floor house quater' is coded as 'sk da xa' than what will be the code for 'home quater'?
(a) da xa (b) nk xa (c) sk xa
(d) nd xa (e) None of these

**Directions (11-15):** In these questions, relationships between different elements are shown in the statements. These statements are followed by two conclusions. Give answer
(a) if only conclusion I follows
(b) if only conclusion II follows
(c) if either conclusion I or conclusion II follows
(d) if neither conclusion I nor conclusion II follows
(e) if both conclusions I and II follow

**11.** **Statement:** C>D>E ; B<A=D
**Conclusions:**
**I.** C>B
**II.** E<B

**12.** **Statement:** G ≥ H = E < I ; E ≥ T=U
Conclusions:
**I.** G>T
**II.** G=T

**13.** **Statement:** S ≤ T ≤U=V; U<O≥N
**Conclusions:**
**I.** T>O
**II.** V<O

**14.** **Statement:** A<B ≤C=D>E=F
**Conclusions:**
**I.** A<D
**II.** F≤B

**15. Statement:** K=L<M=N; P<O≤M
**Conclusions:**
**I.** N<P
**II.** K<O

**16.** What should come in place of question mark (?) in the following series based on the above arrangement?
PA NB KD GG ?
(a) CB (b) BK (c) AB
(d) CA (e) Other than the given options

**17.** How many such pair of numbers are there in the given number "361938479" (Both backward and forward) same as far as according to numeric series?
(a) One (b) Two (c) Three
(d) More than three (e)None of these.

**18.** If it is possible to make only one meaningful word with the 1st ,6th ,9th and10th letters of the word 'HIGHLIGHTS' which would be the second letter of the word from the right? If more than one such word can be formed give 'Y' as the answer. If no such word can be formed, give 'Z' as your answer.
(a) Y (b) S (c) I
(d)H (e) M

**19.** If 1 is subtracted from each odd number and 2 is added to each even in the number 6593427, then how many digits will appear twice in the new number thus formed?
(a) Only 8 (b) Only 8 and 6 (c) 8, 6 and 4
(d) 2, 4 and 6 (e) None of these

**20.** How many letter will be remain in the same position in the word 'FINISH' when they arranged in the ascending order from left to right?
(a) One (b) Two (c) Three
(d) More than Three (e) None

**Directions (21-25):** Read the following information carefully and answer the following questions.

Eight boxes A, B, C, D, E, F, G and H are placed one above the other but not necessarily in the same order. Four boxes are placed between box C and E and none of them is placed on the top or bottom of the stack. Box G is not placed just below or just above box H. Box D is not placed just below or just above box E. The number of boxes places above H is more than that placed below H. There are as many boxes between A and E as between A and F. There are two boxes between boxes C and H.

**21.** How many boxes are placed between D and E?
(a) one (b)two (c) three
(d) four (e) five

**22.** Which of the following box is placed just above H?
(a) C (b) A (c) F
(d) E (e) B

**23.** Which of the following box is placed at bottom?
(a) F (b) C (c) B
(d)G (e)H

**24.** Which of the following boxes is not placed below box D?
(a) F (b) H (c) B
(d) E (e) G

**25.** Which of the following box is not placed in between C and E?
(a) A (b) F (c) D
(d) G (e) Both (b) and (d)

**Directions (26-30):** Study the information and answer the following questions:

Eight persons A, B, C, D, E, F, G and H are sitting around a circular table . Some of them are males and some of them are females. No two females are sitting together. A sits 2nd to the left of C, who faces G. Two persons sit between G and B, who is a male. There are minimum 3 females in the group. D is 2nd right to F, none of them is neighbor of A and none of them is female. Both neighbors of A are male. H is a female facing a male.

**26.** Who among the following sit 3rd right to G?
(a) A (b) F (c) C
(d) B (e) none of these

**27.** How many persons sit between A and E, when counted in anticlockwise direction from E?
(a) none (b) one (c) two
(d) three (e) more than three

**28.** Four of the following five form a group, who among them does not belongs to that group?
(a) D (b) F (c) C
(d) B (e) A

**29.** If all the persons are made to sit in alphabetical order from A in clockwise direction, then how many persons remain in the same position(excluding A)?
(a) none (b) one (c) two
(d) three (e) more than three

**30.** If in a certain way B is related to A, D is related to H, then who among the following is F related to?
(a) A (b) F (c) C
(d) B (e) G

**Directions (31-35):** In each of the questions below are given some statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer

**31. Statements:**
Some Mumbai is Chennai
All Chennai is Bhopal
No Mumbai is Delhi
**Conclusions**
**I.** Some Bhopal is not Delhi.
**II.** All Bhopal being Mumbai is a possibility.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**32. Statements:**
All Fire is water
Some earth is fire
Some fire is air.
**Conclusions:**
**I.** Some water being air is a possibility
**II.** Some water is earth.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**33. Statements:**
No bin is rin
All tin is rin
All pin is rin
**Conclusions:**
**I.** No tin is bin.
**II.** Some tin are pin
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**34. Statements:**
All art is dance
Some art is craft
Some music is dance
**Conclusions:**
**I.** Some music is craft
**II.** No music is craft.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**35. Statements**
No pen is pencil
No pencil is eraser
Some eraser is sharp
**Conclusions:**
**I.** Some pencil is sharp.
**II.** Some sharp are not pen.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**Directions (36-40):** Study the information and answer the following questions:

Seven persons A, B, C, D, E, F, G were born in different months i.e. January, February, April, July, august, September, December of the same year but not necessarily in the same order. Also, they were born in seven different cities i.e. Bhopal, Chennai, cochin, Kolkata, Mumbai, Delhi and Darjeeling.

F was born in Kolkata in a month having less than 31 days. Two persons were born between F and B, who was not born in Delhi. Three persons were born between A and E, who was born after F. D was born before C, who was born in cochin. The person born in Delhi was born before the one who was born in Darjeeling, none of them was born in April. Neither D nor E born in Delhi or Darjeeling. D was born after G, who was born in Mumbai . The one born in Bhopal was born in the month having 31 days. The one who was born in Bhopal was born immediately before the one born in Chennai.

**36.** Who among the following was born in April?
(a) A (b) F (c) C
(d) B (e) G

**37.** Who among the following was born immediately before the one who was born in Mumbai ?
(a) A (b) F (c) C
(d) B (e) G

**38.** Four of the five are alike in a certain way and hence form a group, who among the following does not belong to that group?
(a) A (b) F (c) C
(d) D (e) E

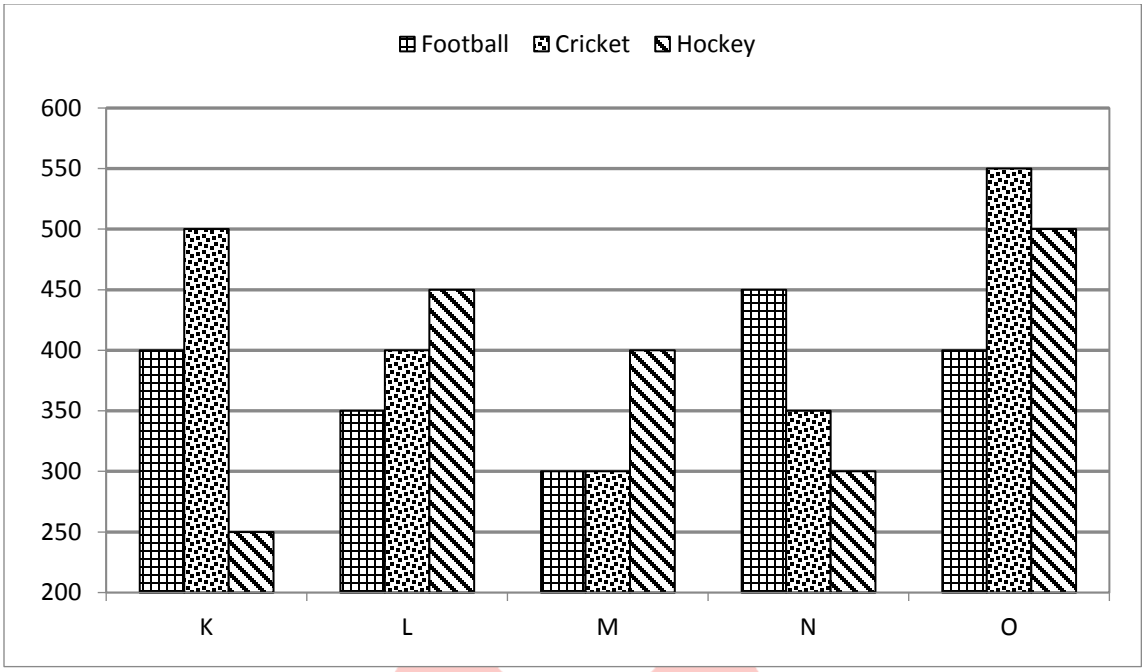
**39.** Which of the following combination is correct?
(a) A-Darjeeling-July
(b) F-Delhi-January
(c) C- august-cochin
(d) D- July-Mumbai
(e) none of these

**40.** Which of the following represents the month in which B was born?
(a) July (b) January (c) September
(d) July (e) none of these

## QUANTITATIVE APTITUDE

**Directions (41-45):** Study the following bar graph and answer the questions that follow.
Given below is the bar graph which shows the number of students playing three different games in five colleges in year 2014.

NOTE- one student plays only one sport




**41.** If $11\frac{1}{9}\%$ of students playing Hockey of college L are females then, number of males playing Hockey from same college is what percent of average number of students playing Hockey from college M & O ?
(a) $88\frac{8}{9}\%$ (b) $63\frac{1}{3}\%$ (c) $68\frac{8}{9}\%$
(d) $72\frac{2}{7}\%$ (e) $82\frac{2}{3}\%$

**42.** If $14\frac{2}{7}\%$ of student playing Cricket of college N left playing cricket and started playing Football in same college then find the ratio of number of student playing football of college N and M together to the number of student playing Cricket of college K and N together?
(a) 3 : 2 (b) 1 : 2 (c) 1 : 1
(d) 1 : 3 (e) 2 : 1

**43.** Average no. of students playing Hockey of college K, L and O is how much more than average number of students playing football of college K, L & M ?
(a) 120 (b) 50 (c) 80
(d) 40 (e) 100

**44.** Total number of student playing Cricket of college L and M together are what percent more/less than total number of student playing Hockey of college K and M together?
(a) $32\frac{1}{3}\%$ (b) $17\frac{9}{13}\%$ (c) $12\frac{3}{13}\%$
(d) $23\frac{2}{3}\%$ (e) $7\frac{9}{13}\%$

**45.** If total number of students in college K in year 2015 is increased by 20% percent with respect to year 2014 and the ratio of student playing Football, Cricket and Hockey becomes 5 : 2 : 3 respectively then find the average number of students playing football in same college K in year 2014 and 2015 ?
(a) 640 (b) 525 (c) 625
(d) 545 (e) 454

**Directions (46-50)**: Which number is wrong in the following number series.

**46.** 84, 97, 114, 133, 156, 187
(a) 114 (b) 156 (c) 84
(d) 187 (e) 97

**47.** 121, 170, 251, 372, 543, 766
(a) 766 (b) 170 (c) 121
(d) 251 (e) 543

**48.** 210, 70, 280, 56, 336, 49
(a) 49 (b) 210 (c) 56
(d) 70 (e) 280

**49.** 19, 140, 259, 376, 490, 604
(a) 490 (b) 259 (c) 376
(d) 604 (e) 19

**50.** 21, 23, 49, 151, 609, 3053
(a) 3053 (b) 23 (c) 21
(d) 609 (e) 151

**51.** Archit and Sandy enter into a business by investing in ratio 2 : 3 and the ratio of time period for which they invested is 4 : 5 respectively. If profit earned by Sandy is Rs. 420 more than the profit earned by Archit then find the total profit earned by Archit and Sandy both ?
(a) Rs. 1320 (b) Rs. 1380 (c) Rs. 1440
(d) Rs. 1280 (e) Rs. 1460

**52.** Tap X can fill a tank in 12 minutes and tap Y can fill the same tank is 15 minutes, another tap Z can empty the tank in 10 minutes. If tap X and tap Y are opened & after 6 minutes tap Z is also opened. Then find the total time taken to fill the tank ?
(a) 8 minutes (b) 4 minutes (c) 2 minutes
(d)12 minutes (e)6 minutes

**53.** The age of Abhishek is $\frac{3}{4}^{th}$ of the age of Ayush. The age of Ayush is 11 years more than the average age of his two sons whose total age is 50 years. Then find the difference of age of Abhishek and Ayush ?
(a) 14 years (b) 6 years (c) 12 years
(d) 8 years (e) 9 years

**54.** The radius of a cylinder & a sphere is same and ratio of height and radius of cylinder is 2 : 1.If the volume of sphere is 288 π $cm^3$ then find the volume of cylinder? (in $cm^3$)
(a) 438 π (b) 426 π (c) 420 π
(d) 432 π (e) 444 π

**55.** 8 men can complete a work in 4 days. 6 women can complete the same work in 6 days. 4 men & 6 women started the work & worked for only 2 days then, how many women are required to complete the remaining work in one day ?
(a) 20 women (b) 22 women (c) 15 women
(d) 10 women (e) 12 women

**Directions (56-60):** Find the approximate value of question marks (?) in following questions?

**56.** $\sqrt{63.82 \times 36.01} + 419.92 \div 5.84 - 540 = ? - 799.98$
(a) 426 (b) 378 (c) 526
(d) 328 (e) 448

**57.** 15.812% of 1600.125 + ? % of 1199.98 = 19.88 × 121.98
(a) 182 (b) 142 (c) 326
(d) 286 (e) 216

**58.** $(7.98)^3 + (14.88)^2 - (12.01)^2 = ? - 1219.812 - 1749.98$
(a) 3643 (b) 3425 (c) 3416
(d) 3563 (e) 3521

**59.** $19.825 \times \sqrt{?} = 63.91\%$ of $399.98 + 11.95\%$ of $1200.01$
(a) 300 (b) 500 (c) 420
(d) 350 (e) 400

**60.** $(?)^2 + 14.01\%$ of $1599.98 = 59.01 \times 12.025$
(a) 18 (b) 28 (c) 22
(d) 36 (e) 32

**Directions (61-65):** Data given below gives the information regarding four different products A, B, C and D (in units) sold by a company in year 2014 and 2015. Read the data carefully to answer the following questions.

**In 2014 –** Ratio of units sold of product A to product D is 2 : 1. Units sold of product C is 144% of units sold of product D. Average number of units sold of product A, C and D is 370 units. Total units sold of product A, B, C and D is 1340 units.

**In 2015 –** Average number of units sold of product C & D is 475 units. Units sold of product A is 75 units less than the units sold of product D. Units sold of product B is increased by 40% as compared to previous year and average units sold of product B & D is 411 units.

**61.** Find the percentage change in units sold of product A in 2015 as compared to previous year.
(a) 15% increase
(b) 15% decrease
(c) $17\frac{11}{17}$% increase
(d) $17\frac{11}{17}$% decrease
(e) None of the above.

**62.** Find the ratio of units sold of product A & D together in 2014 to units sold of product C & D together in 2015.
(a) 15 : 19 (b) 12 : 17 (c) 5 : 3
(d) 9 : 7 (e) 11 : 6

**63.** Find the difference in average units sold of product A, B, C and D in 2014 and average units sold of product A, B, C and D in 2015.
(a) 67.25 (b) 73.25 (c) 82.25
(d) 87.25 (e) 89.25.

**64.** In 2014, selling price of per unit of product D is Rs.12 and selling price of per unit of product B is Rs.15. Find total revenue generated from product B in 2014 is what percent of total revenue generated from product D in 2014?
(a) 125% (b) 145% (c) 135%
(d) 115% (e) 105%

**65.** Units sold of product B & C together in 2014 is what percent more than units sold of product – D in 2015?
(a) 12% (b) 30% (c) 24%
(d) 18% (e) 36%

**Directions (66-70):** Solve the following equations and mark the correct option given below.
(a) if $x > y$
(b) if $x \geq y$
(c) if $y > x$
(d) if $y \geq x$
(e) if $x = y$ or no relation can be established

**66.** **I.** $6x^2 + 7x + 2 = 0$
**II.** $3y^2 + 8y + 5 = 0$

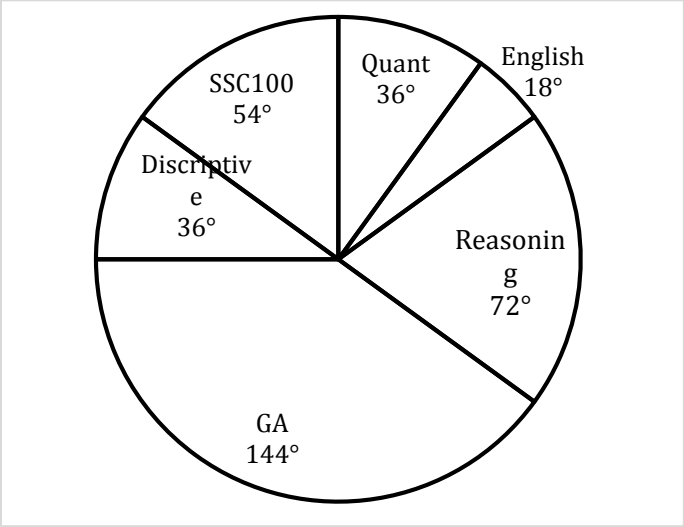
**67.** **I.** $7x^2 - 23x + 6 = 0$
**II.** $y^2 - 7y + 12 = 0$

**68.** **I.** $5x^2 + 13x - 6 = 0$
**II.** $2y^2 + 13y - 7 = 0$

**69.** **I.** $4x + 3y = 4$
**II.** $6x + 5y = 8$

**70.** **I.** $x^2 - 19x + 88 = 0$
**II.** $y^2 + y - 56 = 0$

**Direction (71-75):** Study the pie chart carefully & answer the following questions.
Pie-chart given below shows the number of books sold by Adda 247 in year 2016.




**Note:**
(i) Ratio of number of books sold by Adda 247 in year 2016 to 2017 is in ratio 4 : 5.
(ii) Percentage distribution is same in both the years.

**71.** Total number of Quant and Reasoning books sold together in year 2016 is what percent of the total number of SSC100 and descriptive books sold together in year 2017 ?
(a) 68% (b) 88% (c) 96%
(d) 82% (e) 72%

**72.** If total English books sold in year 2016 is 648. Then find the difference between the descriptive and SSC100 books sold in year 2017 ?
(a) 810 (b) 720 (c) 840
(d) 870 (e) 750

**73.** Find the ratio of total GA and Quant books sold together in year 2016 to the total Reasoning and English books sold together in year 2017 ?
(a) 7 : 5 (b) 5 : 3 (c) 8 : 3
(d) 8 : 5 (e) 5 : 8

**74.** If GA books sold in year 2016 is 576 then SSC100 books sold in year 2017 is what percent of the English books sold in year 2016 ?
(a) 375% (b) 450% (c) 425%
(d) 350% (e) 250%

**75.** If reasoning books sold in year 2017 is 360, then find the average number of descriptive and GA books sold in year 2017 ?
(a) 420 (b) 475 (c) 380
(d) 360 (e) 450

**76.** An amount is invested at S.I. for three years at rate of 5% and S.I. received on that amount is Rs. 180. If the same amount is invested for two years at 10% C.I. for first year & R% C.I. for 2nd year & total C.I. received in two years is Rs. 318 then find value of R ?
(a) 15% (b) 12% (c) 22%
(d) 18% (e) 25%

**77.** Veer mark up the price of cycle by 20% and if he decreases his discount percent from 15% to 10% than the profit of Veer is increased by Rs. 1800 then find how much profit/loss Veer would have if he gives a discount of 25% on the marked price ?
(a) Rs. 3200 (b) Rs. 2500 (c) Rs. 2700
(d) Rs. 4000 (e) Rs. 3000

**78.** A question is given to Satish, Arun and Ayush. Probability that Satish, Arun and Ayush can solve the question is $\frac{1}{3}$, $\frac{2}{5}$ and $\frac{1}{2}$. Find the probability that the question will be solved ?
(a) $\frac{3}{5}$ (b) $\frac{4}{5}$ (c) $\frac{1}{5}$
(d) $\frac{1}{3}$ (e) $\frac{2}{5}$

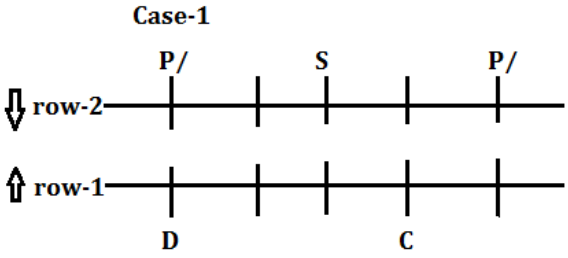
**79.** Abhishek can cover a certain distance in time 'T'. If he increases his speed by 'X' km/hr then the same distance is covered in 5 hours and if he decreases his speed by 'X' then the same distance is covered in 8 hours. Find the value of T?
(a) $4\frac{2}{13}$ hr (b) $5\frac{1}{7}$ hr (c) $6\frac{2}{13}$ hr
(d) $12\frac{1}{2}$ hr (e) $8\frac{3}{11}$ hr

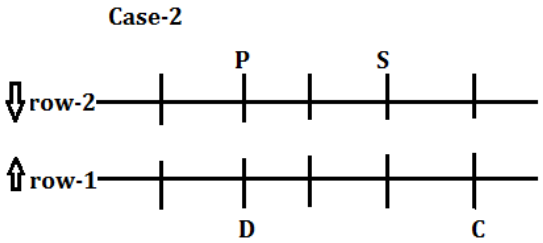
**80.** The present population of a city is 20,000. The ratio of female to male is given as 3 : 7. If population of female increases by 20% per year and population of male increases by 40% per year then find the ratio of male to female after two years in the city ?
(a) 343 : 108 (b) 102 : 343 (c) 341 : 108
(d) 108 : 343 (e) 343 : 102

# Mock 04 : Solutions

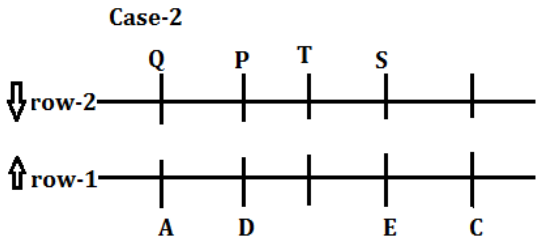
## REASONING ABILITY

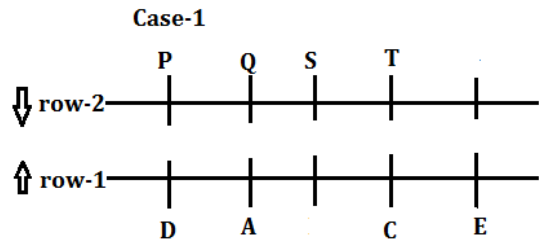
**Directions (1-5):**
D sits third to the left of C. Either D or C sit at extreme end. The one facing D sits second to the right of S. Only one person sit between S and P. So, there will be two possible cases----



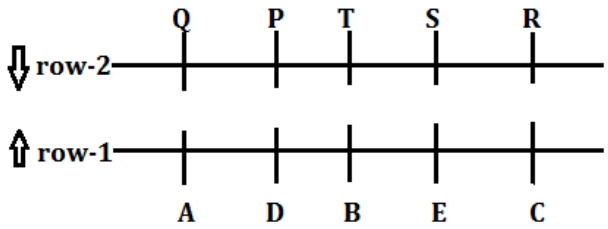




Two person sit between A and E, who is an immediate neighbor of C. P does not face E, therefore position of P is confirmed in case1 i.e. opposite to D. Q sits third to the right of the one who is sitting opposite to E, therefore Q sits opposite to A in both the the cases. T does not sit at extreme end of row---




Now it is given that S does not face B, therefore case 1 will be eliminated as there is no place left for B. The final arrangement is:




**1. (b)** **2. (d)** **3. (d)**
**4. (e)** **5. (b)**

**Directions (6-10):**

| Word | Code |
|---|---|
| key | fo |
| room | lo |
| lock/flat | ka/ra |
| Is | nk |
| floor/home | sk/nd |
| house | da |

**6. (a)** **7. (b)** **8. (c)**

**9. (d)** **10. (d)**

**Directions (11-15):**

**11. (a);** C>B (True), E<B (False)

**12. (c);** G>T (False), G=T (False)

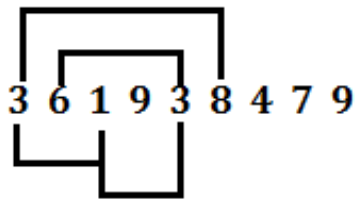
**13. (b);** T>O (False), V<O (True)

**14. (a);** A<D (True), F≤B (False)

**15. (d);** N<P (False), K<O (False)

**16. (b);** BK

**17. (d);**




**18. (a);** THIS, HIST, SHIT, HITS

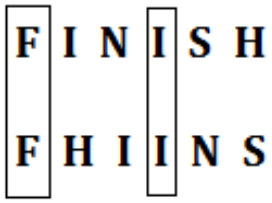
**19. (c);**

6 5 9 3 4 2 7

8 4 8 2 6 4 6

4, 6, 8 are the numbers which appear twice.

**20. (b);**




**Directions (21-25):**

Four boxes are placed between C and E and neither of them is on top or bottom of the stack. There are two boxes between C and H. So from this there are two possible cases----

Case-1 Case-2

| Box |
|---|
| |
| E |
| |
| H |
| |
| |
| C |
| |

| Box |
|---|
| |
| C |
| |
| |
| H |
| |
| E |
| |

There are as many boxes between A and E as between A and F. D is not placed just below or just above E. G is not placed just below or just above H. So, B is placed immediately above H in case1 and immediately below H in case2.

**Case-1 Case-2**

| Box | Box |
|---|---|
| G | F |
| E | C |
| B | D |
| H | A |
| A | H |
| D | B |
| C | E |
| F | G |

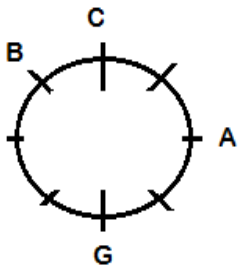
Now, it is given that the number of boxes places above H is more than that placed below H. Therefore, **case 1** will be eliminated. The final arrangement:

**21. (c)** **22. (b)** **23. (d)**

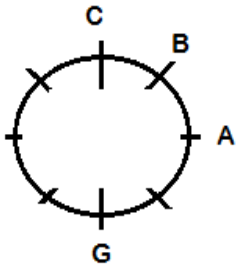
**24. (a)** **25. (e)**

**Directions (26-30):**

A sits 2nd to the left of C, who faces G. Two persons sit between G and B, who is a male.

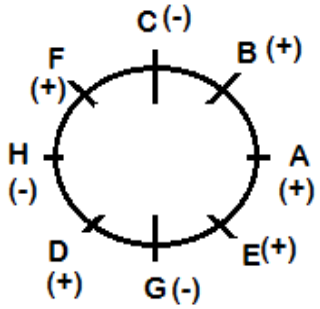



CASE1




CASE2

D is 2nd right to F, none of them is neighbor of A and none of them is female. Both neighbors of A are male. H is a female facing a male, so H cannot sit next to A. There are minimum 3 females in the group. So, C and G are females. The final arrangement is:




**26. (d)** **27. (a)** **28. (c)**

**29. (c)** **30. (c)**

**Directions (31-35):**

**31. (a);**


For I- From the venn diagram it is clear that some Bhopal is Mumbai and no Mumbai is Delhi . So, some Bhopal which is Mumbai will not be Delhi . Hence, conclusion I can be concluded.

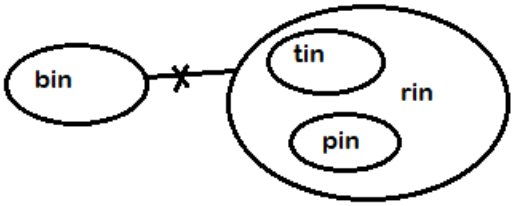
For II- Since some part of Bhopal is definitely Mumbai ,So, possibility case will hold true. Therefore, we can conclude that All Bhopal being Mumbai is a possibility.

**32. (c);**


For I- From the venn diagram it is clear that some water is definitely air, So, possibility case will not hold true. Therefore, we cannot conclude that some water being air is a possibility.

For II- From the venn diagram some water is earth. Therefore, conclusion II can be concluded.

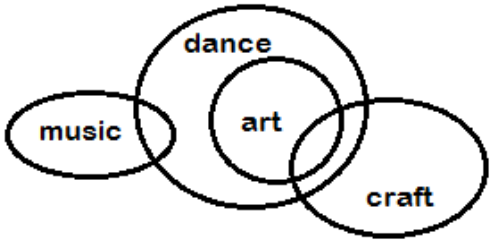
**33. (d);**




For I- From the venn diagram it is clear all tin is rin and no rin is bin. Therefore, we can conclude that no tin are bin.

For II- Since there is no direct relation between the elements tin and pin. Therefore, we cannot conclude that some tin are pin.

**34. (b);**




For I- Since there is no direct relation between the elements music and craft. Therefore, we cannot conclude that some music are craft.

For II- Since there is no direct relation between the elements music and craft. Therefore, we cannot conclude that some music are craft.

Since the elements are same and some and no case is mentioned. Therefore, either and or will be concluded.

**35. (e);**


For I- Since there is no direct relation between the elements pencil and sharp. Therefore, we cannot conclude that some pencil is sharp.

For II- Since there is no direct relation between the elements pen and sharp. Therefore, we cannot conclude that some sharp are not pen.

**Directions (36-40):**

F was born in Kolkata in a month having less than 31 days. Two persons were born between F and B. Three persons were born between A and E, who was born after F. D was born before C, who was born in cochin. D was born after G, who was born in Mumbai.

**CASE1**

| Month | Person | Place |
|---|---|---|
| January | G | Mumbai |
| February | F | Kolkata |
| April | A | |
| July | D | |
| August | B | |
| September | C | Cochin |
| December | E | |

**CASE-2**

| Month | Person | Place |
|---|---|---|
| January | A | |
| February | G | Mumbai |
| April | F | Kolkata |
| July | D | |
| August | E | |
| September | B | |
| December | C | Cochin |

Neither D nor E born in Delhi or Darjeeling. B was not born in Delhi, So A was born is Delhi and B was born in Darjeeling in case1 and case 2. The one born in Bhopal was born in the month having 31 days. The one who was born in Bhopal was born immediately before the one born in Chennai. So, case1 gets eliminated as there is no place for the ones born in Bhopal and Chennai according to this condition. The final arrangement is:

| Month | Person | Place |
|---|---|---|
| January | A | Delhi |
| February | G | Mumbai |
| April | F | Kolkata |
| July | D | Bhopal |
| August | E | Chennai |
| September | B | Darjeeling |
| December | C | Cochin |

**36. (b)** **37. (a)** **38. (b)**

**39. (e)** **40. (c)**

## QUANTITATIVE APTITUDE

**41. (a);** No. of male student playing Hockey of college L
$= 450 \times \frac{8}{9} = 400$
Average no. of student playing Hockey of college M & O $= \frac{400+500}{2} = 450$
Required percentage $= \frac{400}{450} \times 100 = 88\frac{8}{9}\%$

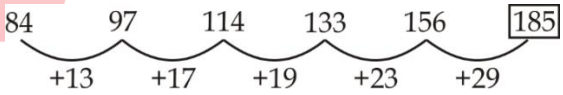
**42. (c);** Student who left playing Cricket of college N
$= 350 \times \frac{1}{7} = 50$
Total student playing Football of college N
$= 450 + 50 = 500$
Required ratio $= \frac{500+300}{500+300} = 1:1$

**43. (b);** Average no. of student playing Hockey of college K, L and O
$= \frac{(250+450+500)}{3} = 400$
Average no. of student playing Football of college K, L and M $= \frac{400+350+300}{3} = 350$
Required difference $= 400 - 350 = 50$

**44. (e);** Total no. of student playing Cricket of college L and M together
$= 400 + 300 = 700$
Total no. of student playing Hockey of college K and M together $= 250 + 400 = 650$
Required percentage $= \frac{700-650}{650} \times 100 = 7\frac{9}{13}\%$

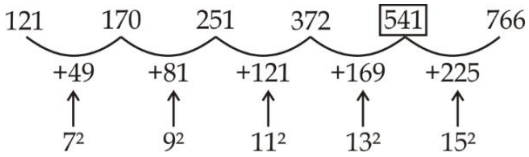
**45. (d);** Total student in college K in 2014 $= 400 + 500 + 250 = 1150$
Total student in college K in 2015
$= 1150 \times \frac{120}{100} = 1380$
Student playing Football of college K in 2015
$= 1380 \times \frac{5}{10} = 690$
Required average $= \frac{400+690}{2} = \frac{1090}{2} = 545$

**46. (d);**



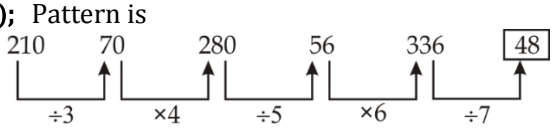

∴ 187 is wrong
Right no. $= 156 + 29 = 185$
13, 17, 19, 23, 29 are prime numbers

**47. (e);** Pattern is




Wrong No. = 543
Right no. $= 372 + 169 = 541$

**48. (a);** Pattern is




Wrong no. = 49
Right no. $= 336 \div 7 = 48$

**49. (a);** Pattern is


Wrong no = 490
Right no = 376 + 115 = 491

**50. (a);** Pattern is
$21 \times 1 + 2 = 23$
$23 \times 2 + 3 = 49$
$49 \times 3 + 4 = 151$
$151 \times 4 + 5 = 609$
$609 \times 5 + 6 = \boxed{3051}$
Wrong no = 3053
Right no = $609 \times 5 + 6 = 3051$

**51. (b);** Ratio of profit →Archit : Sandy
$2 \times 4 : 3 \times 5$
8 : 15
Let profit of Archit be 8x and Sandy be 15x.
ATQ,
$15x - 8x = 420$
$7x = 420$
$x = 60$
Required total = $60 \times 23$ = Rs. 1380

**52. (c);**

| Tap | Time | Tank Capacity |
|---|---|---|
| X | 12 (+5) | |
| Y | 15 (+4) | 60 unit |
| Z | 10 (−6) | |

ATQ,
Work done by X & Y in 6 minutes= $(5+4)\times6=54$ unit
Remaining work = 60 – 54 = 6 unit
Required time = $\frac{6}{(5+4-6)}$ = 2 minutes.

**53. (e);** Age of Ayush = $\frac{50}{2} + 11 = 36$ years
Age of Abhishek = $\frac{3}{4} \times 36 = 27$ years.
Required difference = 36 – 27 = 9 years.

**54. (d);** Volume of sphere = $\frac{4}{3}\pi R^3$ (R → Radius)
Volume of cylinder = $\pi r^2 h$ (r → radius of cylinder, h → height of cylinder)
R = r (given)
ATQ,
$\frac{4}{3}\pi R^3 = 288\pi \Rightarrow R^3 = 216 \Rightarrow R = 6cm = r$
Radius of cylinder=r=6cm
Height of cylinder=h=12cm
Volume of cylinder = $\pi r^2 h$
= $432\pi$ $cm^3$

**55. (c);** 1 men 1 day work = $\frac{1}{8\times4} = \frac{1}{32}$
1 women 1 day work = $\frac{1}{6\times6} = \frac{1}{36}$
Work done in 2 days by 4 men and & 6 women
$= 2\left(\frac{4}{32} + \frac{6}{36}\right) = \frac{3+4}{12} = \frac{7}{12}$
Remaining work = $1 - \frac{7}{12} = \frac{5}{12}$
No. of women required to complete the remaining work in 1 day.
$= 36 \times \frac{5}{12} = 15$ women

**56. (b);** $\sqrt{64 \times 36} + \frac{420}{6} - 540 = ? - 800$
$? = \sqrt{2304} + 70 - 540 + 800$
$? = 378$

**57. (a);** $\frac{16}{100} \times 1600 + \frac{?}{100} \times 1200 = 20 \times 122$
$256 + ? \times 12 = 2440$
$? = \frac{2184}{12} = 182$

**58. (d);** $(8)^3 + (15)^2 - (12)^2 = ? - 1220 - 1750$
$512 + 225 - 144 = ? - 2970$
$? = 3563$

**59. (e);** $20 \times \sqrt{?} = \frac{64}{100} \times 400 + \frac{12}{100} \times 1200$
$20 \times \sqrt{?} = 256 + 144$
$\sqrt{?} = \frac{400}{20} = 20$
$? = 400$

**60. (c);** $(?)^2 + \frac{14}{100} \times 1600 = 59 \times 12$
$(?)^2 + 224 = 708$
$(?)^2 = 484$
$? = 22$

**Solutions (61-65):**
In 2014:
Let units sold of product – A & D be '2x' & 'x' units respectively,
So, units sold of product – C = $x \times \frac{144}{100} = 1.44x$
ATQ,
$\frac{x + 1.44x + 2x}{3} = 370$
$\Rightarrow 4.44x = 1110$
$\Rightarrow x = 250$
So, units sold of product – A = 2x = 500 units
Units sold of product – C = 1.44x = 360 units
Units sold of product – D = x = 250 units
Units sold of product – B = 1340 – (500 + 360 + 250)
= 230 units
**In 2015:**
Units sold of product – B = $230 \times \frac{140}{100}$ = 322 units
Let units sold of product – D be 'x units'.
So,
$\frac{322 + x}{2} = 411$
x = 500 units
Let units sold of product – C be 'y units'.
So, $\frac{500 + y}{2} = 475$
y = 450 units
and units sold of product – A = 500 – 75
= 425 units.

| Products | 2014 | 2015 |
|---|---|---|
| A | 500 | 425 |
| B | 230 | 322 |
| C | 360 | 450 |
| D | 250 | 500 |

**61. (b);** Required % $= \frac{500-425}{500} \times 100 = 15\%$ decrease

**62. (a);** Required ratio $= \frac{500+250}{450+500}$
$= \frac{750}{950} = 15:19$

**63. (e);** Required difference $= \left(\frac{425+322+450+500}{4}\right) - \left(\frac{500+230+360+250}{4}\right) = 424.25 - 335 = 89.25$

**64. (d);** Total revenue generated from product – B in 2014 $= 230 \times 15 =$ Rs.3450
Total revenue generated from product – D in 2014 $= 250 \times 12 = 3000$ Rs.
Required % $= \frac{3450}{3000} \times 100 = 115\%$

**65. (d);** Units sold of product – B and C together in 2014 $= 230 + 360 = 590$ units
So, required % $= \frac{590-500}{500} \times 100$
$= \frac{90}{5}\% = 18\%$

**66. (a);** **I.** $6x^2 + 7x + 2 = 0$
$6x^2 + 3x + 4x + 2 = 0$
$3x(2x+1) + 2(2x+1) = 0$
$x = \frac{-1}{2}, \frac{-2}{3}$
**II.** $3y^2 + 8y + 5 = 0$
$3y^2 + 5y + 3y + 5 = 0$
$y(3y+5) + 1(3y+5) = 0$
$y = -1, \frac{-5}{3}$
$x > y$

**67. (d);** **I.** $7x^2 - 23x + 6 = 0$
$7x^2 - 21x - 2x + 6 = 0$
$7x(x-3) - 2(x-3) = 0$
$x = 3, \frac{2}{7}$
**II.** $y^2 - 7y + 12 = 0$
$y^2 - 3y - 4y + 12 = 0$
$y(y-3) - 4(y-3) = 0$
$y = 3, 4$
$y \geq x$

**68. (e);** **I.** $5x^2 + 13x - 6 = 0$
$5x^2 + 15x - 2x - 6 = 0$
$5x(x+3) - 2(x+3) = 0$
$x = \frac{2}{5}, -3$
**II.** $2y^2 + 13y - 7 = 0$
$2y^2 + 14y - y - 7 = 0$
$2y(y+7) - 1(y+7) = 0$
$y = -7, \frac{1}{2}$
No relation

**69. (c);** **I.** $4x + 3y = 4$ ...(i)
**II.** $6x + 5y = 8$ ...(ii)
Multiplying (i) by 5 and (ii) by 3 & subtracting (ii) from (i), we get
$x = -2$
put x=-2 in (i), we get
$y = 4$
$y > x$

**70. (a);** **I.** $x^2 - 19x + 88 = 0$
$x^2 - 11x - 8x + 88 = 0$
$x(x-11) - 8(x-11) = 0$
$x = 8, 11$
**II.** $y^2 + y - 56 = 0$
$y^2 + 8y - 7y - 56 = 0$
$y(y+8) - 7(y+8) = 0$
$y = 7, -8$
$x > y$

**71. (c);** Let total number of books sold in year 2016 is 4x and total number of books sold in year 2017 is 5x.
Required percentage $= \frac{4x \times \frac{108}{360}}{5x \times \frac{90}{360}} \times 100 = 96\%$

**72. (a);** Total books sold in year 2016 $= \frac{648}{18} \times 360$
$= 12{,}960$
Total books sold in year 2017 $= \frac{12{,}960}{4} \times 5$
$= 16{,}200$
Required difference $= \frac{54-36}{360} \times 16200$
$= 18 \times 45 = 810$

**73. (d);** Let total books sold in year 2016 be 4x & total books sold in year 2017 be 5x.
Required ratio $= \left(\frac{4x \times \frac{(144+36)}{360}}{5x \times \frac{(72+18)}{360}}\right) = 8:5$

**74. (a);** Total books sold in year 2016 $= \frac{576}{144} \times 360 = 1440$
Total books sold in year 2017 $= \frac{1440}{4} \times 5 = 1800$
Required percentage $= \frac{\frac{54}{360} \times 1800}{\frac{18}{360} \times 1440} \times 100 = 375\%$

**75. (e);** Total books sold in year 2017
$= \frac{360}{72} \times 360 = 1800$
Required average $= \frac{1}{2}\left[\frac{144+36}{360}\right] \times 1800 = 450$

**76. (a);** Let amount be Rs. P

S.I. $= \frac{P \times R \times T}{100}$ [R → rate, T → time]

$180 = \frac{P \times 5 \times 3}{100}$

P = Rs. 1200

We know,

$C.I. = P\left[\left(1+\frac{R_1}{100}\right)\left(1+\frac{R_2}{100}\right)-1\right]$

$R_1 = 10\%$

$R_2 = R$

$318 = 1200\left[\left(1+\frac{10}{100}\right)\left(1+\frac{R}{100}\right)-1\right]$

$\frac{318}{1200}+1 = \left[\left(\frac{11}{10}\right)\left(1+\frac{R}{100}\right)\right]$

$\frac{1518}{1200} = \frac{11}{10} \times \left(\frac{100+R}{100}\right)$

∴ R = 15%

**77. (e);** Let C.P. of cycle be 100 unit

Mark up price $= 100 \times \frac{120}{100} = 120$ unit

S.P. after 15% discount $= 120 \times \frac{85}{100} = 102$ unit

S.P. after 10% discount $= 120 \times \frac{90}{100} = 108$ unit

ATQ,

(108 – 102) unit → 1800

1 unit = Rs. 300

∴ C.P. of cycle = 300 × 100 = Rs. 30,000

Mark up price = 120 × 300 = Rs. 36,000

S.P. after 25% discount

= 36000 × 75/100 = Rs. 27,000

∴ Required loss = S.P. – C.P. = Rs. 3000

**78. (b);** Probability that no one can solve the given question

$= \frac{2}{3} \times \frac{3}{5} \times \frac{1}{2} = \frac{1}{5}$

Probability that the question will be solved = 1 – Probability that no one can solve the question

$= 1 - \frac{1}{5} = \frac{4}{5}$

**79. (c);** Let speed be S, distance be D & time be T

$S = \frac{D}{T}$

ATQ,

$S + X = \frac{D}{5}$ ...(i)

$S - X = \frac{D}{8}$ ...(ii)

On adding both the equations, we get

$2S = D\left[\frac{1}{5}+\frac{1}{8}\right]$

$2S = D\left[\frac{8+5}{40}\right]$

$T = \frac{D}{S} = \frac{80}{13} = 6\frac{2}{13}$ hours

**80. (a);** Female population $= 20{,}000 \times \frac{3}{10} = 6000$

Male population = 20,000 – 6000 = 14,000

Required ratio $= \frac{14000 \times \frac{140}{100} \times \frac{140}{100}}{6000 \times \frac{120}{100} \times \frac{120}{100}}$

= 343 : 108

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# Mock 05

# IBPS RRB PO Prelims

## REASONING ABILITY

**Directions (1-5):** Study the following information carefully and answer the questions given below:

Eight persons A, B, C, D, E, F, G, H are sitting around a square table such that persons sitting at the corners face inside and the one at the middle of the sides faces away from the centre. G sits 2nd to the right of E. B sits exactly between E and F. C sits 2nd to the right of the one who is 3rd right to E. A does not face towards the center. Two persons sit between G and D. No two persons are sitting adjacent to each other according to the English alphabet (i.e. A is not next to B, B is not next to A and C and so on..)

**1.** Who among the following sits 3rd right to the one who sits immediate left to G?
(a) C (b) A (c) F
(d) H (e) B

**2.** Who among the following sits opposite D?
(a) C (b) A (c) F
(d) H (e) B

**3.** Four of the five are alike in a certain way and hence form a group, which among the following does not belong to that group?
(a) C (b) A (c) F
(d) D (e) B

**4.** If in a certain way E is related to G, H is related to F, then Who among the following is related to B?
(a) C (b) A (c) F
(d) H (e) E

**5.** Who among the following are immediate neighbors of H?
(a) C, B (b) A,D (c) F,G
(d) D,E (e) none of these

**6.** Ranjeet leaves his home and goes straight 2 km, then turns right and goes 1 km. He turns left and goes 3 km and finally turns right and starts walking. If now he is moving in the north direction, then in which direction did he start his walking?
(a) East (b) West (c) North
(d) South (e) None of these

**7.** Saurav said pointing towards a lady in a picture, "That person is daughter of my mother's father's only son". How is the lady in the picture related to Saurav?
(a) Father's sister
(b) Mother's sister
(c) Cousin (maternal brother)
(d) Cousin (maternal sister)
(e) None of the above

**Directions (8-12):** Study the following information carefully and answer the questions given below:
In a certain code language
'left right centre' is written as 'yo vo na',
'ahead below behind' is written as 'sa ra la',
'above centre right' is written as 'ha vo na', and
'behind below above' is written as 'ha ra la'.

**8.** What is the code for 'left'?
(a) sa (b) ha (c) yo
(d) na (e) None of these

**9.** 'behind' will be written as?
(a) ra (b) ha (c) la
(d) Either a or c (e) None of these

**10.** What is the code for 'ahead'?
(a) sa (b) yo (c) la
(d) ha (e) Can't be determined

**11.** What does 'ha' stand for?
(a) behind (b) below (c) ahead
(d) above (e) None of these

**12.** What is the code for 'centre'?
(a) la (b) yo (c) sa
(d) ha (e) Can't be determined

**Directions (13-17):** Study the following information carefully and answer the questions given below:

even persons A, B, C, D, E, F, G are going to temple on different days of the week starting from Sunday but not necessarily in the same order. More than two persons go to temple between G and B. Three persons go between A and F, who goes after A. Even number of persons go to temple between E and B. E goes to temple immediately before C but none of them goes on Monday or Thursday. C goes before D but not immediate before. G goes before B.

**13.** If B is related to Saturday and in the same way A is related to Monday then following the same pattern G is related to?
(a) Wednesday (b) Saturday (c) Thursday
(d) Tuesday (e) None of these

**14.** On which of the following day A goes to temple?
(a) Tuesday (b) Wednesday (c) Friday
(d) Saturday (e) Sunday

**15.** Who among the following person goes to temple on Wednesday?
(a) A (b) B (c) C
(d) D (e) None of these

**16.** Who among the following persons are going to temple on Friday and Thursday respectively?
(a) C and A (b) F and B (c) G and D
(d) D and C (e) None of these

**17.** Who among the following goes to temple on the last day considering week started from Sunday?
(a) C (b) A (c) F
(d) D (e) B

**18.** Symbol % is situated to the north of symbol &, symbol $ is situated to the east of symbol %, symbol @ is situated to the left of symbol &, in which direction is symbol @ situated with respect to symbol $?
(a) West (b) South-East (c) South
(d) North-West (e) None of these

**19.** Binni points towards a person and says, "That person is the wife of only son-in-law of my father's only son's wife ". How is Binni related to that person?
(a) Aunt (b) Mother (c) Grandmother
(d) Wife (e) None of the above

**20.** How many such pairs of letters are there in the word "REGIONAL" each of which has as many letters between them in the word as in English alphabet?
(a) Four (b) One (c) Two
(d) More than four (e) None of these

**Directions (21-25):** In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.

Mark answer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21. Statements:** S>U=T≤K; V<T; W<U
**Conclusions:** I. S>V II. W<K

**22. Statements:** A≤B<D≥G; B=C>F
**Conclusions:** I. A≤F II.G<C

**23. Statements:** J=M≤O>T; M>P≥Q
**Conclusions:** I. Q<O II.T<P

**24. Statements:** K>L=M≥N<O=P≤Q
**Conclusions:** I.K>P II.N<Q

**25. Statements:** U<V≤W=X<Y; V>Z=T
**Conclusions:** I.T<Y II.T=Y

**Directions (26-30):** Read the following information carefully and answer the questions given below:

Ten people are sitting in two parallel rows containing five people each in such a way that there is an equal distance between adjacent persons. In row 1 – A, B, D, E and C are seated (but not necessarily in the same order) and all of them are facing south. In row 2 – Q, S, P, T and R are seated (but not necessarily in the same order) and all of them are facing North. Therefore, in the given seating arrangement each member seated in a row faces another member of the other row. E and B do not sit together. T sits at one of the extreme end. C sits next to the one who is sitting diagonally opposite to T. B sits to the right of E but none of them face S. One person sit between C and D. Two persons sit between P and R, who does not face D. A does not sit second to the right of one who faces T. S sits next to the one who is facing D.

**26.** What is the position of Q with respect to P?
(a) second to left (b) second to right
(c) third to right (d) third to left (e) immediate right

**27.** Who among the following sits at middle of one of the rows?
(a) C (b) D (c) R
(d) E (e) A

**28.** Four among the following five belongs to a group. Who does not belong to the group?
(a) B (b) E (c) P
(d) R (e) T

**29.** Who among the following sit second to the right of one who is facing B?
(a) P (b) Q (c) R
(d) S (e) T

**30.** Who among the following sits opposite to S?
(a) A (b) B (c) C
(d) D (e) E

**Directions (31-35):** Read the following information carefully and answer the questions given below:

even persons P, Q, R, S, T, U and V travel in three different cars viz, Honda, Maruti and Tata. Each of them likes different colors i.e. Yellow, Red, Black, Green, Blue, White and Pink (but not necessarily in the same order). At least two persons travel in each car. Q travel in Tata only with the one who likes red. Q does not like black or white. R likes green and travel with the one who likes Yellow. P and V travel in same car but none of them likes Yellow or white. S does not travel in Tata or with R. P does not like black. T does not like red. U does not travel with the one who likes blue. The one who likes white does not travel in Maruti.

**31.** Who among the following travels with S?
(a) P (b) Q (c) V
(d) T (e) Both (a) and (c);

**32** Who among the following likes Black color?
(a) P (b) S (c) Q
(d) V (e) T

**33.** P likes which color?
(a) Blue (b) Black (c) Pink
(d) White (e) Red

**34.** Who among the following travels with T?
(a) Q (b) R (c) S
(d) P (e) V

**35.** Who among the following travels with the one who likes Pink color?
(a) P (b) S (c) U
(d) R (e) T

**Directions (36-40):** Study the following arrangement carefully and answer the questions given below:

N 4 7 T U J K 3 % F @ © L N 5 P 1 8U $ E 2 D C 6 # 9 Z Q 8 Y ∗ M A

**36.** Which of the following is sixth to the left of the fifteenth from the left end of the given arrangement?
(a) 2 (b) # (c) %
(d) $ (e) None of these

**37.** How many such numbers are there in the given arrangement each of which is immediately preceded by a consonant but not immediately followed by a letter?
(a) One (b) None (c) three
(d) Two (e) Four

**38.** How many such symbols are there in the arrangement, each of which is immediately followed by a letter but not immediately preceded by a number?
(a) One (b) Three (c) None
(d) Two (e) More than three

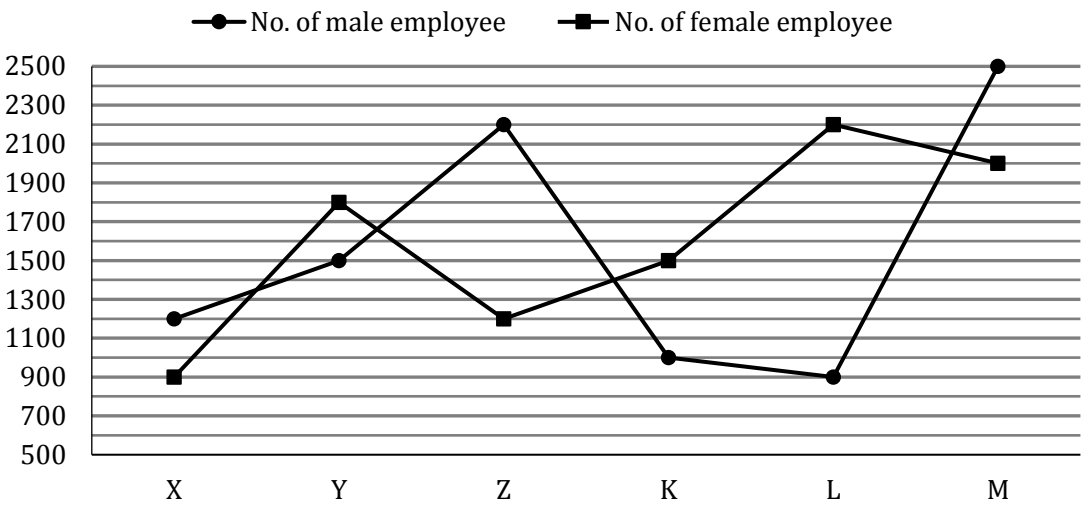
**39.** What should come in place of question mark (?) in the following series based on the above arrangement?
TU3 @©5 8U2 ?
(a) 69Q (b) #Z8 (c) 6#Q
(d) #9Z (e) None of these

**40.** Four of the following five are alike in a certain way based on their positions in the given arrangement and so from a group. Which is the one that does not belong to that group?
(a) DC6 (b) @©L (c) 9ZQ
(d) 5P1 (e) #MW

## QUANTITATIVE APTITUDE

**Directions (41-45):** Study the given line graph carefully and answer the following questions.

Given graph shows the total number of males and females working in six different companies in year 2016




**41.** Average no. of female employees in company X, Y and K are how much more/less than average no. of male employees in company X, Y and L?
(a) 350 (b) 400 (c) 200
(d) 300 (e) 250

**42.** No. of female employees in company L is what percent of the total no. of employees in company K and L together?
(a) $48\frac{1}{3}\%$ (b) $28\frac{2}{7}\%$ (c) $31\frac{2}{3}\%$
(d) $39\frac{2}{7}\%$ (e) $45\frac{1}{7}\%$

**43.** If the no. of male employees in company Y and Z are increased by 10% and 20% respectively in year 2017 as compared to 2016 and no. of female employees in company Y and Z are decreased by 30% & 40% respectively in 2017 as compared to 2016. Then find ratio of total no. of employees in company Y to company Z in year 2017 ?
(a) 97 : 112 (b) 91 : 112 (c) 113 : 83
(d) 112 : 97 (e) 83 : 113

**44.** If 25% of the female employees in company L are illiterate and ratio of male literate to (male)illiterate in same company is 4 : 5 then find total illiterate employees in company L is what percent of the total employees of company K?
(a) 48% (b) 52% (c) 32%
(d) 36% (e) 42%

**45.** If there is another company A in which no. of male employees are 40% of the total employees in company M and female employees are half of the total employees in company X then find total employees in company A?
(a) 2250 (b) 2850 (c) 3250
(d) 3600 (e) 2640

**46.** A truck covers a certain distance at certain speed. If speed is 4 km/hr more than the original speed it would take 4 hour less to cover the same distance and if speed is 6 km/hr less than original speed it would take 8 hour more than the normal time. Find distance covered by truck? (in km)
(a) 1520 (b) 1360 (c) 1480
(d) 1440 (e) 1260

**47.** Abhi swims from point A against current for 6 min and then swims backward in the direction of current for next 6 min. & comes to another point B. If distance between A to B is 200m then find speed of current (in km/hr)?
(a) 2 (b) 1 (c) 3
(d) 4 (e) 0.5

**48.** Sum of 4 consecutive even numbers are 94 more than the sum of 3 consecutive odd numbers and if average of largest even no. & smallest odd no. is 42. Then find the 2nd lowest even no.?
(a) 32 (b) 42 (c) 36
(d) 46 (e) 48

**49.** Rahul and Ayush together can complete a work in half the time of Veer, while Ayush and Veer together can complete the same work in $\frac{1}{3}$ rd time of Rahul. If they together complete the work in 30 days then in how many days Rahul alone can complete the work?
(a) 120 days (b) 150 days (c) 90 days
(d) 100 days (e) 140 days

**50.** Tap A can empty a tank in 6 hours and another tap B can fill the tank at the rate of 15 l/min. If both the taps are opened the tank can be emptied in 10 hours then find the capacity of tank?
(a) 13,200 $\ell$ (b) 14,500$\ell$ (c) 13,700$\ell$
(d) 13,500$\ell$ (e) 12,240$\ell$

**Direction (51 – 55):** What will come in the place of question (?) mark in the following number series:

**51.** 180, 185, 193, 207, 233, ?
(a) 268 (b) 278 (c) 273
(d) 295 (e) 283

**52.** 160, 82, 84, 128, ?, 647
(a) 342 (b) 314 (c) 292
(d) 258 (e) 284

**53.** ?, 334, 166, 82, 40, 19
(a) 570 (b) 558 (c) 670
(d) 640 (e) 645

**54.** 1250, 961, 736, 567, 446, ?
(a) 365 (b) 385 (c) 280
(d) 340 (e) 345

**55.** 120, 120, 126, 146, 188, ?
(a) 240 (b) 220 (c) 225
(d) 275 (e) 260

**56.** A boat travels in upstream. If the speed of boat in upstream in decreased by 40% then it is equal to the speed of current and speed of boat in still water is given as 240 km/hr. Then find upstream speed of boat? (in km/hr).
(a) 120 (b) 180 (c) 150
(d) 210 (e) 125

**57.** The age of father is 4 times the age of his son. 5 years ago the age of son was $\frac{1}{5}$ times of his father age. Find the present age of son.
(a) 20 yrs (b) 30 yrs (c) 28 yrs
(d) 25 yrs (e) 32 yrs

**58.** Abhishek invested some amount for 3 yrs at rate of $16\frac{2}{3}$% per annum at CI. The difference of CI obtained only on 3rd year and C.I. obtained only on second year is Rs 210. Find the amount invested by Abhishek?
(a) Rs 6,220 (b) Rs 6,480 (c) Rs 8,420
(d) Rs 7,420 (e) Rs 8,240

**59.** A dishonest shopkeeper makes a cheating of 10% at the time of buying the items & 10% of at the time of selling the items. Find the overall profit percentage if he professes to sell goods at cost price?
(a) 20% (b) $21\frac{2}{9}$% (c) $22\frac{1}{9}$%
(d) $22\frac{2}{9}$% (e) 25%

**60.** Perimeter of rectangle is equal to the perimeter of square whose area is 400 $cm^2$ and length of rectangle is 40% more than the side of a square then find the area of rectangle?
(a) 248 $cm^2$ (b) 420 $cm^2$ (c) 356 $cm^2$
(d) 336 $cm^2$ (e) 348 $cm^2$

**Directions (61-65):** In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

**61. I.** $x^2 - 13x + 40 = 0$ **II.** $2y^2 - y - 15 = 0$

**62. I.** $5x^2 + 17x + 6 = 0$ **II.** $2y^2 + 11y + 12 = 0$

**63. I.** $7x^2 - 19x + 10 = 0$ **II.** $8y^2 + 2y - 3 = 0$

**64. I.** $3x^2 - 25x + 8 = 0$ **II.** $4y^2 - 13y + 3 = 0$

**65. I.** $3x + 4y = 2$ **II.** $2x - y = 5$

**Directions (66-70):** Study the table carefully & answer the questions.

Table given below shows the number of six different items manufactured by any factory and table also shows the percentage of each item sold.

| Items | No. of Items manufactured | Percentage of items sold |
|---|---|---|
| A | 1200 | 25% |
| B | 800 | 18% |
| C | 1500 | 32% |
| D | 2200 | 45% |
| E | 2500 | 48% |
| F | 1800 | 35% |

**66.** No. of items sold of type A and C together are what percent more or less than no. of items sold of type D & F together? (approximate)
(a) 68% (b) 64% (c) 52%
(d) 46% (e) 59%

**67.** If ratio of defective to non-defective item which are unsold of type B and type D is 3 : 5 and 5 : 6 respectively then find the difference of total defective and total non-defective items of these two types of item which are unsold?
(a) 312 (b) 274 (c) 247
(d) 284 (e) 242

**68.** What is the ratio of sold items of type C and E together to unsold items of type A and E together?
(a) 42 : 55 (b) 43 : 55 (c) 21 : 28
(d) 55 : 42 (e) 43 : 48

**69.** If the cost of each item sold of type C is Rs 200 and that of type D is Rs 300 then find the average of total selling cost of items of type C and type D?
(a) Rs 1,92,400 (b) Rs 1,96,800 (c) Rs 1,82,400
(d) Rs 172,400 (e) Rs 1,96,500

**70.** If 40% of total items of type F are defective then the remaining items of type F sold is what percent of the average of unsold items of type A and E?
(a) $91\frac{2}{7}\%$ (b) $98\frac{2}{11}\%$ (c) $72\frac{2}{3}\%$
(d) $83\frac{2}{11}$ (e) $78\frac{2}{9}\%$

**Direction (71 – 75):** Read the data carefully and answer the questions.

There are two multiplexes **A** & **B**, and both have four different types of seats i.e. **Gold**, **Platinum**, **Silver** & **General**.

In multiplex A, there are total 400 seats. Multiplex B has 40% more seats than multiplex A and 20% of the seats in A are Gold seats. One-fourth of the total number of seats in A are silver seats. 25% of the total seats in A are Platinum seats. Total number of silver seats in both multiplexes together are 240. 45% of the total number of seats in B is Platinum seats and ratio of General seats to Gold seats in B is 3:4.

**71.** What is the ratio of total number of Gold seats to total number of General seats in both the multiplex?
(a) 8:15 (b) 13:15 (c) 11:12
(d) 22:25 (e) 5:9

**72.** Number of General seats in multiplex A is what percent of number of total Gold seats in same multiplex?
(a) 75% (b) 66.66% (c) 100%
(d) 160% (e) 150%

**73.** Total number of Gold and Platinum seats in multiplex A are what percent more or less than the total number of General seats in both the multiplex?
(a) 2.5% (b) 6.25% (c) 7.5%
(d) 8% (e) 10%

**74.** Find the average number of Platinum & Silver seats in both the multiplex?
(a) 306 (b) 264 (c) 284
(d) 296 (e) 218

**75.** The difference between total Gold and total Platinum seats in both the multiplex is what percent of total seats in both the multiplex?
(a) $18\frac{1}{3}\%$ (b) $17\frac{1}{2}\%$ (c) $16\frac{2}{3}\%$
(d) $22\frac{1}{2}\%$ (e) 20%

**76.** A card is drawn from a deck of 52 cards at random, Find the probability that it is neither club nor king ?
(a) $\frac{9}{11}$ (b) $\frac{7}{11}$ (c) $\frac{4}{13}$
(d) $\frac{7}{13}$ (e) $\frac{9}{13}$

**77.** Find the number of 3-digit numbers such that they have atleast one digit which is 4 (with repetition)
(a) 332 (b) 252 (c) 298
(d) 216 (e) 328

**78.** Three persons P, Q and R started a business by investing in the ratio of $\frac{2}{3} : \frac{1}{2} : \frac{3}{4}$. After 5 months, Q increases his investment by $\frac{2}{3}$rd of his initial amount. If after 12 months, the difference of the profit shares of P and R is Rs. 1,350 then find the profit share of Q.
(a) Rs. 11,500 (b) Rs. 11,200 (c) Rs. 12,250
(d) Rs. 11,250 (e) Rs. 10,250

**79.** In a mixture of alcohol and water, the proportion of alcohol by weight is 60%. If from the 80 gm mixture, 20 gm of mixture is taken out and 6 gm of pure water is added to the mixture then find the ratio of alcohol and water in the new mixture.
(a) 5 : 6 (b) 6 : 5 (c) 4 : 3
(d) 3 : 2 (e) 7 : 6

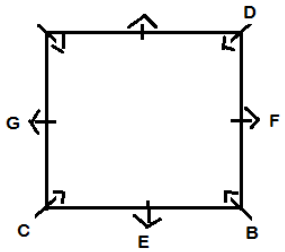
**80.** A person buys some articles. He sold 40% of articles at 20% profit and remaining at $33\frac{1}{3}$% profit. If percent profit is calculated on selling price then what is the ratio of selling price of all the articles sold at 20% profit to the all the articles sold at $33\frac{1}{3}$% profit.
(a) 4 : 5 (b) 7 : 9 (c) 5 : 1
(d) 2 : 3 (e) 5 : 9

# Mock 05 : Solutions

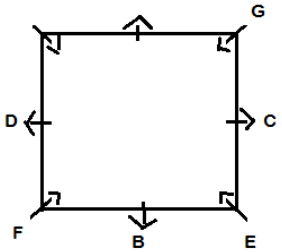
## REASONING ABILITY

**Directions (1-5):**

G sits 2nd to the right of E. B sits exactly between E and F. C sits 2nd to the right of the one who is 3rd right to E. Two persons sit between G and D. We get two cases:

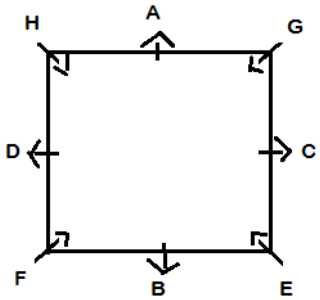


CASE1



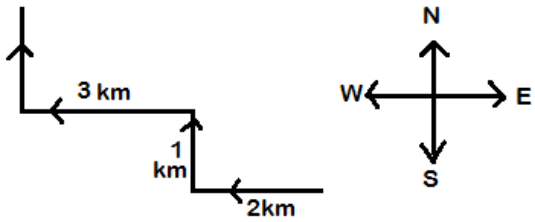
CASE2

A does not face towards the center. No two persons are sitting adjacent to each other according to the English alphabet. Therefore, H does not sit next to G. So, case1 gets eliminated. The final arrangement is:

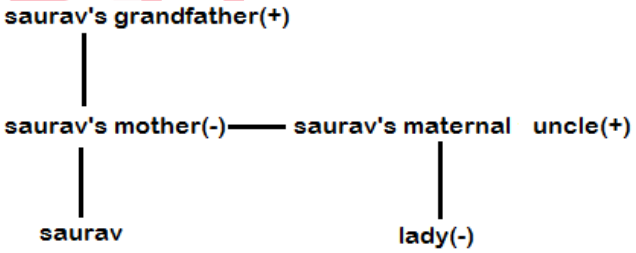



**1.** (c); **2.** (a); **3.** (c);
**4.** (a); **5.** (b);

**6.** (b);




**7.** (d);




**Directions (8-12):**

| Word | Code |
|---|---|
| Right/centre | vo/na |
| Left | yo |
| Below/behind | ra/la |
| Ahead | sa |
| above | ha |

**8.** (c); **9.** (d); **10.** (a);
**11.** (d); **12.** (e);

**Direction (13-17):**

Three persons go between A and F, who goes after A. E goes to temple immediately before C but none of them goes on Monday or Thursday. C goes before D but not immediate before.

| Days | Case1 | Case2 | Case3 |
|---|---|---|---|
| Sunday | A | A | |
| Monday | | | A |
| Tuesday | E | E | E |
| Wednesday | C | C | C |
| Thursday | F | F | |
| Friday | D | | F |
| Saturday | | D | D |

More than 2 persons go to temple between G and B. G goes before B.

| Days | Case1 | Case2 | Case3 |
|---|---|---|---|
| Sunday | A | A | G |
| Monday | G | G | A |
| Tuesday | E | E | E |
| Wednesday | C | C | C |
| Thursday | F | F | B |
| Friday | D | B | F |
| Saturday | B | D | D |

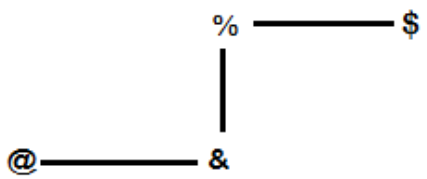
Even number of persons go to temple between E and B, So case1 and 3 gets eliminated. The final arrangement is:

| Days | Person |
|---|---|
| Sunday | A |
| Monday | G |
| Tuesday | E |
| Wednesday | C |
| Thursday | F |
| Friday | B |
| Saturday | D |

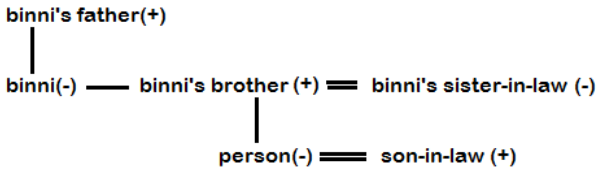
**13. (d);** **14. (e);** **15. (c);**

**16. (e);** **17. (d);**

**18. (e);**




**19. (a);**




**20. (a);**


**Directions (21-25)**

**21. (e);** S>V (True), W<K (True)

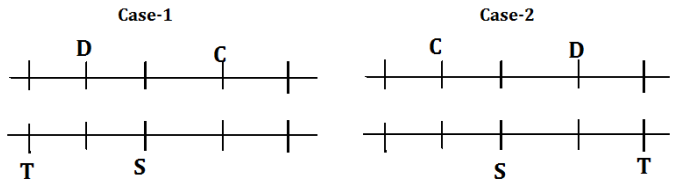
**22. (d);** A≤F (False), G<C (False);

**23. (a);** Q<O (True), T<P (False);

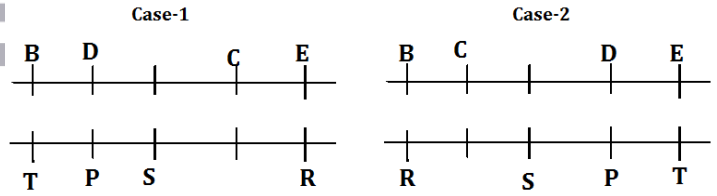
**24. (b);** K>P (False), N<Q (True)

**25. (a);** T<Y (True), T=Y (False)

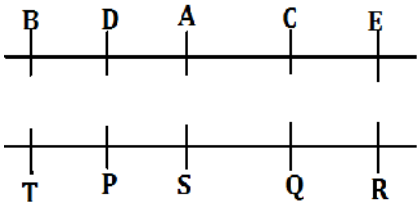
**Directions (26-30):** T sits at one of the extreme end. C sits next to the one who is sitting diagonally opposite to T. One person sit between C and D. S sits next to the one who is facing D. Therefore position of S is confirmed at middle of the row. So, there are two possible cases---




Two persons sit between P and R, who does not face D. Therefore R sits at extreme end in both the cases. B sits to the right of E but none of them face S. E and B do not sit together.




A does not sit second to the right of one who faces T. By this condition case 2 will be eliminated and we go the final arrangement----




**26. (b);** **27. (e);** **28. (c);**

**29. (d);** **30. (a);**

**Directions (31-35):** travel in Tata only with the one who likes red. R likes green and travel with the one who likes Yellow. So, there are two possible cases. Either R travel in Maruti or in Honda. S does not travel in Tata or with R---

**Case1**

| CARS | Persons(Colors) |
|---|---|
| **Maruti** | R(green), (yellow) |
| **Honda** | S |
| **Tata** | Q, (red) |

**Case2**

| CARS | Persons(Colors) |
|---|---|
| **Maruti** | S |
| **Honda** | R(green), (yellow) |
| **Tata** | Q, (red) |

| CARS | Persons(Colors) |
|---|---|
| **Maruti** | R(green), T (yellow) |
| **Honda** | P(blue), S(white), V(black) |
| **Tata** | Q(pink), U(red) |

P and V travel in same car but none of them likes Yellow or white. Therefore P and V are travelling with S. P does not like black. Q does not like black or white. T does not like red. So, T is travelling with R. U does not travel with the one who likes blue. So, Q likes pink. The one who likes white does not travel in Maruti, by this condition case 2 will be eliminated and we got the final arrangement as.

**31. (e); 32. (d); 33. (a);**
**34. (b); 35. (c);**

**Directions(36-40):**

**36. (c);**

**37. (e);** N47, K3%, C6#, P18

**38. (b);** U$E, @©L, Y*M

**39. (c);**

**40. (e) ;**

## QUANTITATIVE APTITUDE

**41. (c);** Average no. of female employees in company X, Y & K
$= \frac{900+1800+1500}{3} = \frac{4200}{3} = 1400$
Average no. of male employees in company X, Y & L
$= \frac{1200+1500+900}{3} = \frac{3600}{3} = 1200$
Required difference = 1400 – 1200 = 200

**42. (d);** No. of female employees in company L = 2200
Total no. of employees in company K & L together
= (1000 + 1500) + (900+ 2200) = 5600
Required percentage $= \frac{2200}{5600} \times 100 = 39\frac{2}{7}\%$

**43. (a);** No. of male employees in company Y in 2017
$= 1500 \times \frac{110}{100} = 1650$
No. of male employees in company Z in 2017
$= 2200 \times \frac{120}{100} = 2640$
No. of female employees in company Y in 2017
$= 1800 \times \frac{70}{100} = 1260$
No. of female employees in company Z in 2017
$= 1200 \times \frac{60}{100} = 720$
Required ratio $= \frac{1650+1260}{2640+720} = \frac{2910}{3360} = 97 : 112$

**44. (e);** Illiterate female employees of company L
$= 2200 \times \frac{25}{100} = 550$
Illiterate male employees of company L $= 900 \times \frac{5}{9} = 500$
Total illiterate employees of company L = 550 + 500 = 1050
Required percentage $= \frac{1050}{2500} \times 100 = 42\%$

**45. (b);** No. of male employees in company A $= 4500 \times \frac{40}{100} = 1800$
No. of female employees in company A $= (1200 + 900) \times \frac{1}{2} = 1050$
Required total = 1800 + 1050 = 2850

**46. (d);** We know
Distance(d) = Speed (S) × time (t)
Atq,
(S + 4) (t – 4) = St
(S – 6) (t+ 8) = st
-4S + 4t = 16 ...(i)
8S – 6t = 48
+4S – 3t = 24 ..(ii)
Solving (i) & (ii)
T = 40 hours, S = 36 km/hour
Distance = 40 × 36 = 1440 km

**47. (b);** Let speed of Abhi in still water be x km/hr & speed of current be y km/hr

B 200 m A P

Atq,
$(x - y) \times \frac{6}{60} + \frac{200}{1000} = (x + y) \times \frac{6}{60}$
$0.2 = \frac{1}{10}[(x + y) - (x - y)]$

$2 = 2y$

$y = 1$ km/hr

$\therefore$ speed of current = 1 km/hr

**48. (e);** Let 4 consecutive even no. are x, x + 2, x + 4 & x+ 6

& 3 consecutive odd no. are y -2, y, y + 2

Atq,

$4x + 12 - 3y = 94$

$4x - 3y = 82$ ...(i)

$\frac{x+6+y-2}{2} = 42$

$x + y = 84 - 4$

$x + y = 80$ ...(ii)

multiplying .(ii) by 3 & solving with ...(i)

$x = 46$

$\therefore$ Second lowest even no. = 48

**49. (a);** Let efficiency of Rahul, Ayush & veer be x, y & z resp.

And we know time is inversely proportional to efficiency

$\therefore \frac{x+y}{z} = \frac{2}{1} = \frac{8}{4}$

$\frac{y+z}{x} = \frac{3}{1} = \frac{9}{3}$

Therefore ratio of efficiency

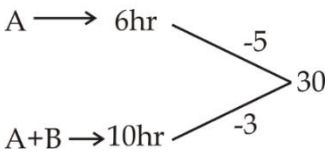
x : y : z = 3 : 5 : 4

total work = 12 × 30 = 360 unit

Rahul alone can complete the work $= \frac{360}{3} = 120$ days

**50. (d);**

Time Efficiency

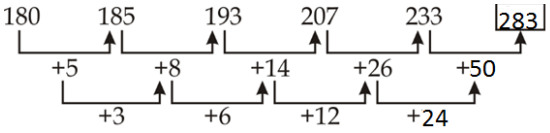



$\therefore$ Efficiency of B = 2

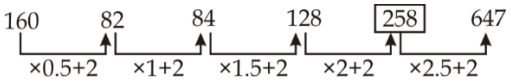
$\therefore$ tap B can fill the tank $= \frac{30}{2} = 15$ hrs

Capacity of tank = 15 × 60 × 15 = 13500 litre

**51. (e);**




**52. (d);**




**53. (c);**

Pattern is

$\frac{670}{2} - 1 = 334$

$\frac{334}{2} - 1 = 166$

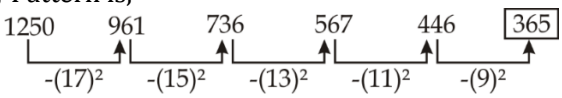
$\frac{166}{2} - 1 = 82$

$\frac{82}{2} - 1 = 40$

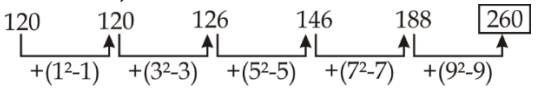
$\frac{40}{2} - 1 = 19$

? = 670

**54. (a);** Pattern is,




**55. (e);** Pattern is,




**56. (c);** Let speed of current be x km/hr.

ATQ,

$(240\text{-}x) \times \frac{60}{100} = x$

$144\text{-}0.6x = x$

$1.6x = 144$

$x = 90$

peed in upstream=250-90=150km/hr

**57. (a);** Let the age of his son be x yrs

Therefore age of father = 4x yrs

Atq,

$(x - 5) = (4x - 5) \times \frac{1}{5}$

5x - 25 = 4x - 5

x = 20 yrs

$\therefore$ age of son = 20 yrs

**58. (b);** Total CI for 3 yrs

$CI = P\left[\left(1 + \frac{50}{300}\right)^3 - 1\right]$

$= P\left[\frac{7}{6} \times \frac{7}{6} \times \frac{7}{6} - 1\right]$

$CI = P\left[\frac{343-216}{216}\right] = \frac{127}{216}P$

Total CI for 2 yrs

$CI = P\left[\left(1 + \frac{50}{300}\right)^2 - 1\right]$

$= P\left[\frac{49}{36} - 1\right] = \frac{13}{36}P$

CI only for 3rd year

$= \frac{127P}{216} - \frac{13P}{36} = \frac{49P}{216}$

CI only for 2nd year

$= \frac{13P}{36} - \frac{P}{6} = \frac{7P}{36}$

Atq,

$\frac{49P}{216} - \frac{7P}{36} = 210$

$\Rightarrow \frac{49P-42P}{216} = 210$

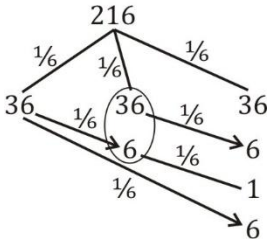
$P = 30 \times 216 = Rs\ 6{,}480$

**Alternative solution**

Alternate solutions

$16\frac{2}{3}\% = \frac{1}{6}$

Let the amount be $(6)^3$ = Rs. 216




Total CI in 2nd yr = Rs. 42

Total CI in 3rd yr = Rs. 49

ATQ,

$7 \rightarrow 210$

$1 \rightarrow \frac{210}{7} = 30$

$216 \rightarrow 216 \times 30$ = Rs. 6480

**59. (d);** Let CP of 100 gm be Rs 100

After cheating at time of buying

CP of 110 gm be Rs 100.

After cheating at time of selling

P of 90 gm be Rs 100

After equating 110 gm & 90 gm

Multiplying 110 gm by 9 & 90 gm by 11.

∴ CP of 990 gm be Rs 900

& SP of 990 gm be Rs 1100

$\therefore$ Profit $\% = \frac{200}{900} \times 100 = 22\frac{2}{9}\%$

**60. (d);** Let side of square be a cm.

$\therefore a^2 = 400\ cm^2$

$a = 20$ cm

Length of rectangle $(\ell) = 20 \times 1.4 = 28$ cm

ATQ,

$4 \times 20 = 2(\ell + b)$ [b → breadth of rectangle]

$80 = 2\ (28 + b)$;

$b = 12$ cm

$\therefore$ Area of rectangle $= 28 \times 12 = 336\ cm^2$

**61. (a);** **I.** $x^2 - 13x + 40 = 0$

$x^2 - 5x - 8x + 40 = 0$

$x\ (x - 5) - 8\ (x - 5) = 0$

$x = 5, 8$

**II.** $2y^2 - y - 15 = 0$

$2y^2 - 6y + 5y - 15 = 0$

$2y(y - 3) + 5\ (y - 3) = 0$

$y = 3, -5/2$

$x > y$

**62. (e);** **I.** $5x^2 + 17x + 6 = 0$

$5x^2 + 15x + 2x + 6 = 0$

$5x\ (x + 3) + 2(x + 3) = 0$

$x = -3, -\frac{2}{5}$

**II.** $2y^2 + 11y + 12 = 0$

$2y^2 + 8y + 3y + 12 = 0$

$2y\ (y + 4) + 3\ (y + 4) = 0$

$y = -4, -\frac{3}{2}$

No relation

**63. (a);** **I.** $7x^2 - 19x + 10 = 0$

$7x^2 - 14x - 5x + 10 = 0$

$7x\ (x - 2) - 5\ (x - 2) = 0$

$x = 2, \frac{5}{7}$

**II.** $8y^2 + 2y - 3 = 0$

$8y^2 + 6y - 4y - 3 = 0$

$2y\ (4y + 3) - 1\ (4y + 3) = 0$

$y = \frac{-3}{4}, \frac{1}{2}$

$x > y$

**64. (e);** **I.** $3x^2 - 25x + 8 = 0$

$3x^2 - 24x - x + 8 = 0$

$3x\ (x - 8) - 1\ (x - 8) = 0$

$x = 8, \frac{1}{3}$

**II.** $4y^2 - 13y + 3 = 0$

$4y^2 - 12y - y + 3 = 0$

$4y\ (y - 3) - 1\ (y - 3) = 0$

$y = 3, \frac{1}{4}$

No relation

**65. (a);** **I.** $3x + 4y = 2$ ..(i)

**II.** $2x - y = 5$ ..(ii)

Multiplying (ii) by 4 and solving

$x = 2, y = -1$

$x > y$

**66. (c);** No. of items sold of type A & C together

$= 1200 \times \frac{25}{100} + 1500 \times \frac{32}{100} = 300 + 480 = 780$

No. of items sold of type D & F together

$= 2200 \times \frac{45}{100} + 1800 \times \frac{35}{100} = 990 + 630 = 1620$

Required percentage $= \frac{1620-780}{1620} \times 100 \simeq 52\%$

**67. (b);** Defective items which are unsold of type B & D together

$= 800 \times \frac{82}{100} \times \frac{3}{8} + 2200 \times \frac{55}{100} \times \frac{5}{11}$

$= 246 + 550 = 796$

Non-defective items which are unsold of type B & D together

$= 800 \times \frac{82}{100} \times \frac{5}{8} + 2200 \times \frac{55}{100} \times \frac{6}{11}$

$= 410 + 660 = 1070$

Required difference = 1070-796=274

**68. (a);** old items of type C & E together
$= 1500 \times \frac{32}{100} + 2500 \times \frac{48}{100}$
$= 480 + 1200 = 1680$
Unsold items of type A & E together
$= 900 + 1300 = 2200$
Required ratio $= \frac{1680}{2200} = 42 : 55$

**69. (e);** Total cost $= 1500 \times \frac{32}{100} \times 200 + 2200 \times \frac{45}{100} \times 300$
$= 96000 + 297000 = 3{,}93{,}000$
Required average $= \frac{393000}{2} = Rs 1{,}96{,}500$

**70. (b);** Items of type F which are non-defective $= 1800 \times \frac{60}{100} = 1080$
Average items unsold of type A & E
$= \frac{1}{2}\left[1200 \times \frac{75}{100} + 2500 \times \frac{52}{100}\right]$
$= \frac{900+1300}{2} = 1100$
Required percentage $= \frac{1080}{1100} \times 100$
$= 98\frac{2}{11}\%$

**(71 – 75)**
Number of seats in A = 400
Number of seats in B $= 400 \times 1.4 = 560$
Number of Gold seats in A $= 400 \times \frac{20}{100} = 80$
Number of Silver seats in A $= 400 \times \frac{1}{4} = 100$
Number of Platinum seats in A $= 400 \times \frac{25}{100} = 100$
Number of General seats in A $= 400 - (80 + 100 + 100) = 120$
Number of Silver seats in B $= 240 - 100 = 140$
Number of Platinum seats in B $= 560 \times 0.45 = 252$
Number of General seats in B $= 168 \times \frac{3}{7} = 72$
Number of Gold seats in B $= 168 - 72 = 96$

| Multiplexes | Gold | Platinum | Silver | General | Total |
|---|---|---|---|---|---|
| A | 80 | 100 | 100 | 120 | 400 |
| B | 96 | 252 | 140 | 72 | 560 |
| Total | 176 | 352 | 240 | 192 | |

**71. (c);** Required ratio $= \frac{176}{192} = 11 : 12$

**72. (e);** Required percentage $= \frac{120}{80} \times 100 = 150\%$

**73. (b);** Required percentage $= \frac{192-180}{192} \times 100 = 6.25\%$

**74. (d);** Required average $= \frac{(352+240)}{2} = 296$

**75. (a);** Required difference $= (352 - 176) = 176$
Total seats in both the multiplex = (400 + 560) = 960
Required percentage $= \frac{176}{960} \times 100 = 18\frac{1}{3}\%$

**76. (e);** Required probability $= 1 - \left[\frac{13}{52} + \frac{4}{52} - \frac{1}{52}\right]$
$= 1 - \left[\frac{16}{52}\right] = 1 - \frac{4}{13} = \frac{9}{13}$

**77. (b);** 3 digit number = 9 × 10 × 10 = 900
Required Answer = Total 3 digit number – none of digit is 4
= 900 – 8 × 9 × 9
= 900 – 648 = 252

**78. (d);** Ratio of amount invested by P, Q and R = 8 : 6 : 9

| P | | Q | | R |
|---|---|---|---|---|
| 8 × 12 | | 6 × 5 + 10 × 7 | | 9 × 12 |
| 96 | : | 100 | : | 108 |

Ratio of their profit shares

| P | | Q | | R |
|---|---|---|---|---|
| 24 | : | 25 | : | 27 |

ATQ,
3 unit = Rs. 1350
1 unit = Rs. 450
Profit share of Q = 450 × 25 = Rs. 11,250

**79. (b);** Ratio of Alcohol and water in mixture = 60 : 40 = 3 : 2
Quantity of Alcohol left in mixture after 20 gm of mixture is taken out
$= 60 \times \frac{3}{5} = 36$ gm.
Quantity of water $= 60 \times \frac{2}{5} = 24$ gm
$\therefore$ Required ratio $= \frac{36}{24+6} = 6 : 5$

**80. (e);** Let total article bought = x
So, number of articles sold at different profit percent= $\frac{2}{5}x, \frac{3}{5}x$
For articles sold at 20% profit
$\frac{\text{Profit}}{\text{Selling Price}} \times 100 = 20$
$\frac{\text{Profit}}{\text{Selling Price}} = \frac{1}{5}$
So, cost price = 4
And selling price = 5
For article sold at $33\frac{1}{3}\%$ profit
$\frac{\text{Profit}}{\text{Selling Price}} = \frac{1}{3}$
So, cost price = 2 and selling price = 3
But cost price is same for both
Required ratio $= \frac{5 \times \frac{2}{5}x}{(3 \times 2) \times \frac{3}{5}x} = 5 : 9$

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# Mock 06

# IBPS RRB PO Prelims

## REASONING ABILITY

**Direction (1-5):** Study the following information carefully and wer the given questions:
Ten persons namely A, B, C, D, E, P, Q, R, S and T are sitting in two parallel rows such that each row consists of five persons. A, B, C, D, E are sitting in row 1 and facing south and rest of them are sitting in row 2 and facing north. Each person in row1 faces another person in row 2. Two persons sit between A and D, one of them sits at the end of the row. More than one person sit between E and B. D sits left to A. E does not face Q and T. R is immediate left to T, who does not face B. C faces R, who does not sit at any end of the row. The one who faces S does not sit at the end. S is not a neighbor of Q.

**1.** Who among the following faces T?
(a) D (b) C (c) B
(d) A (e) none of these

**2.** Who among the following sits 3rd to the right of P?
(a) T (b) Q (c) R
(d) S (e) none of these

**3.** Four of the following five are alike in a certain way and hence form a group, who among the following does not belongs to that group?
(a) T (b) Q (c) C
(d) S (e) D

**4.** If in a certain way A is related to S, C is related to T, then who among the following is related to R?
(a) S (b) C (c) B
(d) A (e) none of these

**5.** Who sits 2nd to the left of one who faces S?
(a) D (b) C (c) B
(d) A (e) none of these

**Directions (6-10):** Study the information and wer the following questions:
In a certain code language

'room are date off' is written as 'nx ro ka pt',
'all are room content' is written as 'ja sj ro ka',
'we are learning content' is written as 'ro mn sj ca' and
'all we often around' is written as 'la ja xa mn '.

**6.** What is the code for 'date' in the given code language?
(a) nx (b) ja (c) pt
(d) ka (e) Cannot be determined

**7.** What is the code for 'all room' in the given code language?
(a) ja ka (b) ja sj (c) nx ca
(d) pt ca (e) mn nx

**8.** What is the code for 'often' in the given code language?
(a) la
(b) xa
(c) pt
(d) either(a) or (b)
(e) either (a) or (c)

**9.** What is the code for 'content' in the given code language?
(a) mn
(b) nx
(c) pt
(d) either(a) or (b)
(e) sj

**10.** What is the code for 'learning' in the given code language?
(a) mn (b) ca (c) nx
(d) la (e) pt

**Directions (11-15):** Study the following information carefully and wer the questions given below:
Eight persons P, Q, R, S, T, U, V and W were born in four different months viz. January, February, March and April of the same year. Each of them was born on two different dates 9th and 16th but not necessarily in the same order.
V was born in month having least number of days. Three persons were born between V and U.S was born before V but not in the same month. Five persons were born between Q and R, who was born after Q. T was born before W and both of them were born on same date. P was not born on an even numbered date.

**11.** S was born on which of the following dates?
(a)16th Jan (b)16th March
(c)9th March (d)9th Jan
(e)9th Feb

**12.** Who among the following was born on 16th February?
(a)Q (b)T (c)W
(d)R (e)None of these

**13.** How many persons were born between S and W?
(a)one (b)two (c)three
(d)four (e)More than four

**14.** How many persons are younger to P?
(a)one (b)two (c)three
(d)four (e)More than four

**15.** Who was born between W and R?
(a)S (b)V (c)T
(d)P (e)U

**Directions (16-20):** In each of the questions below. Some statements are given followed by conclusions/group of conclusions numbered as I and II. You have to assume all the statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given two conclusions logically follows from the information given in the statements.
(a) If only conclusion I follows
(b) If only conclusion II follows
(c) If either I or II follows
(d) If neither I nor II follows
(e) If both I and II follow

**16.** Statements: Some Sharp are Pen. All Pen are Pages. No Pen is Clipboard.
Conclusions: I. Some Sharp are not clipboard
II. All Pages are Clipboard

**17.** Statements: All Dolls are Beautiful. Some Toys are Beautiful. All Toys are Classic.
Conclusions: I. Some Beautiful are Classic
II. No Beautiful are classic

**18.** Statements: All Bottle are Glass. No Bottle is Plate. All Plate are Steel
Conclusions: I. Some Glass are not Plate
II. Some Steel are not Bottle

**19.** Statements: All Mouse are CPU. No CPU is Phone. Some Phone are keys.
Conclusions: I. Some keys are CPU
II. No Mouse is Phone

**20.** Statements: All red are Blue. All Blue are Green. No Blue is Brown.
Conclusions: I. Some Brown are Green
II. Some Brown can be red

**Direction (21-25):** Study the following information carefully and wer the given questions:
Seven florists namely P, Q, R, S, T, U, V sell different flowers i.e. rose, marigold, lotus, daffodil, lily, sunflower and jasmine but not necessarily in the same order. They have three different number of shops viz. 2, 4 and 5. Atleast two persons have same number of shop. T sell jasmine and has same number of shop only as the one who sells marigold. S sells Sunflower and has 2 shops. The difference between the number of shops between P and U is an even number. The ones who sell Lotus and Daffodil have same number of shop. The one who sells lotus has the least number of shop. P sells rose and R has 4 shops. T has more shops than V. Q does not sell lotus and Daffodil. U does not sell lotus. P has more shops than U.

**21.** Who among the following represents the persons who sells lily?
(a) P (b)R (c)Q
(d) T (e) none of these

**22.** Which of the following represents the group of persons having maximum number of shops?
(a) P, T (b)R, U (c)Q, P
(d)T, Q (e) none of these

**23.** Which of the following sells Marigold?
(a) P (b)R (c)Q
(d) T (e) none of these

**24.** Which of the following combination is correct?
(a)P-jasmine-4 (b)R-rose-5
(c)Q-lily-2 (d)T-daffodil-4
(e) none of these

**25.** Four of the following five are alike in a certain way and hence form a group, who among the following does not belong to that group?
(a) P (b) R (c)Q
(d) U (e) V

**Directions (26-30):** In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.
Mark wer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**26.** Statements: $M \geq D < N < P < R$
Conclusions: I. $M < R$ II. $R \geq M$

**27.** Statements: $S<B$, $H \leq R > F > A = B$
Conclusions: I. $H < B$ II. $R > B$

**28.** Statements: $H > R \geq S = T$; $U \geq R$
Conclusions: I. $H > T$ II. $S \leq U$

**29.** Statements: $H \leq S > Q$ ; $Z < Q$
Conclusions: I. $H > Z$ II. $H \leq Z$

**30.** Statements: $R \leq H > K$; $L = T < R$; $A > L$
Conclusions: I. $H > L$ II. $K > T$

**Directions (31-35):** Study the following information carefully and wer the questions given below:
There are six family members J, S, D, C, V and W sitting around a circular table facing center. Each of them is related to J in some way.
Only one person sits between J and his father S. S sits opposite to his wife. One person sit between S's wife and D, who is not an immediate neighbor of J. C sits second to the right of his grandmother V and opposite to his mother W. W has only one son and one daughter.

**31.** Who among the following sits opposite to J?
(a) His daughter (b) His mother
(c) His son (d) His wife
(e) None of these

**32.** How is W related to D?
(a)mother (b)grandmother
(c)daughter (d)wife
(e)None of these

**33.** How is S related to C?
(a)father (b)brother (c)grandfather
(d)cousin (e)None of these

**34.** Who is sitting 2nd to the left of W?
(a)J (b)C (c)S
(d)D (e)V

**35.** How is J related to D?
(a)cousin (b)daughter
(c)father (d)grandfather
(e)None of these

**36.** How Many such pairs of letters are there in the word RISHIKESH, each of which have as many letters between them in the word as they have between them in the English alphabet?
(a) None (b) One (c) Two
(d) Three (e) More than three

**37.** Out of five persons A, O, M, E and P. M is younger than A and O but older than E. A is older than O and E. P is older than A. Then which person is the Youngest?
(a) O (b) E (c) P
(d) A (e) None of these

**Directions (38-40):** Study the following information carefully and wer the given questions:
Vaishali starts running for a race, from a point towards North and after covering 4 km takes four consecutive left turns and runs 5km, 5km, 6km and 1km distance respectively to reach the finish point.

**38.** What is the shortest distance between her initial and finish points?
(a) 1 km (b) 2 km (c) 3 km
(d) 4 km (e) none of these

**39.** In which direction was she facing before finishing the race?
(a) East (b) West (c) North
(d) South (e) none of these

**40.** After taking the second turn, in which direction was she running?
(a) East (b) West (c) North
(d) South (e) none of these

## QUANTITATIVE APTITUDE

**Directions (41-45):** Study the table given below & wer the questions.
Table given below shows the total votes polled in six villages, percentage of invalid votes out of total votes polled & ratio of total valid votes received by three parties contesting for the election.

| Villages | Total polled votes | Percentage of invalid votes | Ratio of valid votes received by 3 parties X Y Z |
|---|---|---|---|
| A | 4500 | $11\frac{1}{9}\%$ | 3 : 2 : 3 |
| B | 4400 | 25% | 5 : 3 : 3 |
| C | 3500 | 20% | 2 : 3 : 2 |
| D | 3200 | 30% | 1 : 3 : 4 |
| E | 5000 | 16% | 2 : 1 : 1 |
| F | 5500 | 20% | 6 : 3 : 2 |

**41.** Total valid votes received by party Y in village D is what percent of total valid votes received by party X in village A?
(a) 37% (b) 56% (c) 59%
(d) $43\frac{2}{3}\%$ (e) 64%

**42.** What is the ratio of total valid votes received by party X in village E to total valid votes received by party Z in village A?
(a) 7 : 5 (b) 2 : 7 (c) 5 : 3
(d) 9 : 11 (e) 27 : 13

**43.** If total votes polled from village D is 80% of the total registered voters in the voting list. Than find winner party from village D received what percent of votes w.r.t to total registered voters?
(a) 42% (b) 22% (c) 28%
(d) 38% (e) 32%

**44.** Total valid votes received by party X in village E and F together are how much more/less than total registered voters in village C if total votes polled in village C is 70% of total registered voters?
(a) 400 (b) 900 (c) 700
(d) 300 (e) 500

**45.** What is the average of total valid votes received by party X in village B and valid votes received by party Z in village D?
(a) 1270 (b) 1310 (c) 1230
(d) 1470 (e) 1130

**Directions (46-50):** What will come at the place of question mark (?) in the following number series.

**46.** 19, 26, 52, 115, 239, ?
(a) 545 (b) 454 (c) 328
(d) 426 (e) 512

**47.** 28, 98, 157, 205, 242, ?
(a) 268 (b) 364 (c) 284
(d) 424 (e) 312

**48.** 16, 8, 12, 30, ?, 472.5
(a) 115 (b) 225 (c) 105
(d) 120 (e) 90

**49.** 225, 250, 466, 515, 1027, ?
(a) 1205 (b) 1320 (c) 1250
(d) 1108 (e) 1120

**50.** 64, 64, 32, 96, 24, ?
(a) 120 (b) 105 (c) 175
(d) 150 (e) 180

**51.** One day work of a man, a women & a child is in the ratio 5 : 3 : 2 & if there are 8 men, 12 women & 16 children to complete the work & if their total monthly wage is Rs 5400 which is divided in ratio of work done by a man, a women & a child then find the total wage of 10 men, 12 women in one month?
(a) Rs 3600 (b) Rs 4300 (c) Rs 4500
(d) Rs 3200 (e) Rs 2800

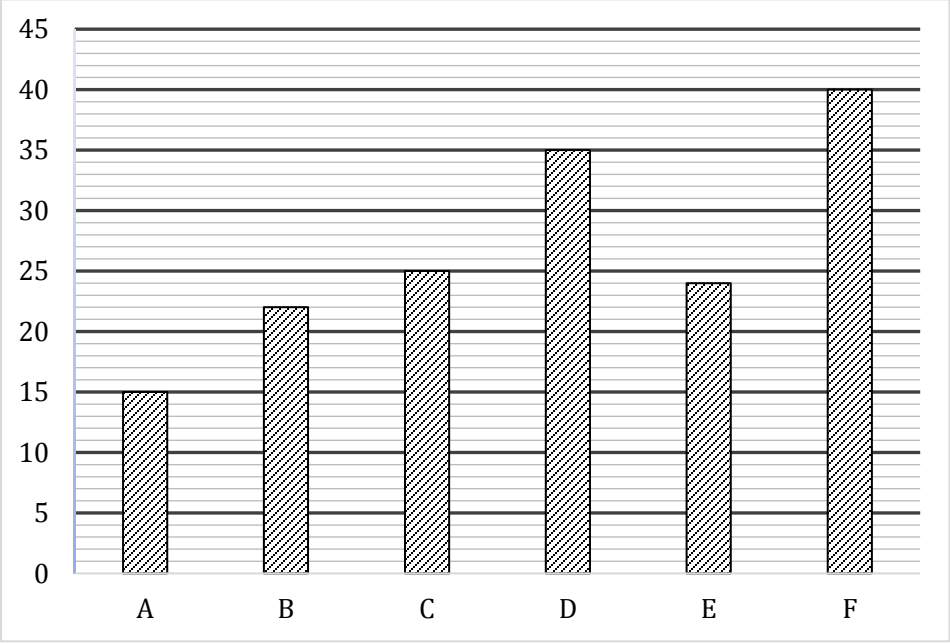
**52.** Abhi takes 40% more time than Ashu to complete a work. If Ashu works for X days & after that the remaining work is completed by Abhi in (x + 4) days than ratio of work done by Ashu and by Abhi is 7 : 9. Find in how many days Abhi will complete the work alone?
(a) 26 days (b) 14 days (c) 24 days
(d) 12 days (e) 16 days

**53.** Present age of mother age is 3 times the present age of his son, 5 years hence mother age will be $\frac{5}{2}$ times the age of his son. After 10 years from now mother age will be how many times of age of his son at that time.
(a) 4 times (b) 3.5 times (c) 3 times
(d) 2.2 times (e) 2.8 times

**54.** A sum of Rs 1250 lent partly at 13% SI p.a & remaining at 17% SI per annum. If the total interest received after 3 years is Rs 525. Then find the ratio of sum lent at 13% to sum lent at 17%?
(a) 5 : 3 (b) 3 : 2 (c) 1 : 3
(d) 2 : 3 (e) 3 : 1

**55.** The curved surface area of hemisphere 308 $cm^2$. If the radius of hemisphere is equal to the height of cylinder & ratio of height and radius of cylinder is 7 : 3 then find the total surface area of cylinder? (in $cm^2$)
(a) 62π (b) 80π (c) 60π
(d) 45π (e) 40π

**Directions (56-60):** Study the bar-graph carefully & answer the question.
Bar- Graph given below shows the percentage of males out of total persons who visits park in six different cities



**56.** If total population visiting park in city C is 75,000 then find total female who visitor park in city C?
(a) 44,000 (b) 62,480 (c) 48,500
(d) 56,250 (e) 52,800

**57.** If ratio of total male population visiting park in city C to E is 2 : 3 then total population visiting park in city E is what percent of total population visiting park in city C?
(a) 120% (b) $240\frac{1}{3}\%$ (c) $156\frac{1}{4}\%$
(d) 180% (e) $152\frac{1}{2}\%$

**58.** If total population in city F is 21000 of which 60% are visiting park. Then total male population visiting park in city F is how much more/less than total population in city A visiting park. Total population visiting park in city A is 50% more than total population visiting park in city F?
(a) 12,480 (b) 16,550 (c) 13,860
(d) 14,575 (e) 18,000

**59.** If males visiting park in city B is 4400 and males visiting park in city F is 50% of total males visiting park in city B then male park visitor in city B is what percent more/less than total park visitor in city F ?
(a) 20% (b) 25% (c) $42\frac{1}{2}\%$
(d) 35% (e) 47%

**60.** If total males visiting park in city E and A together is 39000 & males visiting park E is 60% more than A then find total females visiting park in city E.
(a) 120,000 (b) 76,000 (c) 132,000
(d) 144,000 (e) 84,830

**Directions (61-65):** What approximate value will come at the place of question mark (?).
(Note:- You are not expected to calculate exact value)

**61.** $(13.012)^2 + (21.025)^2 - 29.89 \times 7.025 = ? - 520 + 150$
(a) 770 (b) 925 (c) 820
(d) 850 (e) 720

**62.** 18.05% of 1900.128 + ?% of 1149.89 = 684.025 – 111.89
(a) 35 (b) 25 (c) 20
(d) 40 (e) 30

**63.** $\frac{439.92}{?} = (8.01)^3 - (2.01)^3 - (241.92 \times 1.98)$
(a) 36 (b) 18 (c) 32
(d) 22 (e) 28

**64.** $(?)^2 - 431.98 = 1239.81 + 482.21 - 1313.01$
(a) 29 (b) 33 (c) 39
(d) 19 (e) 23

**65.** $30.025 \times \sqrt{?} + \sqrt{961.01} = 11.01\%\ of\ 1300 - 22.21$
(a) 25 (b) 9 (c) 16
(d) 36 (e) 64

**66.** A train crosses a man who is moving in same direction going along the railway track and speed of man is 4 km/hr. The man could see the train upto 3 min. Find the speed of train if at time of disappearance the distance between train to man is 0.8 km & length of train is 200 meter? (in km/hr).
(a) 24 (b) 28 (c) 32
(d) 18 (e) 36

**67.** There are two conatiners A and B. Container A contains some quantity of wheat only and container B contains same quantity of rice only . 10 kg of wheat is trferred from container A to B & then $\frac{2}{5}$ th of the mixture formed in container B is trferred in container A. If the final mixture in container A is 2 times of the final mixture in B then find final mixture in container B?
(a) 70 kg (b) 40 kg (c) 60 kg
(d) 30 kg (e) 50 klg

**68.** Find the number of ways in which letters of the word "ASSURANCE" is arranged such that both S are together and all vowels are together?
(a) 1440 (b) 1680 (c) 1640
(d) 1260 (e) 1480

**69.** A shopkeeper mark up the price of a article by 40% above cost price. He gives 25% discount on marked price and earns Rs 420 profit. Find his profit if he give discount of 20% in place of 25%.
(a) Rs 1204 (b) Rs 1240 (c) Rs 1180
(d) Rs 1008 (e) Rs 1080

**70.** Rahul and Rohit started a business, in which Rahul invested Rs 4000 on a condition that Rohit will pay a interest of 10% per annum on $\frac{1}{4}$ th part of Rahul 's investment from total profit of business. If Rahul receives Rs 120 per month out of total profit for managing the business & remaining profit is divided equally among Rahul & rohit. At the end of year it is found that profit received by Rahul is 3 times that of Rohit from the business. Find the total annual profit of the business?
(a) Rs 3250 (b) Rs 2840 (c) Rs 3080
(d) Rs 3620 (e) Rs 2780

**Directions (71-75):** Study the table given below & wer the question.
Table given below shows the number of items sold by four different sellers in the five different months.

| Seller / Month | A | B | C | D |
|---|---|---|---|---|
| Feb | – | 42 | 52 | 64 |
| March | 48 | – | 24 | 74 |
| April | 32 | 28 | 48 | 56 |
| May | 36 | 64 | – | 32 |
| June | 54 | 81 | 36 | – |

Note- Some data are missing in the given table, find the missing data if necessary.

**71.** If seller A sold 150 items in January and February together and number of items sold by seller A in February and March together is 80% of the no. of items sold by same seller in May and June together then find no. of items sold in January by seller A?
(a) 108 (b) 132 (c) 126
(d) 92 (e) 96

**72.** If the ratio of total items sold by seller B in Feb & March together to total items sold by seller C in April & may together is 1 : 2 and items sold by C in May is 64. Then find total items sold by seller B in march?
(a) 14 (b) 20 (c) 24
(d) 12 (e) 32

**73.** If average of items sold in April by all sellers is equal to average items sold in March by all sellers then total items sold by seller B in March is what percent of items sold by seller A in May?
(a) 40% (b) 50% (c) 70%
(d) 75% (e) 60%

**74.** If no. of items sold by seller D in June is 50% more than no. of items sold by seller B in May then find the difference of total items sold by seller D in May & June together and total items sold by seller A in march & April together?
(a) 58 (b) 32 (c) 36
(d) 42 (e) 48

**75.** Find the ratio of items sold by seller B in Feb & June together to items sold by seller C in May & June together if items sold by seller C in May is $33\frac{1}{3}$% of items sold by seller B in June?
(a) 47 : 23 (b) 41 : 23 (c) 43 : 21
(d) 41 : 21 (e) 31 : 21

**Directions (76-80):** In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give wer
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

**76.** **I.** $2x^2 - 25x + 72 = 0$
**II.** $4y^2 - 12y - 27 = 0$

**77.** I. $x^2 - 8x + 15 = 0$
II. $y^2 - 3y + 2 = 0$

**78.** I. $2x + 3y = 14$
II. $4x + 2y = 16$

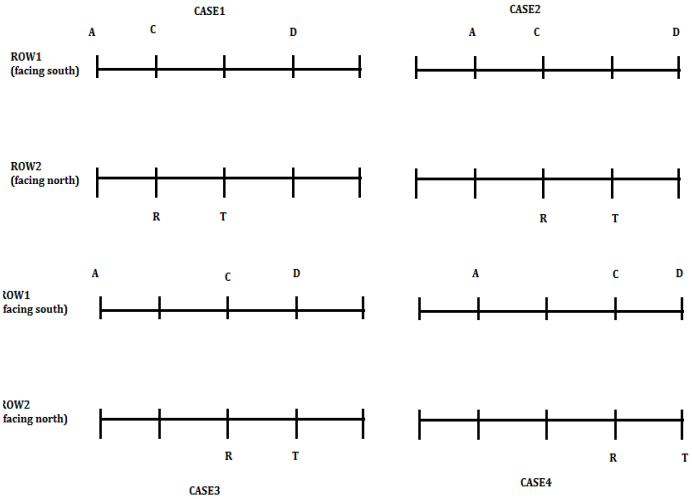
**79.** **I.** $2x^2 + 11x - 195 = 0$
**II.** $3y^2 + 10y - 125 = 0$

**80.** **I.** $x^2 + 17x + 52 = 0$
**II.** $y^2 + 27y + 182 = 0$

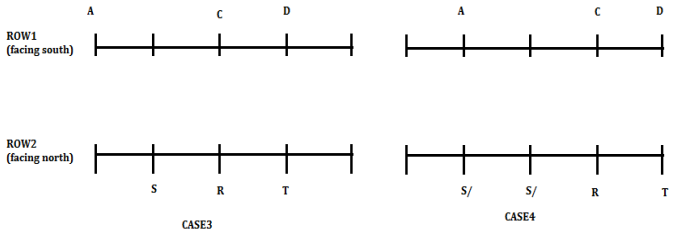
# Mock 06 : Solutions

## REASONING ABILITY

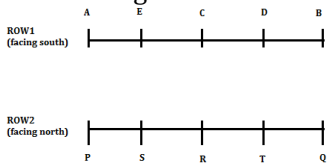
**Direction (1-5):** Two persons sit between A and D, one of them sits at the end of the row. D sits left to A. R is immediate left to T. C faces R, who does not sit at any end of the row. We get four possibilities:




The one who faces S does not sit at the end. E does not face T. Also, T does not face B, so case1 and 2 gets eliminated, as there is no place left for E and B.




S is not neighbor of Q, from this position of S gets confirmed in case 4 i.e. immediate left to R. E does not face Q. More than one person sits between E and B. So, case4 gets eliminated. The final arrangement is:



**1. (a); 2. (a); 3. (b);**

**4. (e); 5. (a);**

**Solutions (6-10):**

| ELEMENT | CODE |
|---|---|
| Room | ka |
| Are | ro |
| Date/off | nx/pt |
| All | ja |
| Content | sj |
| We | mn |
| Learning | ca |
| Often/around | la/xa |

**6. (e); 7. (a) 8. (d)**

**9. (e) 10. (b)**

**Directions (11-15):** V was born in month having least number of days. Three persons were born between V and U.

S was born before V but not in the same month. So, there are two possible cases-----

| Case-1 | | |
|---|---|---|
| | 9th | 16th |
| January | /S | /S |
| February | V | |
| March | | |
| April | U | |
| **Case-2** | | |
| | 9th | 16th |
| January | /S | /S |
| February | | V |
| March | | |
| April | | U |

Five persons born between Q and R, who was born after Q. T was born before W and both of them were born on same date. Therefore, it is clear that T was born in February and W was born in March.

| Case-2 | | |
|---|---|---|
| | 9th | 16th |
| January | Q | S |
| February | T | V |
| March | W | |
| April | R | U |

| Case-1 | | |
|---|---|---|
| | 9th | 16th |
| January | S | Q |
| February | V | T |
| March | | W |
| April | U | R |

P was not born on an even numbered date. Therefore case-2 will be eliminated and we got the final arrangement----

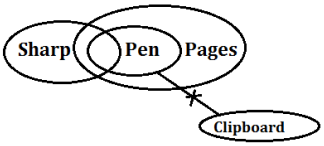
| | 9th | 16th |
|---|---|---|
| January | S | Q |
| February | V | T |
| March | P | W |
| April | U | R |

**11. (d) 12. (b) 13. (d)**

**14. (c) 15. (e)**

**Directions (16-20):**

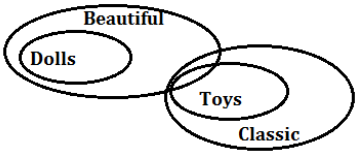
**16. (a);**




For-I From venn diagram No pen is clipboard and Some Sharp are Pen therefore Some sharp are not clipboard. Hence, Conclusion I can be concluded

For-II Since, there is no direct relation between elements Pages and Clipboard. Hence, Conclusion II cannot be concluded.

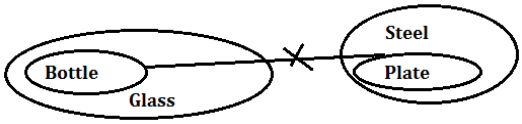
**17. (a);**




For-I From venn diagram it is clear that Some beautiful are Classic. Hence, Conclusion I follows.

For-II From venn diagram it is clear that Some beautiful are Classic, Therefore, we cannot conclude that No Beautiful is Classic. Hence, Conclusion II does not follow.

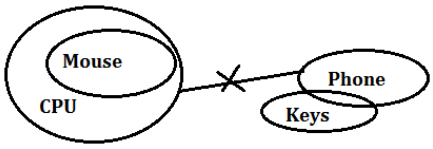
**18. (e);**




For-I Since No bottle is Plate and All bottle are glass it is clear that glass which are bottle are not plate. Hence, Conclusion I is true

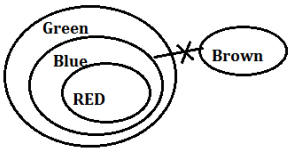
For-II Since No Plate is Bottle and All plate are Steel it is clear that steel which are plate are not bottle. Hence, Conclusion II is true.

**19. (b);**




For-I Since, there is no direct relation between Keys and CPU. Therefore, we cannot conclude that Some Keys are CPU.
For-II. From venn diagram it is clear that All mouse are CPU and No CPU is Phone. Therefore, Mouse cannot be Phone and Conclusion II will be True.

**20. (d);**




For-I Since there is no direct relation between Green and Brown. Therefore, we cannot conclude that Some Brown are Green.
For-II Since all red is Blue and No blue is Brown. Therefore, Brown cannot be Red. Hence, Conclusion II cannot be concluded.

**Direction (21-25):** T sells jasmine. S sells Sunflower and has 2 shops. P sells rose and R has 4 shops. Q does not sell lotus and Daffodil. U does not sell lotus.

| Person | Flowers | Shops |
|---|---|---|
| P | Rose | |
| Q | ~~Lotus/Daffodil~~ | |
| R | | 4 |
| S | Sunflower | 2 |
| T | Jasmine | |
| U | ~~lotus~~ | |
| V | | |

The difference between number of shops between P and U is an even number. P has more shops than U, so only one possibility is there that P has 4 shops and U has 2. T has same number of shop only as the one who sells marigold. T has more shops than V. So, Q sells marigold and T and Q both have 5 shops. Also, V sells lotus. The ones who sell Lotus and Daffodil have same number of shop. The final arrangement is:

| Person | Flowers | Shops |
|---|---|---|
| P | Rose | 4 |
| Q | Marigold | 5 |
| R | Lily | 4 |
| S | Sunflower | 2 |
| T | Jasmine | 5 |
| U | Daffodil | 2 |
| V | Lotus | 2 |

**21. (b)** **22. (d)** **23. (c)**

**24. (e)** **25. (c)**

**Directions (26-30):**

**26. (d);** I. M < R (false) II. R ≥ M(false)

**27. (b);** I. H < B (false) II. R > B (true)

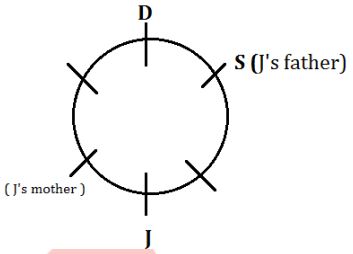
**28. (e);** I. H > T (true) II. S ≤ U (true)

**29. (c);** I. H > Z (false) II. H ≤ Z (false)
All three possibilities are given therefore it is 'either and or' case.

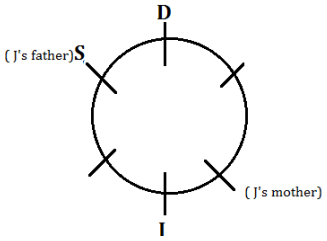
**30. (a);** I. H > L (true) II. K > T (false)

**Directions (31-35):** Only one person sits between J and his father S. S sits opposite to his wife. One person sits between S's wife and D, who is not an immediate neighbor of J. S can sit either 2nd to the right of J or 2nd to the left of J. So, there are two possible cases-----

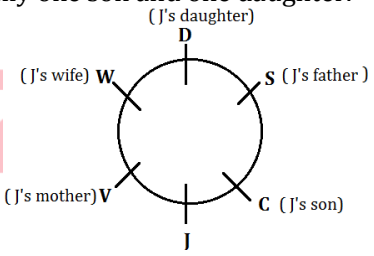
Case-1

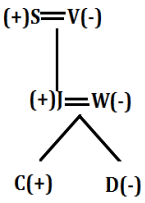



Case-2




C sits second to the right of his grandmother and opposite to his mother W. Therefore case 2 will be eliminated. W has only one son and one daughter.

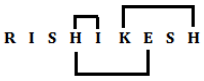



**31. (a)** **32. (a)** **33. (c)**

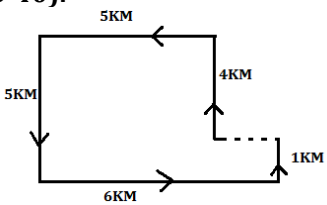
**34. (c)** **35. (c)**

**36. (d);**




37. (b); **P > A > O > M > E**

**Directions (38-40):**




**38. (a)** **39. (c)** **40. (d)**

## QUANTITATIVE APTITUDE

**41. (b);** Total valid votes received by party Y in village D $= 3200 \times \frac{70}{100} \times \frac{3}{8}$
$= 840$
Total valid votes received by party X in village A
$= 4500 \times \frac{8}{9} \times \frac{3}{8}$
$= 1500$
Required percentage $= \frac{840}{1500} \times 100 = 56\%$

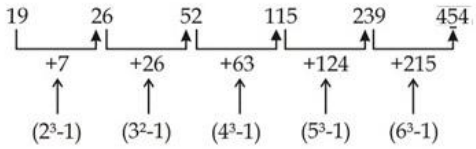
**42. (a);** Total valid votes received by party X in village E
$= 5000 \times \frac{84}{100} \times \frac{2}{4} = 2100$
Total valid votes received by party Z in village A
$= 4500 \times \frac{8}{9} \times \frac{3}{8}$
$= 1500$
Required ratio $= \frac{2100}{1500} = 7 : 5$

**43. (c);** Total registered voters in village D
$= \frac{3200}{80} \times 100 = 4000$
Total votes received by winner party
$= 3200 \times \frac{70}{100} \times \frac{4}{8} = 1120$
Required percentage $= \frac{1120}{4000} \times 100$
$= 28\%$

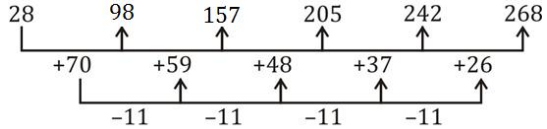
**44. (e);** Total valid votes received by party X in village E & F together
$= 5000 \times \frac{84}{100} \times \frac{2}{4} + 5500 \times \frac{80}{100} \times \frac{6}{11}$
$= 2100 + 2400 = 4500$
Total registered votes in village C
$= \frac{3500}{70} \times 100 = 5000$
Required difference = 5000 – 4500 = 500

**45. (b);** Required average
$= \frac{1}{2}\left[4400 \times \frac{75}{100} \times \frac{5}{11} + 3200 \times \frac{70}{100} \times \frac{4}{8}\right]$
$= \frac{1}{2}[1500 + 1120] = \frac{2620}{2} = 1310$

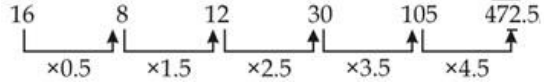
**46. (b);**



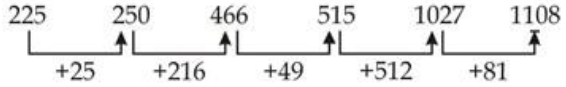

**47. (a);**



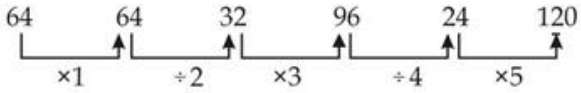

**48. (c);**




**49. (d);**




**50. (a);**




**51. (b);**

| | Men | : | Women | : | Child |
|---|---|---|---|---|---|
| Work | 5 | : | 3 | : | 2 |
| Number | 8 | : | 12 | : | 16 |
| wage | 40 | : | 36 | : | 32 |
| | 10 | : | 9 | : | 8 |

Total wage of men $= 5400 \times \frac{10}{27} = 2000$
Total wage of women $= 5400 \times \frac{9}{27} = 1800$
Total wage of children $= 5400 \times \frac{8}{27} = 1600$
Wage of a man $= \frac{2000}{8} = 250$
Wage of a woman $= \frac{1800}{12} = 150$
Wage of a child $= \frac{1600}{16} = 100$
Total wage of 10 man 12 women
$= 10 \times 250 + 12 \times 150$
$= 2500 + 1800 =$ Rs 4300

**52. (e);** Let Ashu works for a hours
Therefore, Abhi works for 1.4 hours for the same work
Ratio of efficiency
Ashu : Abi
7 : 5
$\frac{7ax}{5a \times (x+4)} = \frac{7}{9}$
$9x = 5x + 20$
$4x = 20$
$x = 5$
Total work = 7x + 5x + 20 = 80 unit
Abhi alone will complete the work in
$= \frac{80}{5} = 16$ days

**53. (d);** Let the present age of son be x yrs
∴ present age of mother = 3x yrs
After 5 years
$(3x + 5) = \frac{5}{2}(x + 5)$
$x = 25 - 10 = 15$
10 years hence from present,
$= \frac{3 \times 15 + 10}{15 + 10} = \frac{55}{25} = 2.2$ times

**54. (c);** Let sum lent at 13% be Rs x
Therefore, sum lent at 17% be Rs (1250-x)
Atq,
$\frac{x\times13\times3}{100}+\frac{(1250-x)\times17\times3}{100}=525$
$\frac{39x}{100}-\frac{51x}{100}+\frac{63750}{100}=525$
12x = 63750 – 52500
x = Rs 937.5
∴ sum lent at 13% is Rs 937.5
& lent at 17% is Rs 312.5
∴ required ratio $=\frac{937.5}{312.5}=3:1$

**55. (c);** Curved surface area of hemisphere
$=2\pi r^2=308$ [r → radius of hemisphere]
= 7 cm
Height of cylinder (h) = 7 cm
Radius of cylinder (R) $=\frac{7}{7}\times3=3$ cm
Total surface area of cylinder
$=2\pi R(R+h)$
$=2\times3\times10\pi=60\pi\ cm^2$

**56. (d);** Total population visiting park in city C = 75,000
Female population visiting park from city C
$=75{,}000\times\frac{(100-25)}{100}=56{,}250$

**57. (c);** Let total male population in city C be 2x & total male population in city E be 3x
Required percentage $=\frac{3x\times\frac{100}{24}}{2x\times\frac{100}{25}}\times100$
$=156\frac{1}{4}\%$

**58. (c);** Total population visiting park in city F
$=21000\times\frac{60}{100}=12{,}600$
Total male population visiting park in city F
$=21{,}000\times\frac{60}{100}\times\frac{40}{100}=5040$
Total population in city A visiting park
= 12600 × 1.5 = 18,900
Required difference = 18,900 – 5040=13860

**59. (a);** Total males visiting park in city B = 4,400
So, total park visitor in city B
$=\frac{4400}{22}\times100=20{,}000$
Male park visitor in city F $=\frac{4400}{2}=2200$
Total park visitor in city F $=\frac{2200}{40}\times100=5500$
Required percentage $=\frac{(5500-4400)}{5500}\times100=20\%$

**60. (b);** Total males visiting park in city A be x
∴ total males visiting park in city E = 1.6x
Atq,
x + 1.6x = 39000
2.6x = 39000
x = 15000
So, total females visiting park in city E
$=1.6\times15{,}000\times\frac{76}{24}=76{,}000$

**61. (a);** $(13)^2+(21)^2-30\times7\simeq?-520+150$
169 + 441 – 210 = ? – 370
? = 770

**62. (c);** $\frac{18}{100}\times1900+\frac{?}{100}\times1150=684-112$
$\frac{?}{10}\times115=572-342$
? = 20

**63. (d);** $\frac{440}{?}=512-8-484$
$?=\frac{440}{20}$
?= 22

**64. (a);** $(?)^2-432=1240+482-1313$
$(?)^2=409+432$
$(?)^2=841$
? = 29

**65. (b);** $30\times\sqrt{?}+\sqrt{961}=\frac{11}{100}\times1300-22$
$30\times\sqrt{?}+31=143-22$
$30\times\sqrt{?}=90$
? = 9

**66. (a);** Distance covered by man in 3 min
$=4\times\frac{5}{18}\times3\times60=200m$
Total distance travelled by train = 200 + 800 + 200
= 1200 meter
Speed of train
$=\frac{1.2}{\frac{3}{60}}=1.2\times20$
= 24 km/hr

**67. (c);** Let the container A & B contains x kg of wheat & rice respectively.
Atq,
$(x-10)+\frac{2}{5}(x+10)=2\left[\frac{3(x+10)}{5}\right]$
$\frac{5x-50+2x+20}{5}=\frac{6(x+10)}{5}$
7x – 30 = 6x + 60
x = 90 kg
Final mixture in container B
$=\frac{3}{5}[90+10]=60\ kg$

**68. (a);** There are 2 'S' and 4 vowels
Required no. of ways
$=\frac{\lfloor5\times\lfloor4}{\lfloor2}$
= 1440

**69. (d);** Let the cost price of article be Rs 100x
Mark up prie of article $=100x\times\frac{140}{100}=Rs\ 140x$
Selling price of article $=140x\times\frac{75}{100}=Rs\ 105x$
Atq,
$\therefore(105x-100x)=420$
x= 84
∴ cost price = Rs 8400

Mark up price = 84 × 140 = Rs 11760
∴ selling price after 20% discount
$= 11760 \times \frac{80}{100} = 9408$
∴ Profit after 20% discount = 9408 – 8400
= Rs 1008

**70. (c);** Rohit pays interest to Rahul from total profit
$= \frac{4000}{4} \times \frac{10}{100} = Rs100$
Rahul receives for managing business
= 120 × 12 = Rs 1440
Let remaining profit be Rs 2x
Total profit which Rahul receives
= (100 +1440 + x)
Rs (1540+ x)
Total profit which rohit receives after deduction
= Rs x
Atq,
1540 + x = 3x
$x = \frac{1540}{2} = Rs\ 770$
∴ Total profit = 1540 + 2x
= 1540 + 2 × 770
= Rs 3080

**71. (c);** Let no. of items sold by A in Feb be x
$(x + 48) = \frac{80}{100} \times (36 + 54)$
x = 72 – 48 = 24
Items sold by A in Jan = 150 – 24 = 126

**72. (a);** Let total items sold by B in March be 'x '
Item sold by C in may =64
Atq,
$\frac{42 + x}{48 + 64} = \frac{1}{2}$
84 +2x = 112
$x = \frac{28}{2} = 14$

**73. (b);** Average of item sold in April is equal to average of item sold in March by all sellers. So, total item sold in march is equal to total item sold in April
Total items sold by all sellers in March $= 32 + 28 + 48 + 56 = 164$
No. of item sold by seller B in March =164 – 48 – 24 – 74 = 18
Required percentage = $\frac{18}{36} \times 100 = 50\%$

**74. (e);** Average items sold by seller D in June
$= 64 \times \frac{150}{100} = 96$
Required difference = (96 + 32) – (48 + 32)
= 128 – 80 = 48

**75. (d);** Items sold by seller C in May
$= 81 \times \frac{1}{3} = 27$
Required ratio = $\frac{42+81}{27+36} = \frac{123}{63}$
= 41 : 21

**76. (b); I.** $2x^2 - 25x + 72 = 0$
$2x^2 - 16x - 9x + 72 = 0$
$2x(x - 8) - 9(x - 8) = 0$
(2x-9)(x-8)= 0
$x = 8, \frac{9}{2}$
**II.** $4y^2 - 12y - 27 = 0$
$4y^2 + 6y - 18y - 27 = 0$
$2y(2y + 3) - 9(2y + 3) = 0$
(2y-9)(2y+3)=0
$y = \frac{-3}{2}, \frac{9}{2}$
$x \geq y$

**77. (a);** I. $x^2 - 8x + 15 = 0$
$\Rightarrow x^2 - 5x - 3x + 15 = 0$
$\Rightarrow x(x - 5) - 3(x - 5) = 0$
$\Rightarrow (x - 3)(x - 5) = 0$
$\therefore x = 3\ or\ 5$
II. $y^2 - 3y + 2 = 0$
$\Rightarrow y^2 - 2y - y + 2 = 0$
$\Rightarrow y(y - 2) - 1(y - 2) = 0$
$\Rightarrow (y - 1)(y - 2) = 0$
∴ y = 1 or 2
$\therefore x > y$

**78. (c);** $2x + 3y = 14$ .....(I)
$4x + 2y = 16$ .....(II)
On, (I) × 2 – (II), we have
$4x + 6y - 4x - 2y = 28 - 16$
$\Rightarrow 4y = 12 \Rightarrow y = 3$
From equation I,
$2x + 3 \times 3 = 14$
$\Rightarrow 2x = 14 - 9 = 5 \Rightarrow x = \frac{5}{2}$
So, $x < y$

**79. (e);** I. $2x^2 + 11x - 195 = 0$
$2x^2 + 26x - 15x - 195 = 0$
2x (x + 13) – 15 (x + 13) = 0
(2x-15)(x+13)=0
$x = -13, \frac{15}{2}$
II. $3y^2 + 10y - 125 = 0$
$3y^2 + 25y - 15y - 125 = 0$
y(3y + 25) – 5 (3y+ 25) = 0
(y-5)(3y+25)=0
$y = -\frac{25}{3}, 5$
∴ Relation cannot be established.

**80. (b);** $x^2 + 17x + 52 = 0$
$x^2 + 13x + 4x + 52 = 0$
x(x + 13) + 4(x + 13) = 0
(x+4)(x+13)=0
x = -4, -13
II. $y^2 + 27y + 182 = 0$
$y^2 + 14y + 13y + 182 = 0$
y (y + 14) + 13 (y + 14) = 0
(y+13)(y+14)=0
y = -14, -13
$x \geq y$

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# Mock 07

# IBPS RRB PO Prelims

## REASONING ABILITY

**Directions (1-5):** Study the following information to answer the given questions.

Eight persons, viz J, K, L, M, N, O, P and Q parked their car in a straight line facing towards north direction but not necessarily in the same order. Each of them has different car viz. Tata, Maruti, Toyota, Renault, Honda, Ford, Audi and Mercedes but not necessarily in the same order.

P parked his car third to the right of the one who has Honda car. Mercedes car is parked second to the right of P. Neither J nor N has Tata car. Q does not have Mercedes car. J and N parked their car adjacent to each other. Neither J nor N has either Honda or Mercedes car. Q parks his car third to the right of the one who has Tata car. Only two persons park their car between N and the one who has Audi car. Maruti car is parked on the immediate left of the M. Only one person parks his car between N and K. Neither J nor N park their car adjacent to P. L parked his car second to left of one who has Audi car. N does not have Toyota or Ford car. The one who has Ford car parked his car at the extreme end of the line.

**1.** Who among the following parked his car exactly between N and K?
(a) The one who has Honda car
(b) The one who has Tata car
(c) P
(d) J
(e) The one who has Mercedes car

**2.** 'Q' is related to 'Audi' in a certain way based on the above arrangement. 'K' is related to 'Renault' following the same pattern. Who is related to 'Honda' following the same pattern?
(a) O (b) P (c) J
(d) M (e) L

**3.** Which of the following is true regarding M?
(a) Only two persons parked their car to the left of M.
(b) M parked his car second to the right of the one who has Audi car.
(c) N and K both park their car adjacent to M.
(d) M has Mercedes car.
(e) None is true

**4.** How many people park their car between L and the one who has Maruti car?
(a) None (b) One (c) Two
(d) Three (e) Four

**5.** Who among the following parked their car at extreme ends of the line?
(a) J and the one who has Mercedes car
(b) The one who has Honda car and N
(c) L and P
(d) The one who has Toyota car and the one who has Ford car
(e) None of these

**6.** B is sister of A. A is the mother of D. B has a daughter C who is married to F. G is the husband of A. How is B related to F?
(a) Sister-in-law (b) Mother-in-law
(c) Mother (d) Sister (e) None of these

**7.** A person walks 20 m towards east direction. Then he turns to his right and walks 10 m. Then he turns left and walks 10 m and then turning his right he walks 20 m. Then he turns right again and walks 60 m. He is in which direction from his starting point?
(a) North (b) North-west (c) East
(d) North-east (e) South-west

**8.** How Many such pairs of letters are there in the word "ACCIDENT", each of which has as many letters between them in the word as they have between them in the English alphabet?
(a) None (b) One (c) Two
(d) Three (e) More than three

**Directions (9-10):** Study the following information carefully and answer the questions given below:

Out of five persons J, K, L, M and N. M is shorter than J and N but taller than K. J is taller than N but shorter than L. Height of second tallest person is 175 cm.

**9.** Who among the following is the Shortest?
(a) M (b) K (c) N
(d) J (e) None of these

**10.** If the difference in height of J and M is 6 cm then what can be the height of N?
(a) 178 cm (b) 163 cm (c) 173 cm
(d) 176 cm (e) 168 cm

**Directions (11-15):** Study the set of numbers given below and answer the questions which follow.

839 589 427 581 275

**11.** If in each number, the first and the second digits are interchanged, which will be the second lowest number?
(a) 427 (b) 581 (c) 839
(d) 275 (e) 589

**12.** If in each number, the first and the last digits are interchanged, which among the following will be the third highest number?
(a) 427 (b) 581 (c) 839
(d) 275 (e) 589

**13.** If in each number, the second and the third digits are interchanged, which will be the second highest number?
(a) 427 (b) 581 (c) 839
(d) 275 (e) 589

**14.** If two is subtracted from the first digit of each of the numbers and then the first and the third digits are interchanged, which of the following will be the lowest?
(a) 427 (b) 581 (c) 839
(d) 275 (e) 589

**15.** If in each number, all the three digits are arranged in ascending order within itself, which of the following will be the third lowest number?
(a) 427 (b) 581 (c) 839
(d) 275 (e) 589

**Directions (16-20):** Study the following arrangement carefully and answer the questions given below:

**A S N T U J L K E F L N P U E D C Z S Q Y M A**

**16.** Which of the following is sixth to the left of the fifteenth from the left end of the given arrangement?
(a) K (b) E (c) L
(d) N (e) None of these

**17.** How many such vowels are there in the given arrangement each of which is immediately preceded by a consonant but not immediately followed by a vowel?
(a) One (b) None (c) Three
(d) Two (e) Four

**18.** Which element is exactly between the element which is sixth from the right end and the one which is tenth from the left end?
(a) P (b) U (c) E
(d) D (e) None of these

**19.** What should come in place of question mark (?) in the following series based on the above arrangement?
TUL EFN UEC ?
(a) ZSY (b) SQY (c) QSY
(d) SQM (e) None of these

**20.** Which element is tenth to the right of seventeenth from the right end?
(a) D (b) S (c) Z
(d) E (e) C

**Directions (21-25):** In the following questions, the symbols #, %, $, @ and © are used with the following meaning as illustrated below.
'A # B' means 'A is smaller than B'.
'A % B' means 'A is either smaller than or equal to B'.
'A $ B' means 'A is either greater than or equal to B'.
'A @ B' means 'A is neither greater than nor smaller than B'.
'A& B' means 'A is greater than B'.

Now, in each of the following questions assuming the given statements to be true, find which of the two Conclusions I and II given below them is/are definitely true and give your answer accordingly. Mark your answer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21. Statements:** A & B @C $ D # E
**Conclusions: I.** A & D **II.** B # E

**22. Statements:** J % K & L @ M # N
**Conclusions: I.** J @ M **II.** J # M

**23. Statements:** S @ T & U $ V @ W
**Conclusions: I.** S & W **II.** S @ W

**24. Statements:** N $ O @ P & Q # R
**Conclusions: I.** R & O **II.** N & Q

**25. Statements:** G @ H # I & J $ K
**Conclusions: I.** G & K **II.** H # K

**Directions (26-30):** Study the following information carefully and answer the questions given below:

There are eight persons A, B, C, D, E, F, G and H sitting around a circular table. Some of them faces the centre while other face outside the centre.

D sits second to the left of B. H sits opposite to E and both faces same direction. A is an immediate neighbor of E. D sits to the immediate right of E. G sits to the immediate left of F.G is not a neighbor of A. Immediate neighbors of C face same direction. Immediate neighbors of E face opposite direction. G and C face same direction as A. Not more than four people face inside.

**26.** Who among the following sits to the immediate right of A?
(a) E (b) F (c) G
(d) D (e) None of these

**27.** What is the position of B with respect to H?
(a) Immediate right
(b) Immediate left
(c) Second to the left
(d) Second to the right
(e) None of these

**28.** Who sits third to the right of D?
(a) F (b) A (c) B
(d) H (e) None of these

**29.** Which of the following statement is true?
(a) F is an immediate neighbor of E (b) H sits third to the left of D (c) D faces inside
(d) A faces outside (e) None of these

**30.** How many persons face inside?
(a) One (b) Two (c) Three
(d) Four (e) Cannot be determined

**Directions (31-35);** Study the information and answer the following questions:
In a certain code language
'money is making profit' is written as 've jo qi mn'
'profit expected number' is written as 'lo ve pr'
'time hour is precious' is written as 'nj ku dq mn'
'making time is expected' is written as 'qi lo nj mn'

**31.** What is the code for "money"?
(a) lo (b) pr (c) qi
(d) ve (e) jo

**32.** What is the code for "precious"?
(a) ku (b) nj (c) dq
(d) mn (e) Either (a) or (c)

**33.** What is the code for "profit expected "?
(a) ve lo (b) pr lo (c) ve pr
(d) qi ve (e) None of these

**34.** What can be the code for "Making profit share"?
(a) qi ve mn (b) ve mn jo (c) ve qi zx
(d) qi zx lo (e) nj ve zx

**35.** What is the code for "number"?
(a) mn (b) pr (c) ku
(d) dq (e) jo

**Directions (36-40);** Study the information and answer the following questions:

Eight boxes numbered as Box 1, Box 2 and so on till Box 8 are placed one above another (not necessarily in the same order). They all are of different colors viz. Green, Blue, Red, White, Orange, Yellow, Black and Pink.

More than three boxes are placed between Box 4 and the one which is of Red color. No box is placed below Box 2 which is of White color. Box 4 is placed below the Red colored box. There are two boxes between White colored box and Box 8. Box 5 is placed immediately above Box 7 but neither of them is of Green color. Green colored box is placed immediately below the Red colored box. Box 6 is of Orange color and is not placed above Box 8. Pink colored box is placed immediately above Orange colored box. There is a gap of one box between Pink colored box and Black colored box. Neither Box 5 nor Box 7 is of Black color. Yellow colored box is placed below Blue colored box. Box 1 is placed above Box 3 and none of them is of Yellow color.

**36.** Which box is placed between Pink colored box and Black colored box?
(a) Box 8 (b) Box 5 (c) The Box which is of Green color
(d) The Box which is of Yellow color (e) None of these

**37.** Which box is placed at top?
(a) Box 1 (b) Box 5 (c) Box 3
(d) Box 6 (e) Cannot be determined

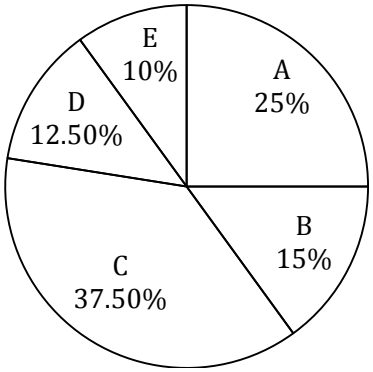
**38.** How many boxes are placed between Green colored box and Orange colored box?
(a) One (b) Two (c) Three
(d) More than three (e) None of these

**39.** What is the color of Box 3?
(a) Yellow (b) Green (c) Red
(d) Black (e) None of these

**40.** Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) Box 1 - Blue (b) Box 5 - Pink (c) Box 8 - Black
(d) Box 6 - Pink (e) Box 7 – Orange

## QUANTITATIVE APTITUDE

**Direction (41-45):** Study the pie chart given below & answer the questions.
Pie chart given below shows the percentage distribution of total no. of officers in five different company.
Total number of officers in all five company together = 5400




**NOTE-** Total employees in any company = Officers + Workers

**41.** If the ratio of number of officers to number of workers in company C and D is 3 : 5 and 3 : 7 respectively. Then find the difference between total number of workers in company C and D?
(a) 1800 (b) 1900 (c) 1620
(d) 1600 (e) 1850

**42.** If total no. of employees in company C is 3240 then number of workers in company C is what percent more/less than total number of officers in company B?
(a) 75% (b) 70% (c) 50%
(d) 60% (e) 40%

**43.** If no. of workers in company A is 20% more than no. of officers in A & in company E number of workers is 25% less than no. of officers in E then find ratio of no. of workers in company A to that in company E?
(a) 3 : 2 (b) 4 : 1 (c) 5 : 1
(d) 4 : 3 (e) 1 : 4

**44.** What is the average of total no. of officers is company A, B and E?
(a) 850 (b) 650 (c) 700
(d) 1200 (e) 900

**45.** If ratio of number of officers to total number of employees in company B is 1 : 3. Then total number of workers in company B is what percent of total number of officers in all the company together?
(a) 40% (b) 50% (c) 60%
(d) 30% (e) 45%

**46.** Ratio of upstream speed of a boat to speed of river current is 4 : 1. It covers 42 km in downstream in T hours and 24 km in upstream in (T – 1) hours. Find speed of boat in still water.
(a) 5 km/hr (b) 4 km/hr (c) 6 km/hr
(d) 7 km/hr (e) 8 km/hr

**47.** A is $33\frac{1}{3}\%$ more efficient than B. They together worked for 2 days and completed $29\frac{1}{6}\%$ of total work. Then B left and another person C joined whose efficiency is 20% less than efficiency of A. Find the time in which C alone will complete whole work.
(a) 10 days (b) 30 days (c) 20 days
(d) 14 days (e) 15 days

**48.** Ratio of length of 3 train A, B and C is 10 : 5 : 12. Train A completely crosses stationary train B in 15 sec and train A and C completely crosses each other moving in same direction in 50 sec. If speed of train A is 25 m/sec then find speed of train C in m/sec.
(a) 24 (b) 12 (c) 14
(d) 22 (e) 11

**49.** There are two container A and B. A contains mixture of milk and water in the ratio 3:Y and B contains 75 L of pure water only. 75 L of mixture from A is taken out and mixed in B so that final ratio of milk and water in the B is 3 : 7. Find value of Y.
(a) 7 (b) 5 (c) 1
(d) 2 (e) 4

**50.** In a bag there are 2 red balls, X green balls and 3 yellow balls. If two balls are taken out then its probability to be green is $\frac{2}{9}$. Find number of green balls in the bag.
(a) 8 (b) 4 (c) 5
(d) 6 (e) 7

**Directions (51-55):** In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(a) if $x>y$
(b) if $x\geq y$
(c) if $x<y$
(d) if $x\leq y$
(e) if $x = y$ or no relation can be established between x and y.

**51. I.** $6x^2 + 13x - 8 = 0$ **II.** $5y^2 - 8y - 21 = 0$

**52. I.** $7x^2 - 37x + 10 = 0$ **II.** $3y^2 - 23y + 14 = 0$

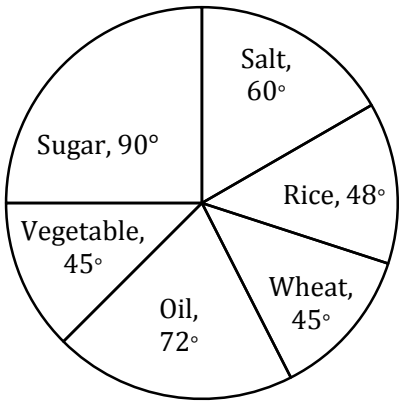
**53. I.** $5x^2 + 23x + 18 = 0$ **II.** $3y^2 + 4y + 1 = 0$

**54. I.** $15x^2 + 11x + 2 = 0$ **II.** $12y^2 + 37y + 28 = 0$

**55. I.** $3x + 7y = 18$ **II.** $9x - 2y = 8$

**Directions (56-60):** Study the pie chart given below & answer the questions.

Pie chart given below shows the expenditure of various items for a hotel in degree.




**56.** If expenditure of Hotel on Rice is Rs 24,480 then expenditure on Sugar and wheat together is how much more than expenditure on oil and salt together?
(a) Rs 1280 (b) Rs 1530 (c) Rs 1580
(d) Rs 1420 (e) Rs 1640

**57.** Total expenditure on Salt and Sugar together is what percent more/less than total expenditure on vegetable & wheat together?
(a) $66\frac{2}{3}\%$ (b) $33\frac{1}{3}\%$ (c) 50%
(d) 45% (e) $42\frac{1}{3}\%$

**58.** If the total expenditure on all item is given as Rs 1,80,000 and total rice is required by hotel is 480 kg. Then find price of Rice per kg(in Rs)?
(a) 60 (b) 40 (c) 45
(d) 50 (e) 55

**59.** If the total expenditure is 3 times the total saving of the hotel and total income of hotel is Rs 4,80,000. Then find the average expenditure on oil and rice?(income= expenditure + saving)
(a) Rs 50,000 (b) Rs 65,000 (c) Rs 60,000
(d) Rs 70,000 (e) Rs 72,000

60. What is the ratio of average expenditure on Sugar, Salt & Vegetable to average expenditure on Rice, Wheat & oil?
(a) 13 : 11 (b) 13 : 9 (c) 11 : 17
(d) 11 : 13 (e) 17 : 13

**Directions (61-65):** What will come at the place of question mark (?). Find approximate value.

**61.** $1819.98 \div 454.89 + \sqrt{441.01} + (?)^2 = \sqrt{5475.82}$
(a) 11 (b) 13 (c) 17
(d) 7 (e) 15

**62.** $\frac{839.825}{?} - 1219.91 = 19.81\% \text{ of } 800.21 - 1339.89$
(a) 31 (b) 27 (c) 21
(d) 42 (e) 39

**63.** 79.82% of 1349.82 + 38.12% of 449.89 – 281.01 = ?
(a) 970 (b) 830 (c) 810
(d) 910 (e) 840

**64.** $(511.79)^{\frac{1}{3}} \times \sqrt{483.83} + 52.021\% \text{ of } 549.99 - ? = 129.89 \times 2.81$
(a) 84 (b) 92 (c) 82
(d) 78 (e) 72

**65.** $(28.01)^2 - (31.82)^2 + (24.102)^2 - \sqrt{?} = 330$
(a) 49 (b) 36 (c) 64
(d) 25 (e) 16

**66.** Volume of a cylinder is equal to the volume of sphere. Circumference of a circle is 44 cm and radius of circle is 50% of radius of cylinder. If height of cylinder is equal to the radius of sphere then find the total surface area of cylinder.
(a) $144\pi\left(\sqrt{2}+3\right)$ (b) $144\pi\left(2+\sqrt{3}\right)$
(c) $165\pi\left(2+\sqrt{3}\right)$ (d) $196\pi\left(2+\sqrt{3}\right)$
(e) $196\pi\left(\sqrt{2}+3\right)$

**67.** Veer invested Rs. 275000 on S.I. at the rate of 7% p.a. for 2 years and Rs 'Y" on CI at the rate of 10% pa for 2 years. If total SI obtained in two years is equal to CI obtained only on second year then, find 'Y'.
(a) 3,50,000 (b) 3,00,000 (c) 4,00,000
(d) 2,50,000 (e) 4,50,000

**68.** Veer purchases 5 jeans and Y shirts whose marked price is in the ratio 9 : 7 at a discount of $11\frac{1}{9}\%$ and $14\frac{2}{7}\%$. Veer marked up jeans and T-shirt by 25% and $33\frac{1}{3}\%$ respectively on the price at which he bought them and sold them at new marked price. If total profit percent for him is $29\frac{6}{11}\%$ then find 'Y'.
(a) 8 (b) 6 (c) 7
(d) 12 (e) 10

**69.** Veer and Ayush entered into partnership with investment of Rs 16,000 and Rs 22,000 respectively. Veer invested for 8 months while Ayush invested for 6 months. If total profit in the business is Rs 13,000 then find difference in the share of profit of Veer and Ayush.
(a) Rs 300 (b) Rs 200 (c) Rs 400
(d) Rs 450 (e) Rs 500

**70.** A man travel some journey on car with speed 60 kmph and some on cycle with speed 4 kmph. In return journey he come in train with speed 20 kmph and take equal time in both side journey. Find the ratio of the distance travel by car, cycle and train.
(a) 8 : 2 : 11 (b) 3 : 2 : 5 (c) 2 : 1 : 3
(d) 6 : 1 : 7 (e) None of these

**Direction (71-75);** Study the table carefully and answer the following questions.

Table given below shows the total no. of student in six different college and percentage of student studying arts and commerce.

Total student in each college = Student studying arts, commerce & science.

| College | Total student | Percentage of student studying arts | Percentage of student studying commerce |
|---|---|---|---|
| X | 1200 | 15% | 25% |
| Y | 800 | 35% | 40% |
| Z | 1600 | 12% | 48% |
| A | 1000 | 44% | 16% |
| B | 600 | 20% | 35% |
| C | 2100 | 30% | 40% |

71. What is the difference between average of no. of student studying science in college X and Y and average of no. of student studying arts in college Z and A?
(a) 244 (b) 144 (c) 164
(d) 182 (e) 128

72. If ratio of number of males to number of females studying commerce in college Z & studying science in college A is 3 : 5 and 1 : 3 respectively then number of males studying commerce in college Z is what percent more/less than number of females studying science in college A?
(a) 4% (b) 24% (c) 12%
(d) 8% (e) 16%

**73.** What is ratio of total number of students studying arts in college X and number of students studying science in college B together to number of students studying science in college C?
(a) 2 : 5 (b) 4 : 7 (c) 3 : 5
(d) 5 : 7 (e) 2 : 3

**74.** Total number of commerce students studying in college Y and C together is what percent more/less than total number of arts students studying in college B and Y together?
(a) 130% (b) 190% (c) 210%
(d) 165% (e) 235%

**75.** What is the average of number of students studying commerce in college A and in college Y ?
(a) 160 (b) 180 (c) 210
(d) 260 (e) 240

**Directions (76 -80):** What will come in place of (?) in the following number series ?

**76.** 4.5, 19, 77, 309, 1237, ?
(a) 4959 (b) 4949 (c) 4969
(d) 4939 (e) 4929

**77.** 179, 197, 233, 287, ?, 449
(a) 359 (b) 361 (c) 363
(d) 354 (e) 355

**78.** 35, 143, 323, 575, ? 1295
(a) 899 (b) 675 (c) 783
(d) 840 (e) 961

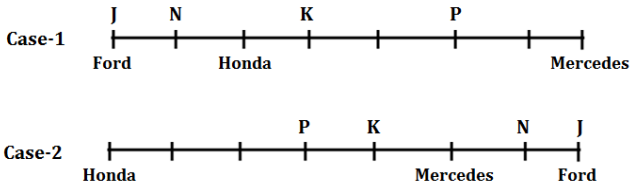
**79.** 990, 494, 246, 122, ?, 29
(a) 60 (b) 61 (c) 62
(d) 64 (e) 59

**80.** 190, 207, 194, 211, 198, ?
(a) 213 (b) 220 (c) 211
(d) 216 (e) 215

# Mock 06 : Solutions

## REASONING ABILITY

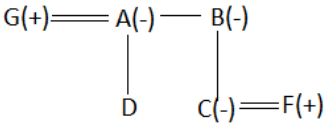
**Direction (1-5):** P is parking his car third to the right of the one who has Honda car. Mercedes car is parked second to the right of P. J and N are parking their car adjacent to each other. Neither J nor N has either Honda or Mercedes car. Neither J nor N park their car adjacent to P. Only one person parks his car between N and K. N does not have Ford car. The one who has Ford car parks his car at the extreme end of the line.
So, there are two possible cases----



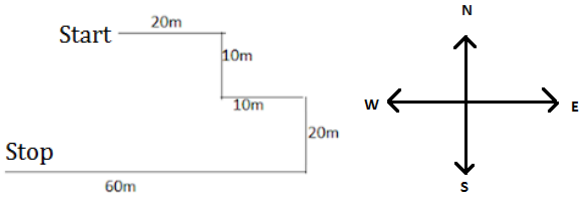

parks his car third to the right of the one who has Tata car. Neither J nor N has Tata car. Q does not have Mercedes car. This will eliminate Case-2 As no place is left for Q.
Now, Only two persons park their car between N and the one who has Audi car. Maruti car is parked on the immediate left of the M. L parks his car second to left of one who has Audi car. Final arrangement will be---


**1. (a); 2. (a); 3. (d);**
**4. (d); 5. (a);**

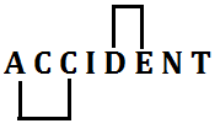
**6. (b);** Mother-in-law




**7. (e);** South-west




8. (c);




**Directions (9-10);**

9. (b);

10. (c); **L> J (175 cm) > N > M > K**

**Directions (11-15):**

**11. (c); 389** 859 247 851 725

**12. (a);** 938 985 **724** 185 572

**13. (e);** 893 **598** 472 518 257

**14. (b);** 936 983 722 **183** 570

**15. (d);** 389 589 247 158 **257**

**Directions(16-20):**

**16. (b);**

**17. (d);** TUJ KEF

**18. (b);**

**19. (d);**

**20. (e);**

**Directions (21-25):**

| **Code** | **#** | **%** | **$** | **@** | **&** |
|---|---|---|---|---|---|
| **Symbol** | **<** | **≤** | **≥** | **=** | **>** |

**21. (a);** A & D (True) B # E (False);

**22. (d);** J @ M (False) J # M (False);

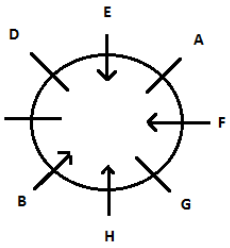
**23. (a);** S & W (True) S @ W (False);

**24. (b);** R & O (False) N & Q (True)

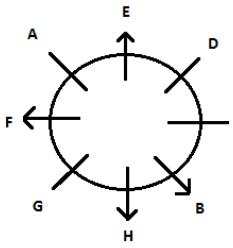
**25. (d);** G & K (False) H # K (False);

**Directions (26-30):** H sits opposite to E and both faces same direction. A is an immediate neighbor of E. D sits to the immediate right of E. D sits second to the left of B. G sits to the immediate left of F.G is not a neighbor of A. We get two possibilities –

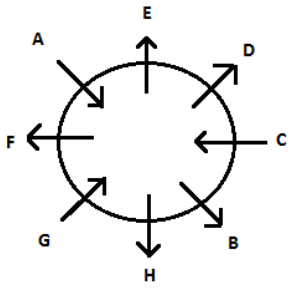
**Case 1**




**Case 2**




Now, immediate neighbors of C face same direction. Immediate neighbors of E face opposite direction. G and C face same direction as A. Not more than four people face inside. This will eliminate Case 1. So the final arrangement will be –




**26. (b); 27. (b); 28. (d);**
**29. (e); 30. (c);**

**Directions (31-35);** Codes are as follows:

| **Element** | **Code** |
|---|---|
| money | jo |
| making | qi |
| profit | ve |
| expected | lo |
| is | mn |
| number | pr |
| time | nj |
| hour/precious | ku/dq |

**31. (e); 32. (e); 33. (a);**
**34. (c); 35. (b);**

**Directions (36-40):** No box is placed below Box 2 which is of White color. There are two boxes between White colored box and Box 8. More than three boxes are placed between Box 4 and the one which is of Red color. Box 4 is placed below the Red colored box. Green colored box is placed immediately below the Red colored box. Box 5 is placed immediately above Box 7 but neither of them is of Green color. Box 6 is of Orange color and is not placed above Box 8. Pink colored box is placed immediately above Orange colored box. We have three possibilities –

| Case 1 | | Case 2 | | Case 3 | |
|---|---|---|---|---|---|
| **Box** | **Color** | **Box** | **Color** | **Box** | **Color** |
| Box 5 | | | Red | | Red |
| Box 7 | Red | | Green | | Green |
| | Green | Box 5 | | Box 5 | |
| | | Box 7 | | Box 7 | |
| Box 8 | Pink | Box 8 | Pink | Box 8 | |
| Box 6 | Orange | Box 6 | Orange | Box 4 | Pink |
| Box 4 | | Box 4 | | Box 6 | Orange |
| Box 2 | White | Box 2 | White | Box 2 | White |

Now, there is a gap of one box between Pink colored box and Black colored box. Neither Box 5 nor Box 7 is of Black color. This will eliminate Case 3. Yellow colored box is placed below Blue colored box. Now the arrangement will be -

| Case 1 | | Case 2 | |
|---|---|---|---|
| **Box** | **Color** | **Box** | **Color** |
| Box 5 | Blue | | Red |
| Box 7 | Red | | Green |
| | Green | Box 5 | Blue |
| | Yellow | Box 7 | Yellow |
| Box 8 | Pink | Box 8 | Pink |
| Box 6 | Orange | Box 6 | Orange |
| Box 4 | Black | Box 4 | Black |
| Box 2 | White | Box 2 | White |

Now, Box 1 is placed above Box 3 and none of them is of Yellow color. This will eliminate Case 1. So the final arrangement will be –

| Box | Color |
|---|---|
| Box 1 | Red |
| Box 3 | Green |
| Box 5 | Blue |
| Box 7 | Yellow |
| Box 8 | Pink |
| Box 6 | Orange |
| Box 4 | Black |
| Box 2 | White |

**36. (e); 37. (a); 38. (c);**
**39. (b); 40. (d);**



## QUANTITATIVE APTITUDE

**41. (a);** Total workers in company C
$= 5400 \times \frac{37.5}{100} \times \frac{5}{3} = 3375$
Total workers in company D
$= 5400 \times \frac{12.5}{100} \times \frac{7}{3} = 1575$
Required difference = 3375 – 1575 = 1800

**42. (c);** Total workers in company C
= 3240 – 2025 = 1215
Total officers in company B $= 5400 \times \frac{15}{100} = 810$
Required percentage $= \frac{1215-810}{810} \times 100 = 50\%$

**43. (b);** No. of workers in company A
$= \frac{120}{100} \times \frac{25}{100} \times 5400 = 1620$
No. of workers in company E
$= \frac{75}{100} \times \frac{10}{100} \times 5400 = 405$
Required ratio $= \frac{1620}{405} = 4 : 1$

**44. (e);** Required average $= \frac{1}{3}\left[\frac{25+15+10}{100}\right] \times 5400 = 900$

**45. (d);** Total employees in company B
$= 5400 \times \frac{15}{100} \times \frac{3}{1} = 2430$
Total workers in company B
$= 2430 - 5400 \times \frac{15}{100} = 1620$
Required percentage $= \frac{1620}{5400} \times 100 = 30\%$

**46. (a);** Let speed of boat in still water = $x$ km/hr
and speed of water current = $y$ km/hr
So,
$\frac{x-y}{y} = \frac{4}{1}$
$x - y = 4y$
$x = 5y$
$\frac{x}{y} = \frac{5}{1}$
So, $\frac{42}{5m+m} = T$
$6mT = 42$
$mT = 7$
$\frac{24}{4m} = (T - 1)$
$24 = 4mT - 4m \Rightarrow 24 = 28 - 4m$
$m = 1$
peed of boat in still water = 5 × m km/hr = 5 km/hr

**47. (e);** Ratio of efficiency of A to B = 4 : 3
Ratio of efficiency of A : C = 5 : 4
Ratio of efficiency of

| B | : | A | : | C |
|---|---|---|---|---|
| 3 | : | 4 | | |
| | | 5 | : | 4 |
| 15 | : | 20 | : | 16 |

Let A, B and C does $20x$, $15x$ and $16x$ unit of work on each day.
Then in 2 day work completed by A and B = $35x \times 2 = 70x$
$29\frac{1}{6}\%\ of\ total\ work = 70x$
Total work = $\frac{70x}{\frac{175}{6}} \times 100$
$= \frac{70x \times 6}{175} \times 100 = 240x$
Time taken by C alone to finish whole work
$= \frac{240x}{16x} = 15$ days

**48. (c);** Let length of train A, B and C be $10x$, $5x$ and $12x$ respectively
So, $\frac{10x+5x}{25} = 15$
$x = 25$
Let speed of train C be $y$ m/sec
$\frac{10x+12x}{25-y} = 50$
$\Rightarrow 22x = 50 \times 25 - 50y$
$y = 14$ m/sec

**49. (d);** Water removed from A = $\frac{Y}{3+Y} \times 75$
Milk removed from A = $\frac{3}{3+Y} \times 75$
Now, $\frac{\frac{3}{3+Y}\times 75}{75+\frac{Y}{3+Y}\times 75} = \frac{3}{7}$
$\frac{75\times 7}{3+y} = 75 + \frac{75y}{3+y}$
$\frac{75\times 7}{3+Y} - \frac{75Y}{3+Y} = 75$
$75 \times 7 - 75y = 75 \times 3 + 75y$
$75 \times 4 = 150y + y$
$y = 2$

**50. (c);** Probability of 2 balls selected are green
$= \frac{{}^{x}C_2}{5+{}^{x}C_2} = \frac{2}{9}$
$\frac{\frac{x!}{2!(x-2)!}}{\frac{(x+5)!}{2!(x+3)!}} = \frac{2}{9}$
$\frac{x(x-1)}{(x+5)(x+4)} = \frac{2}{9}$
$9x^2 - 9x = 2x^2 + 18x + 40$
$7x^2 - 27x - 40 = 0$
$7x^2 - 35x + 8x - 40 = 0$
$7x(x-5) + 8(x-5) = 0$
$x = \frac{-8}{7}, 5$
As number of balls can't be in negative. So, x=5

**51. (e);** **I.** $6x^2 + 13x - 8 = 0$
$6x^2 + 16x - 3x - 8 = 0$
$2x(3x + 8) - 1(3x + 8) = 0$
$x = -\frac{8}{3}\ or\ \frac{1}{2}$
**II.** $5y^2 - 8y - 21 = 0$
$5y^2 - 15y + 7y - 21 = 0$
$5y(y - 3) + 7(y - 3) = 0$
$y = 3, -\frac{7}{5}$
No relation

**52. (e);** **I.** $7x^2 - 37x + 10 = 0$
$7x^2 - 35x - 2x + 10 = 0$
$7x(x - 5) - 2(x - 5) = 0$
$x = 5, \frac{2}{7}$
**II.** $3y^2 - 23y + 14 = 0$
$3y^2 - 21y - 2y + 14 = 0$
$3y(y - 7) - 2(y - 7) = 0$
$y = 7, \frac{2}{3}$
No relation

**53. (d);** **I.** $5x^2 + 23x + 18 = 0$
$\Rightarrow 5x^2 + 5x + 18x + 18 = 0$
$\Rightarrow (x + 1)(5x + 18) = 0$
$\Rightarrow x = -1, -\frac{18}{5}$
**II.** $3y^2 + 4y + 1 = 0$
$\Rightarrow 3y^2 + 3y + y + 1 = 0$
$\Rightarrow (y + 1)(3y + 1) = 0$
$\Rightarrow y = -1, -\frac{1}{3}$
$y \geq x$

**54. (a);** **I.** $15x^2 + 11x + 2 = 0$
$\Rightarrow 15x^2 + 5x + 6x + 2 = 0$
$\Rightarrow 5x(3x + 1) + 2(3x + 1) = 0$
$\Rightarrow x = -\frac{1}{3}, -\frac{2}{5}$
**II.** $12y^2 + 37y + 28 = 0$
$\Rightarrow 12y^2 + 21y + 16y + 28 = 0$
$\Rightarrow 3y(4y + 7) + 4(4y + 7) = 0$
$\Rightarrow y = -\frac{4}{3}, -\frac{7}{4}$
$x > y$

**55. (c);** (i) $3x + 7y = 18$
(ii) $9x - 2y = 8$
Solving (i) and (ii);
$x = 4/3, y = 2$
$y > x$

**56. (b);** Required difference
$= [(90 + 45) - (72 + 60)] \times \frac{24480}{48} = \text{Rs } 1530$

**57. (a);** Required percentage = $\frac{(60+90)-(45+45)}{(45+45)} \times 100$
$= \frac{60}{90} \times 100 = 66\frac{2}{3}\%$

**58. (d);** Expenditure of Hotel on Rice
$= \frac{48}{360} \times 1{,}80{,}000 = \text{Rs } 24{,}000$
Price of rice per kg
$= \frac{24000}{480} = 50$ Rs/kg

**59. (c);** Let the total saving be Rs x
∴ total expenditure = Rs 3x
Atq,
4x = Rs 4,80,000
∴ x = Rs 1,20,000
∴ expenditure = Rs 3,60,000
∴ Required average = $\frac{(48+72)}{2\times 360} \times 3{,}60{,}000$
= Rs 60,000

**60. (a);** Required ratio $= \frac{\frac{90+60+45}{3}}{\frac{48+45+72}{3}} = \frac{195}{165} = 13 : 11$

**61. (d);** $\frac{1820}{455} + \sqrt{441} + (?)^2 \simeq \sqrt{5476}$

$4 + 21 + (?)^2 = 74$

$(?)^2 = 49$

$? = 7$

**62. (c);** $\frac{840}{?} - 1220 \simeq \frac{20}{100} \times 800 - 1340$

$\frac{840}{?} = 160 + 1220 - 1340$

$? = \frac{840}{40} = 21$

**63. (a);** $\frac{80}{100} \times 1350 + \frac{38}{100} \times 450 - 281 \simeq ?$

$1080 + 171 - 281 = ?$

$? = 970$

**64. (e);** $(512)^{\frac{1}{3}} \times \sqrt{484} + \frac{52}{100} \times 550 - ? = 130 \times 3$

$? = 8 \times 22 + 286 - 390$

$? = 72$

**65. (b);** $(28)^2 - (32)^2 + (24)^2 - \sqrt{?} \simeq 330$

$784 - 1024 + 576 - 330 = \sqrt{?}$

$? = 36$

**66. (d);** Let radius of cylinder and sphere be r and R respectively and height of cylinder be $h$

So,

$\pi r^2 h = \frac{4}{3}\pi R^3$

But $h = R$

$r^2 = \frac{4}{3}R^2$

Radius of circle $= \frac{44}{2\pi} \Rightarrow \frac{44}{2 \times \frac{22}{7}} = 7\text{cm}$

Radius of cylinder = 14 cm

$R^2 \times \frac{4}{3} = 196$

$R = 7\sqrt{3}$

Total surface area of cylinder = $2\pi r\ (h + r)$

$= 2\pi \times 14\ (14 + 7\sqrt{3})$

$= 2 \times \pi \times 14 \times 7\ (2 + \sqrt{3})$

$= 196\pi\ (2 + \sqrt{3})$;

**67. (a);** I for 2 years $= \frac{275000 \times 7 \times 2}{100} = 38500$

This interest is equal to C.I. obtained only in second year.

Equivalent C.I. for 2 years at 10% pa $= 10 + 10 + \frac{10 \times 10}{100} = 21\%$

C.I. in first year will be 10% of Y

So remaining C.I. will be obtained in second year

= (21% – 10%) of Y

11% of Y = 38500

Y = 3,50,000

**68. (a);** Let marked price of Jeans and shirts be $9x$ and $7x$ respectively

Cost price of jeans and shirt for Veer $= \frac{8}{9} \times 9x$ and $\frac{6}{7} \times 7x$ respectively

Total cost price for Veer $= 8x \times 5 + 6x \times Y$

$= 40x + 6xY$

New marked price of jeans and shirt is $8x \times \frac{5}{4}$ and $6x \times \frac{4}{3}$ respectively

Total selling price $= 10x \times 5 + 8x \times Y$

$= 50x + 8xY$

So, profit $= 50x + 8xY - 40x - 6xY$

$= 10x + 2xy$

$\frac{10x+2xy}{40x+6xy} = \frac{325}{11 \times 100}$

$\frac{10x+2xy}{40x+6xy} = \frac{13}{44}$

$440x + 88xy = 520x + 78xy$

$10xy = 80x$

$y = 8$

**69. (b);**

| | | |
|---|---|---|
| Veer | : | Ayush |
| $16000 \times 8$ | : | $22000 \times 6$ |
| 32 | : | 33 |

Difference in profit share $= \frac{1}{65} \times 13000 = \text{Rs. } 200$

**70. (d);** Let one side time taken = t hour

Time taken by car = x hour

ATQ,

$60x + 4(t - x) = 20 \times t$

$\Rightarrow x = \frac{2}{7}t$

Let t = 7y = time taken on train

x = 2y = time taken on car

t – x = 5y = time taken on cycle.

Required Ratio →

| | | | | |
|---|---|---|---|---|
| $60 \times 2y$ | : | $4 \times 5y$ | : | $20 \times 7y$ |
| 6 | : | 1 | : | 7 |

**71. (b);** Average no. of student studying science in college X & Y

$= \frac{1}{2}\left[1200 \times \frac{60}{100} + 800 \times \frac{25}{100}\right]$

$= \frac{920}{2} = 460$

Average no. of student studying arts in college Z & A

$= \frac{1}{2}\left[1600 \times \frac{12}{100} + 1000 \times \frac{44}{100}\right]$

$= \frac{632}{2} = 316$

Required difference = 460 – 316 = 144

**72. (a);** Males studying commerce in college Z

$= 1600 \times \frac{48}{100} \times \frac{3}{8} = 288$

Females studying science in college A

$= 1000 \times \frac{40}{100} \times \frac{3}{4} = 300$

Required percentage $= \frac{300-288}{300} \times 100$

$= \frac{1200}{300} = 4\%$

**73. (d);** Total student studying arts in college X & science in college B together

$= 1200 \times \frac{15}{100} + 600 \times \frac{45}{100}$

$= 180 + 270 = 450$

tudent studying science in college C

$= 2100 \times \frac{30}{100} = 630$

Required ratio $= \frac{450}{630} = 5 : 7$

**74. (b);** Total commerce student studying in college Y & C together

$= 800 \times \frac{40}{100} + 2100 \times \frac{40}{100} = 1160$

Total arts student studying in college B & Y together

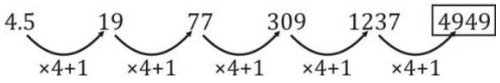
$= 600 \times \frac{20}{100} + 800 \times \frac{35}{100} = 400$

Required percentage $= \frac{1160-400}{400} \times 100 = 190\%$

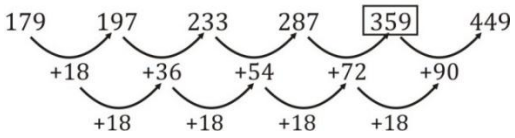
**75. (e);** Required average $= \frac{1}{2}\left[1000 \times \frac{16}{100} + 800 \times \frac{40}{100}\right]$

$= 240$

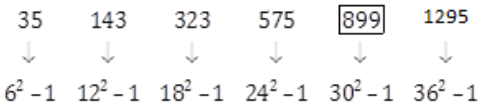
**76. (b);**



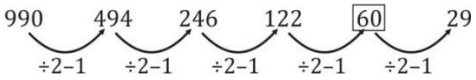

**77. (a);**



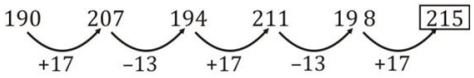

**78. (a);**




**79. (a);**




**80. (e);**



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## REASONING ABILITY

**Direction (1-5):** Study the following information carefully to answer the given questions.

Eight friends P, Q, R, S, T, U, V, and W are sitting around a square table in such a way that four of them sit at four corners while four sits in the middle of each of the four sides. The one who sit at the four corners face the center while those who sit in the middle of the sides face outside (Opposite to the center). V sits second to the right of R. R sits in the middle of one of the sides of table. Only two people sit between V and Q. S is one of the immediate neighbors of Q. T sits second to the left of S. P sits second to the left of U. V is not an immediate neighbour of U.

**1.** How many people sit between R and T when counted from the right of R?
(a) None (b) Four (c) One
(d) Three (e) Two

**2.** Which of the following is true regarding P?
(a) Both T and R are immediate neighbors of P
(b) Only three people sit between P and S.
(c) P sits at middle of one of the sides
(d) W sits second to the left of P
(e) None of the given options is true.

**3.** What is the position of V with respect to Q?
(a) Second to the left
(b) Third to the left
(c) Second to the right
(d) Fifth to the right
(e) Fifth to the left.

**4.** Four of the following five are alike in a certain way and so form a group. What is the one that does not belong to that group?
(a) Q (b) T (c) S
(d) R (e) V

**5.** Who sits second to the left of W?
(a) T (b) U (c) V
(d) S (e) Q

**Directions (6-10):** Study the following information carefully and answer the questions given below:
A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.
Input: eliminate on 2 9 found 5 some 6 honest 4
Step I : some 4 eliminate on 2 9 found 5 6 honest
Step II : on 2 some 4 eliminate 9 found 5 6 honest
Step III: honest 6 on 2 some 4 eliminate 9 found 5
Step IV : found 5 honest 6 on 2 some 4 eliminate 9
Step V : eliminate 9 found 5 honest 6 on 2 some 4

Step V is the last step of the above arrangement.
As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.
**Input:** 6 proud hot 9 extreme following 4 rush 7 5 splash3

**6.** Which of the following is seventh from the right end in Step III?
(a) splash (b) 6 (c) following
(d) 7 (e) None of these

**7.** How many steps will be required to complete the given arrangement ?
(a)five (b)six (c)seven
(d) eight (e)None of these

**8.** What is the position of '9' in the second last step?
(a)Third from the right
(b)Fourth from the right
(c)Fifth from the left
(d)Second from the left end
(e)None of these

**9.** Which of the following is fifth to right of 'proud' in Step III ?
(a) hot (b) 4 (c) rush
(d) 6 (e) None of these

**10.** What is the position of ' hot' in the last step?
(a) Fifth from the right end
(b) Fifth from the left end
(c) Eight from the left end
(d) Ninth from the right end
(e) None of these

**Directions (11-15):** Study the following information carefully and answer the questions given below:
Ten persons F, G, H, J, P, S, T, V, U and R are living in a five storey building such as lowermost floor is 1, above it is numbered 2 and so on till topmost floor which is numbered 5. Each of the floor has 2 flats in it as flat-1 and flat-2. Flat-1 of floor 2 is immediately above the flat-1 of floor 1 and immediately below the flat-1 of floor 3. Odd numbered flats

are in the west of even numbered flats. H lives on floor 4 and F lives to the east of H. There are two floors between floors of F and P. There is a gap of two floors between J and V, who does not live on top floor. S lives above U but not on flat-1. G and T lives on same floor. J does not live on same flat number as of P.G lives in same flat number as of J. R lives below G but not with V.

**11.** Who among the following lives on flat 1 of floor 3rd?
(a)S (b)J (c)G
(d)U (e)R

**12.** Who among the following lives on same floor as P?
(a)V (b)T (c)F
(d)R (e)G

**13.** Who among the following lives of Floor no. 2?
(a)U (b)G (c)S
(d)J (e)R

**14.** Four of the following five are alike in some way. Who does not belong to the group?
(a)S (b)G (c)F
(d)T (e)U

**15.** On which of the following flat and floor number respectively does T lives?
(a) 2,4 (b) 1,1 (c) 2,3
(d) 2,2 (e) 1,5

Directions (16-20): In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.
Mark answer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**16.** **Statements:** $K < L \leq U = V > S$; $L = N < J$; $V \leq T$
**Conclusions:**
**I.** $K \leq T$
**II.** $J > S$

**17.** **Statements:** $C \geq D = N < S \geq V = A$; $D > U = J$
**Conclusions:**
**I.** $A > U$
**II.** $J < S$

**18.** **Statements:** $A > B \geq C = D > E$; $P = O < D$; $B < F$
**Conclusions:**
**I.** $F > E$
**II.** $P < A$

**19.** **Statements:** $E = F \leq G = H \geq I = K \geq J$
**Conclusions:**
**I.** $G > J$
**II.** $H = J$

**20.** **Statements:** $W < X \leq Y = Z > B$; $Y < C$; $A > X$
**Conclusions:**
**I.** $A > C$
**II.** $W < B$

**Directions (21-25):** Study the following information carefully to answer the given questions.

Twelve friends are sitting in two parallel rows containing six people each such that they are equidistant from each other. In row 1: A, B, C, D, E and F are seated and all of them are facing South. In row 2: P, Q, R, S, T and U are seated and all of them are facing North. Therefore, in the given seating arrangement, each member seated in a row faces another member of the other row. D sits third to the right of B. E does not face the immediate neighbour of S. Neither Q nor U sits at an extreme end of the line. Two people sit between Q and U. The immediate neighbour of Q faces the person who sits third to the left of A. The one who faces B sits second to the right of T. C and E are immediate neighbors. R sits second to the left of P. Either D or B sits at an extreme end of the line.

**21.** Who amongst the following sit at the extreme ends of the rows?
(a) R, E (b) B, P (c) B, E
(d) P, R (e) A, S

**22.** Who amongst the following faces D?
(a) A (b) P (c) S
(d) R (e) None of the Above

**23.** How many persons are seated between F and B?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**24.** A is related to P in the same way as D is related to Q based on the given arrangement. Which of the following is E related to, following the same pattern?
(a) A (b) S (c) R
(d) B (e) Cannot be determined

**25.** Four of the following five are alike in a certain way based on the given arrangement and so form a group. Which is the one that does not belong to that group?
(a) R, F (b) B, Q (c) Q, E
(d) P, R (e) A, U

**26.** If it is possible to form only one such number with the 3rd, the 6th and the 7th digits of the number 7394261 which is the perfect square of a two-digit odd number, which of the following will be the first digit of that two digit odd number?
(a) 9
(b) 3
(c) 5
(d) No such number can be formed
(e) More than one such number can be formed

**27.** How many such pairs of digits are there in the number 539816 each of which has as many digits between them as in the number series, when the digits are arranged in descending order within the number?
(a) None (b) One (c) Two
(d) Three (e) More than three

**Directions (28-30):** In each of the questions below. Some statements are given followed by conclusions/group of conclusions. You have to assume all the statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically does not follows from the information given in the statements.

**28.** **Statements:** Some coffee is tea
All coffee is milk
No coffee is water
**Conclusions**
(a)Some milk is tea
(b)Some milk are not water
(c)No tea is water
(d)Some tea are not water
(e)All follows

**29.** **Statements:** Some bed are table
All table are fan
Some table are chair
**Conclusions**
(a)Some bed are chair is a possibility
(b)Some fan are chair
(c)Some bed are fan
(d)Some table are not fan is a possibility
(e) None follows

**30.** **Statements:** Some metro are village
No metro is city
All city are capital
**Conclusions**
(a)Some capital are not metro
(b)Some village are not city
(c)Some capital can be metro
(d)No city is village
(e)Some capital can be village

**Directions (31-35):** Study the following information carefully to answer the given questions.

There are seven friends A, B, C, D, E, F and H travels in three different Cities viz. Goa, Shimla and Kochi with their cars. At least two friends travel in one City. All of them have different cars viz. Maruti, Honda, Hyundai, Audi, BMW, Renault and Mahindra (but not necessarily in the same order).

D travels to Shimla only with the one who has Mahindra car. B who has Audi travels to Goa with A who does not have Hyundai car. The one who has Honda travels to Kochi. E does not travel to Kochi. F has BMW. D does not have Maruti. The one who has Hyundai does not travel to Shimla. The one who has BMW does not travel to Goa. C travels with the one who has Maruti.

**31.** Who among the following has Hyundai Car?
(a) D (b) E (c) C
(d) H (e) Cannot be determined

**32.** Who among the following travels with C?
(a) E
(b) F
(c) The one who has Renault
(d) The one who has Audi
(e) H

**33.** Who among the following goes to Kochi?
(a) The one who has Maruti
(b) F
(c) The one who has Hyundai
(d) H
(e) Both (b) and (d)

**34.** Which of the following statement is true?
(a) H has Mahindra car
(b) F travels to Shimla
(c) The one who has Maruti travels with E
(d) The one who has Hyundai travels with B
(e) None of these

**35.** Which car does H has?
(a) Maruti (b) Honda (c) Hyundai
(d) Mahindra (e) Renault

**36.** Pointing to a woman, Rajveer said, "She is the only daughter of my grandfather's only child". How is the Woman related to Rajveer?
(a) Daughter (b) Niece (c) Sister
(d) Data inadequate (e) None of these

**37.** In a certain code 'PLANT' is written as '$@2*©' and 'YIELD' is written as 'β64@%'. How is 'DELAY' written in that code?
(a) β4*2% (b) β4@2% (c) %42@β
(d) %4@2β (e) None of these

**38.** D said "A's father is the only brother of my sister's son." How is A's father related to D?
(a) Cousin (b) Nephew (c) Aunt
(d) Data Inadequate (e) None of these

**Directions (39-40):** Study the information carefully and answer the question given below.
A, B, C, D and E are five friends sitting in a hall in the following manner. C is equidistant from A and B. The distance between C and D is 6m and C is south to D. E is to the east of D. A and B are sitting in a straight line such that A is to the west of B. Distance between A and B is 16m and distance between D and E is 12m.

**39.** What is the distance between C and E?
(a) $6\sqrt{3}$ (b) $6\sqrt{5}$ (c) $3\sqrt{3}$
(d) $7\sqrt{5}$ (e) None of these.

**40.** B is in which direction with respect to D?
(a) North-east (b) South east (c) North west
(d) South west (e) None of these

## QUANTITATIVE APTITUDE

**Directions (41-45):** Given table shows total Population in five different cities, ratio of male to female population and percentage of literate population in these cities.
Answer the following questions based on given data.

| City | Total Population | Male : Female | Percentage of Literate Population |
|---|---|---|---|
| A | 12000 | 2 : 3 | 25% |
| B | 8000 | 1 : 1 | 30% |
| C | 5000 | 3 : 2 | 40% |
| D | 7000 | 3 : 4 | 50% |
| E | 4500 | 1 : 2 | 20% |

**41.** In city B, 20% of the literate population are female, then find the ratio of number of literate male to the number of illiterate female in that city?
(a) 6 : 11 (b) 7 : 11 (c) 3 : 7
(d) 5 : 11 (e) 3 : 8

**42.** Total number of males in city D & E together is what percent more/less than total number of females in city B & C together?
(a) 40% (b) 30% (c) 20%
(d) 35% (e) 25%

**43.** If 25% of illiterates in city A died due to alcohol consumption, in which half were females. Then number of illiterate males who died due to alcohol consumption in city A is what percent of number of females in city B?
(a) $37\frac{1}{7}\%$ (b) $28\frac{1}{8}\%$ (c) $33\frac{1}{3}\%$
(d) 28% (e) $21\frac{1}{3}\%$

**44.** Find the ratio of total number of literate population in city A and E together to total number of illiterate population in city B & D together?
(a) 3 : 5 (b) 4 : 7 (c) 2 : 7
(d) 3 : 7 (e) 5 : 7

**45.** If in city C, 45% of illiterate population is females. Then number of male who are illiterate in city C is how much more/less than number of females in city E?
(a) 1400 (b) 1300 (c) 1350
(d) 1450 (e) 1250

**Direction (46 – 50):** What will come in the place of question (?) mark in the following number series?

**46.** 140, 152, 158, 164, 173, ?
(a) 187 (b) 181 (c) 191
(d) 201 (e) 198

**47.** ?, 92, 109, 135, 172, 222
(a) 82 (b) 87 (c) 73
(d) 69 (e) 78

**48.** 1120, 1258, 1406, 1574, 1782, ?
(a) 1980 (b) 2050 (c) 2070
(d) 1970 (e) 2140

**49.** 96, 48, 72, 180, ?, 2835
(a) 750 (b) 720 (c) 680
(d) 630 (e) 570

**50.** 3374, 1686, 842, 420, ?, 103.5
(a) 206 (b) 209 (c) 207
(d) 208 (e) 211

**51.** Arun and Rahul started working together & complete a work in 12 days. If the efficiency of Arun increases by 40% and the efficiency of Rahul decreases by 20% then they completed the same work in 10 days. Find the time in which Rahul can complete the same work alone?
(a) 30 days (b) 25 days (c) 35 days
(d) 36 days (e) 40 days

**52.** Difference between CI & SI for two years on a certain sum is given as Rs 120 & the ratio of CI for two years on that sum to the value of sum is 24 : 25. Find the SI on the same sum for three years at the same rate of interest?

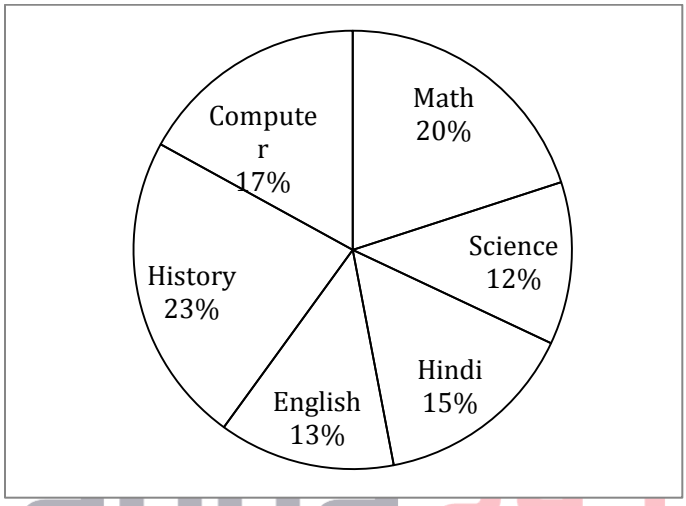
(a) Rs 940 (b) Rs 720 (c) Rs 900
(d) Rs 850 (e) Rs 800

**53.** There are two cars P & Q which are x km apart from each other. Car P & Q start moving towards each other at speed of 20 km/hr & 40 km/hr respectively in such a way that in first hour P moves & Q does not move, in 2nd hour only Q moves & P does not move & this continues till they meet. Find value of x, if they meet after $8\frac{1}{2}$ hours.
(a) 250 km (b) 280 km (c) 320 km
(d) 350 km (e) 300 km

**54.** A shopkeeper gives a discount of 20% on marked price of article A and C.P. of another article B is 20% more than selling price of article A. If shopkeeper sold article B at 15% profit & S.P. of article B is Rs 1216 more than SP of article A. Then find M.P of article A?
(a) Rs 3000 (b) Rs 3500 (c) Rs 4500
(d) Rs 3200 (e) Rs 4000

**55.** Three partners A, B and C invested their amounts in ratio of 3 : 5 : 7. At the end of four months, A invests some amount such that, his total investment will be equal to C's initial investment. If C's share in profit is Rs 3150 then what will be total annual profit?
(a) Rs 8150 (b) Rs 7950 (c) Rs 8000
(d) Rs 7500 (e) Rs 8900

**Directions (56 – 60):** Study the following pie chart carefully and answer the questions given below.
A student scored 70% of the total marks in an exam. Percentage distribution of marks scored by the student in various subjects with respect to total marks obtained.
Total Marks Obtained = 2100




**56.** Total marks obtained in Math, Science and English together are what percent of the total marks ?
(a) 31.5% (b) 25% (c) 36.5%
(d) 18% (e) 22.2%

**57.** Marks obtained in Computer and English together is what percent more or less than marks obtained in Hindi and Science together?
(a) 16% (b) $33\frac{1}{3}\%$ (c) $11\frac{1}{9}\%$
(d) $9\frac{1}{11}\%$ (e) 22%

**58.** If the maximum marks for Math is 40% more than maximum marks for Hindi and rest subject has equal maximum marks which is 20% of total maximum marks, then find maximum marks for math and history together is how much more or less than marks obtained in Computer and Science together?
(a) 339 (b) 341 (c) 351
(d) 383 (e) 345

**59.** What is the ratio between average marks obtained in Computer and Hindi to average marks obtained in History and English?
(a) 8 : 9 (b) 7 : 8 (c) 8 : 11
(d) 5 : 7 (e) 9 : 11

**60.** If the maximum marks is increased by 40% and the marks obtained by students remains same and student will pass if student gets 55% percent of the maximum marks then find the student fails by how many marks?
(a) 270 (b) 190 (c) 320
(d) 230 (e) 210

**Directions (61-65):** In the given questions, two quantities are given, one as Quantity I and another as Quantity II. You have to determine relationship between two quantities and choose the appropriate option

**61. Quantity I:** The total profit
On selling 18 articles whose cost price is 25% less than the mark price and a 15% discount is given on each article while selling price of each article is Rs 34.

**Quantity II:** 52 Rs.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**62. Quantity I:** Find the present age of Satish.
Satish is 3 years younger than Ayush. Ratio of Ayush's age 5 year ago to Satish's age 4 year hence is 3 : 4.
**Quantity II:** 12 years
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**63. Quantity I:** 36
**Quantity II:**
In how many different ways can the letters of the word 'DETAIL' be arranged such that the vowels must occupy only the odd positions?
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**64. Quantity I:** . Find the original number.
A two-digit number, 20% more than the number obtained after reversing its digits.
**Quantity II:** Find x.
$x^2 - 55x + 54 = 0$
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**65. Quantity I:** Find the area of the circular Path. (in $cm^2$)
Area of a circular park is 5544 $m^2$. A 7-meter-wide circular path is built around it.
**Quantity II:** Find area of rectangle.( in $cm^2$)
Whose length is 77 cm and breadth is 26 cm.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or no relation

**Directions (66-70):** Simplify the following questions and find the value of question mark (?).

**66.** $14\frac{1}{11} + 16\frac{3}{11} + 14\frac{4}{121} + 12\frac{3}{11} = ?$
(a) $59\frac{54}{121}$ (b) $39\frac{23}{121}$ (c) $61\frac{82}{99}$
(d) $56\frac{81}{121}$ (e) $57\frac{81}{121}$

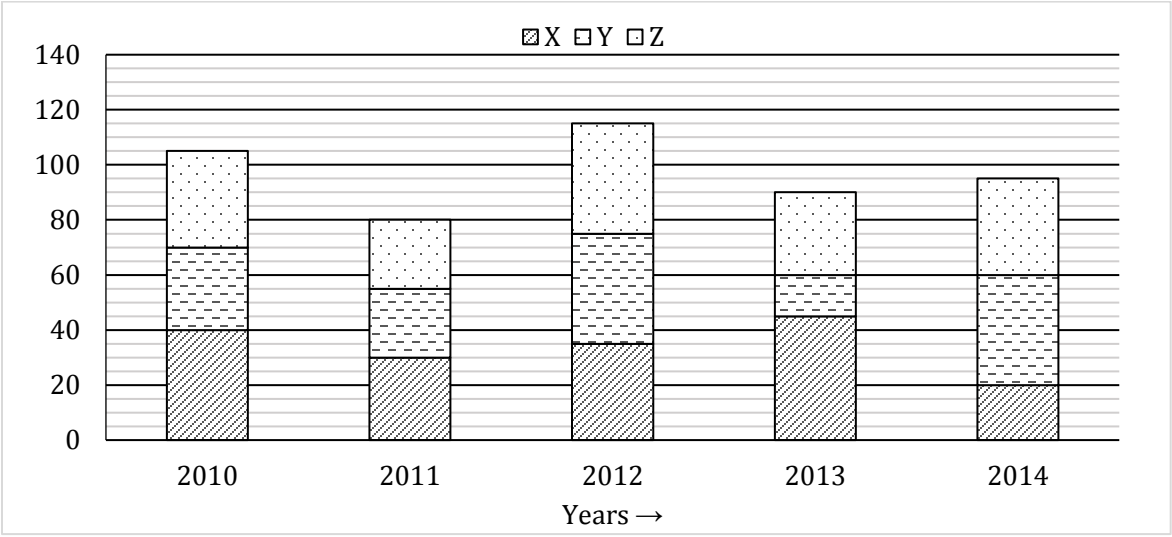
**67.** $99 \times 41 + 46 \times 72 - 49 \times 69 = ?$
(a) 3210 (b) 3381 (c) 3990
(d) 4059 (e) 4168

**68.** 16.5% of 1700 – 13.8% of 1750 = ?
(a) 39 (b) 33 (c) 29
(d) 43 (e) 49

**69.** $348 \div 29 \times 15 + 156 = (?)^3 + 120$
(a) 12 (b) 6 (c) 35
(d) 9 (e) 18

**70.** 76% of 1285 = 35% of 1256 + ?
(a) 543 (b) 537 (c) 547
(d) 533 (e) 621

**Directions (71-75):** Study the following bar-graph carefully to answer the following questions.
Bar-graph shows number of books sold by three shopkeepers i.e. X, Y and Z in thousands in 5 different years.



**71.** No. of books sold by Shopkeeper X in year 2010 and 2012 together is what percent more/less than total no. of books sold by shopkeeper Z in year 2011 and 2014 together?
(a) 40% (b) 30% (c) 25%
(d) 35% (e) 20%

**72.** No. of books sold by shopkeeper Y in 2010 is 20% more than no. of books sold in 2009 and no. of books sold by shopkeeper Z in 2009 is 25% less than that of sold in 2010. Then find no. of total books sold by Y and Z in 2009?
(a) 52,000 (b) 54,150 (c) 52,250
(d) 51,250 (e) 50,750

**73.** What is difference between total no. of books sold by shopkeeper Y in year 2012, 2013 and 2014 together and by shopkeeper Z in year 2010, 2011 & 2012 together?
(a) 5000 (b) 7000 (c) 4500
(d) 6000 (e) 5500

**74.** Ratio of total no. of books sold in year 2011 to that sold in 2015 is 2 : 3 and no. of books sold by Y in 2015 is 40% more than no. of books sold by X in 2014. Then total no. of books sold by X & Z together in 2015 is what percent of the total no. of books sold in 2011?
(a) 120% (b) 115% (c) 145%
(d) 105% (e) 130%

**75.** Average no. of total books sold by Y and X together in both the year 2011 and 2012 are how much more/less than average no. of books sold by Z in year 2010 and 2014 together?
(a) 15000 (b) 35000 (c) 25000
(d) 40000 (e) 30000

**Directions (76-80):** Two equations I and II are given below in each question. You have to solve these equations and give answer accordingly.
(a) if x<y
(b) if x>y
(c) if x≤y
(d) if x≥y
(e) if x=y or no relation can be established

**76.** I. $3x^2 + 17x + 10 = 0$
II. $10y^2 + 9y + 2 = 0$

**77.** I. $4x^2 = 49$
II. $9y^2 - 66y + 121 = 0$

**78.** I. $3x^2 + 5x + 2 = 0$
II. $y^2 + 12y + 27 = 0$

**79.** I. $x^2 - 7x + 10 = 0$
II. $y^2 - 14y + 45 = 0$

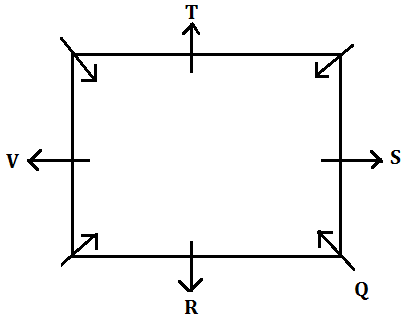
**80.** I. $6x^2 - 49x + 99 = 0$
II. $5y^2 + 17y + 14 = 0$

# Mock 08 : Solutions

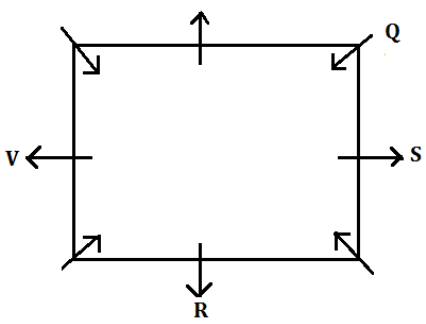
## REASONING ABILITY

**Directions (1-5):**
V sits second to the right of R. R sits in the middle of one of the sides of table. Only two people sit between V and Q. S is one of the immediate neighbors of Q. T sits second to the left of S. So, there will be two possibilities----

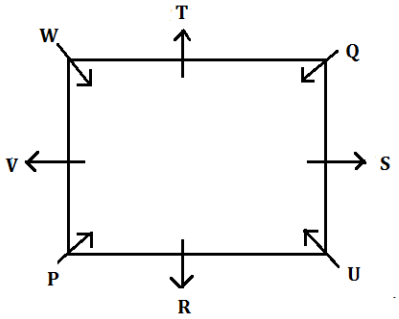
CASE-1




CASE-2




P sits second to the left of U. V is not an immediate neighbour of U. Therefore, case-1 will be eliminated and we got the final arrangement-----




1. (d); 2. (d); 3. (e);

4. (a); 5. (e);

**Directions (6-10):**

In the arrangement words are arranged along with a number in each step. As for words, they are arranged in reverse alphabetical order on the left end while the numbers are arranged in such a manner that the number of letters present in the word comes after the word.

Input: 6 proud hot 9 extreme following 4 rush 7 5 splash 3

Step I: splash 6 proud hot 9 extreme following 4 rush 7 5 3

Step II: rush 4 splash 6 proud hot 9 extreme following 7 5 3

Step III: proud 5 rush 4 splash 6 hot 9 extreme following 7 3

Step IV: hot 3 proud 5 rush 4 splash 6 9 extreme following 7

Step V: following 9 hot 3 proud 5 rush 4 splash 6 extreme 7

Step V I: extreme 7 following 9 hot 3 proud 5 rush 4 splash 6

6. (b) 7. (b) 8. (d)

9. (d) 10. (b)

**Directions (11-15):**

H lives on floor 4 and F lives to the east of H. There are two floors between floors of F and P. There is a gap of two floors between J and V, who does not live on top floor. J does not live on same flat number as of P. So, there will be two possibilities----

| Case-1 | | |
|---|---|---|
| Floor | Flat 1 | Flat 2 |
| 5 | | J |
| 4 | H | F |
| 3 | | |
| 2 | | V |
| 1 | P | |

| Case-2 | | |
|---|---|---|
| Floor | Flat 1 | Flat 2 |
| 5 | J | |
| 4 | H | F |
| 3 | | |
| 2 | V | |
| 1 | | P |

G and T lives on same floor. G lives in same flat number as of J. R lives below G but not with V.

| Case-1 | | |
|---|---|---|
| Floor | Flat 1 | Flat 2 |
| 5 | | J |
| 4 | H | F |
| 3 | T | G |
| 2 | | V |
| 1 | P | R |

| Case-2 | | |
|---|---|---|
| Floor | Flat 1 | Flat 2 |
| 5 | J | |
| 4 | H | F |
| 3 | G | T |
| 2 | V | |
| 1 | R | P |

S lives above U but not on flat-1. By this condition Case-1 will be cancelled and we got the final arrangement.

| Floor | Flat 1 | Flat 2 |
|---|---|---|
| 5 | J | S |
| 4 | H | F |
| 3 | G | T |
| 2 | V | U |
| 1 | R | P |

11. (c); 12. (d); 13. (a);

14. (b); 15. .(c);

**Directions (16-20):**

16. (d); I. $K \leq T$ (False)
II. $J > S$ (False)

17. (b); I. $A > U$ (False)
II. $J < S$ (True)

18. (e); I. $F > E$ (True)
II. $P < A$ (True)

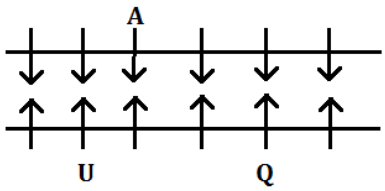
**19. (c);** **I.** G > J (False)
**II.** H = J (False)

**20. (d);** **I.** A > C (False)
**II.** W < B (False)

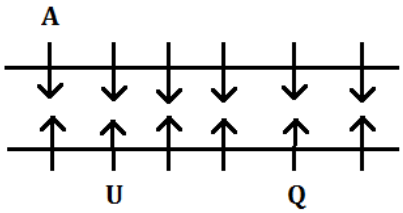
**Directions (21-25):**

Two people sit between Q and U. Neither Q nor U sits at an extreme end of the line. The immediate neighbour of Q faces the person who sits third to the left of A. So, there will be two possibilities ----

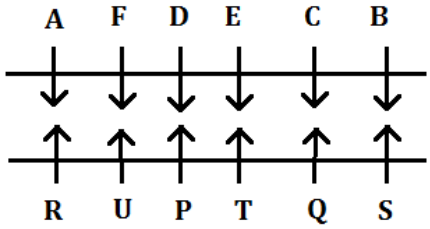
**Case-2**




**Case-1**




D sits third to the right of B. Either D or B sits at an extreme end of the line. The one who faces B sits second to the right of T. Therefore, case2 will be cancelled. C and E are immediate neighbors. R sits second to the left of P. E does not face the immediate neighbour of S. Final arrangement will be----

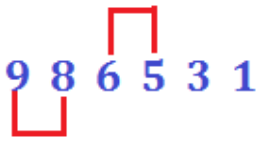



**21. (e)** **22. (b)** **23. (c)**

**24. (b)** **25. (d)**

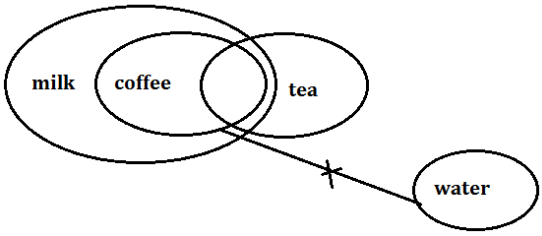
**26. (e);** $961=31^2$ & $169=13^2$

**27. (c);**



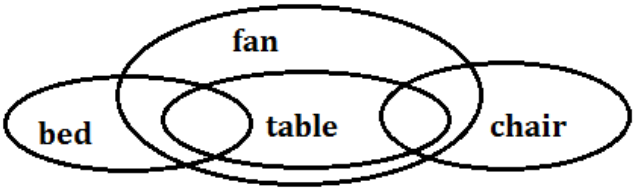

**Directions (28-30):**

**28. (c);**



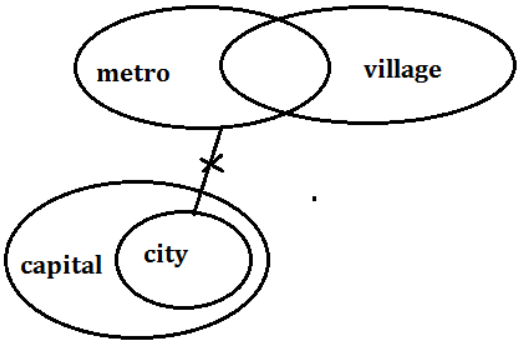

Conclusion (c) does not follow as there is not direct relation between elements tea and water. So, we cannot conclude that No tea is water.

**29. (d);**




Conclusion (d) does not follows as it is given that all table are fan therefore, it cannot be a possibility conclude that some table are not fan

**30. (d);**




Conclusion (d) does not follows as there is no direct relation between elements city and village.

**Directions (31-35):**

The given conditions are

| Person | City | Car |
|---|---|---|
| A | | ~~Hyundai~~ |
| B | Goa | Audi |
| C | | |
| D | Shimla | ~~Maruti~~ |
| E | ~~Kochi~~ | |
| F | | BMW |
| H | | |

Now, D travels only with the one who has Mahindra car. B travels to Goa with A. The one who has Honda travels to

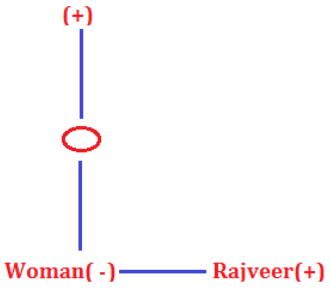
Kochi. The one who has Hyundai does not travel to Shimla. The one who has BMW does not travel to Goa. C travels with the one who has Maruti. So, the final arrangement will be-

| City | Person | Car |
|---|---|---|
| Goa | A | Maruti |
| Goa | B | Audi |
| Goa | C | Hyundai |
| Shimla | D | Renault |
| Shimla | E | Mahindra |
| Kochi | F | BMW |
| Kochi | H | Honda |

**31. (c);** **32. (d);** **33. (e);**

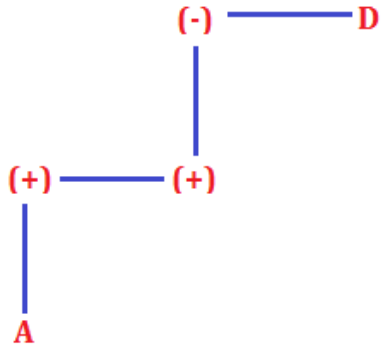
**34. (d);** **35. (b);**

**36. (c);**

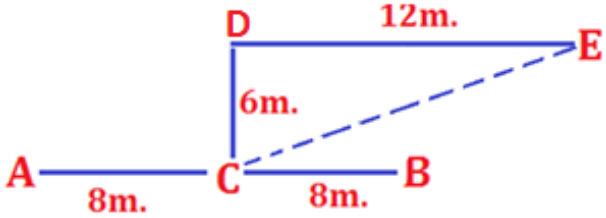



**37. (d);** DELAY→%4@2β

**38. (b);**




**Directions (39-40):**




**39. (b);** Distance $= \sqrt{12^2 + 6^2} = 6\sqrt{5}$

**40. (b) ;**

## QUANTITATIVE APTITUDE

**41. (a);** Literate female in city B
$= 8000 \times \frac{30}{100} \times \frac{20}{100} = 480$
Literate male in city B $= 8000 \times \frac{30}{100} - 480$
$= 1920$
Illiterate female in city B $= 8000 \times \frac{1}{2} - 480 = 3520$
Required ratio $= \frac{1920}{3520} = 6 : 11$

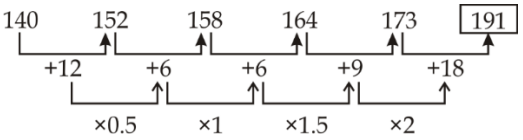
**42. (e);** Total males in city D & E together $= 7000 \times \frac{3}{7} + 4500 \times \frac{1}{3}$
$= 3000 + 1500$
$= 4500$
Total females in city B & C together $= 8000 \times \frac{1}{2} + 5000 \times \frac{2}{5}$
$= 4000 + 2000$
$= 6000$
Required percentage $= \frac{6000-4500}{6000} \times 100 = 25\%$

**43. (b);** Illiterate males in city A who died due to alcohol consumption
$= \frac{1}{2}\left[12000 \times \frac{75}{100} \times \frac{25}{100}\right] = 1125$
Females in city B
$= 8000 \times \frac{1}{2} = 4000$
Required percentage $= \frac{1125}{4000} \times 100 = 28\frac{1}{8}\%$

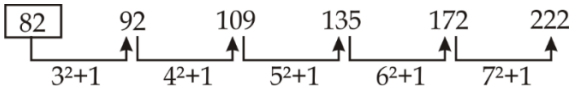
**44. (d);** Total literate in city A & E together $= 12000 \times \frac{25}{100} + 4500 \times \frac{20}{100}$
$= 3000 + 900 = 3900$
Total illiterate in city B & D together
$= 8000 \times \frac{70}{100} + 7000 \times \frac{50}{100}$
$= 5600 + 3500 = 9100$
Required ratio 3 : 7

**45. (c);** Illiterate males in city C
$= 5000 \times \frac{60}{100} \times \frac{55}{100} = 1650$
Females in city E $= 4500 \times \frac{2}{3} = 3000$
Required difference $= 3000 - 1650 = 1350$

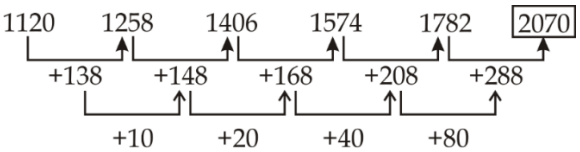
**46. (c);** Pattern is



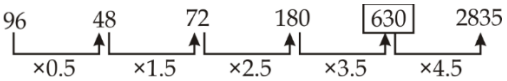

**47. (a);** Pattern is



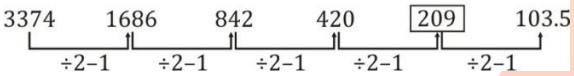

**48. (c);** Pattern is




**49. (d);** Pattern is




**50. (b);** Pattern is




**51. (d);** Let efficiency of Arun & Rahul be x unit/day & y unit/day respectively.

Atq,

$(x + y) \times 12 = (x \times 1.4 + y \times 0.8) \times 10$

$12x + 12y = 14x + 8y$

$4y = 2x$

$\frac{x}{y} = \frac{2}{1}$

Therefore, efficiency of Arun & Rahul together = 3 units/day

Total work = $3 \times 12 = 36$ units

Time in which Rahul alone can complete the work $= \frac{36}{1} = 36$ days

**52. (c);** Let sum be Rs P

Atq,

$\frac{CI}{P} = \left[\left(1 + \frac{R}{100}\right)^2 - 1\right]$

$\frac{24}{25} + 1 = \left(1 + \frac{R}{100}\right)^2$

$\frac{49}{25} = \left(1 + \frac{R}{100}\right)^2$

$R = 40\%$

For time period of 2years

$\frac{PR^2}{100^2} = \text{difference} \Rightarrow 120 = \frac{P \times (40)^2}{(100)^2}$

P = Rs 750

$SI = \frac{P \times R \times Time}{100} = \frac{750 \times 40 \times 3}{100} = Rs\ 900$

**53. (a);** Since total time is 8 hours 30 min

Therefore car P will travel for 4 hours 30 min

Car Q will travel for 4 hours

Therefore,

$x = 20 \times \frac{9}{2} + 40 \times 4$

$= 90 + 160 = 250$ km

**54. (e);** Let marked price of Article A be Rs 100x

S.P. of article A $= 100x \times \frac{80}{100} = Rs\ 80x$

C.P. of article B $= 80x \times \frac{6}{5} = Rs\ 96x$

S.P. of article B $= 96x \times \frac{115}{100} = Rs\ 110.4x$

Atq,

$110.4x - 80x = 1216$

$x = 40$

∴ marked price of article A = 40 × 100= Rs 4000

**55. (b);**

| | | A | B | C | |
|---|---|---|---|---|---|
| Amounts | → | 3 | 5 | 7 | |
| for 4 months | | 4×3 | 4×5 | 4×7 | Time × Amount |
| for rest 8 months | | 8×(3+4) | 8×5 | 8×7 | |

Profit ⇒ 17 : 15 : 21

↓

3150

1 unit = 150 Rs.

Total profit = 150 × (17+15+21) = Rs 7950

**56. (a);** Total marks obtained in math, science & English together

$= \frac{45}{100} \times 2100 = 945$

Total maximum marks $= \frac{2100}{70} \times 100 = 3000$

Required percentage $= \frac{945}{3000} \times 100 = 31.5\%$

**57. (c);** Required percentage $= \frac{(17+13)-(15+12)}{(15+12)} \times 100$

$= \frac{3}{27} \times 100 = 11\frac{1}{9}\%$

**58. (b);** Maximum marks per subject which have equal maximum marks

$= \frac{2100}{70} \times 100 \times \frac{20}{100} = 600$

Atq,

Let maximum marks for Hindi be x

$\frac{140}{100} \times x + x = 3000 - 4 \times 600$

$240x = 600 \times 100$

$x = 250$

maximum marks in math & history together

$= 1.4 \times 250 + 600 = 950$

Marks obtained in computer & Science together

$= \frac{(17+12)}{100} \times 2100 = 609$

$\therefore$ Required difference $= 950 - 609 = 341$

**59. (a);** Required ratio $= \frac{\frac{17+15}{2}}{\frac{23+13}{2}} = 8:9$

**60. (e);** New maximum marks $= \frac{2100}{70} \times 100 \times \frac{140}{100} = 4200$

New percentage of marks obtained $= \frac{2100}{4200} \times 100 = 50\%$

55% marks $= \frac{55}{100} \times 4200$

$= 2310$

Student fails by $= 2310 - 2100 = 210$

**61. (a);** **Quantity I:**

Let mark price $= 100x$ Rs.

So, cost price $= \frac{100x \times 75}{100} = 75x$ Rs.

Selling price $= \frac{100x \times 85}{100} = 85x$ Rs.

ATQ—

$85x = 34$

$x = \frac{2}{5}$

CP $= 30$, Rs.

MP $= 40$ Rs.

Total profit on selling 18 articles $\rightarrow (34 - 30) \times 18 =$ Rs 72

**Quantity II:**

52 Rs.

**Quantity II < Quantity I**

**62. (a);** **Quantity I:**

Let present age of Satish $= a$ yr

So, present age of Ayush $= (a + 3)$ yr

Given ratio

$\frac{\text{Age of Ayush (5 year ago)}}{\text{Age of Satish (4 year hence)}} = \frac{3}{4}$

$\Rightarrow \frac{a+3-5}{a+4} = \frac{3}{4}$

$\Rightarrow 4a - 8 = 3a + 12$

$\Rightarrow$ a= 20 years

**Quantity II:**

12 years

Therefore,

**Quantity II < Quantity I**

**63. (e);** **Quantity I:** 36

**Quantity II:**

The word 'DETAIL' has 6 letters which has 3 vowels (EAI) and 3 consonants(DTL) The 3 vowels(EAI) must occupy only the odd positions. Let's mark the positions as (1) (2) (3) (4) (5) (6). Now, the 3 vowels should only occupy the 3 positions marked as (1),(3) and (5) in any order.

Hence, number of ways to arrange these vowels $= {}^3P_3 = 3! = 3 \times 2 \times 1 = 6$

Now we have 3 consonants(DTL) which can be arranged in the remaining 3 positions in any order. Hence, number of ways to arrange these consonants

$= {}^3P_3 = 3! = 3 \times 2 \times 1 = 6$

Total number of ways = number of ways to arrange the vowels × number of ways to arrange the consonants $= 6 \times 6 = 36$

Therefore,

**Quantity II = Quantity I**

**64. (c);** **Quantity I:**

Let number is $\rightarrow 10x+y$

After reversing $= 10y+x$

ATQ,

$10x + y = 1.2(10y + x)$

$8.8x = 11y$

$\frac{x}{y} = \frac{5}{4}$

Let x be 5a and y be 4a

For value of a=1, the number is two digit

The number should be = 54

**Quantity II:**

$x^2 - 55x + 54 = 0$

$x^2 - 54x - x + 54 = 0$

$x(x - 54) - 1(x - 54) = 0$

$x = 54, 1$

**Quantity I ≥ Quantity II**

**65. (a);** **Quantity I:**

Let Radius of Park = r

Area $= \pi r^2$

$5544 = \pi r^2$

$\Rightarrow$ r = 42 m.

Radius of outer circle $= 42 + 7 = 49$

Area of circular Path = Area of Outer circle – Area of park

$\frac{22}{7} \times 49 \times 49 - 5544 = 7546 - 5544$

$= 2002$ m$^2$

**Quantity II:**

Area of rectangle = Length × breadth

$= 77 \times 26$

$= 2002$ cm$^2$

**Quantity I > Quantity II**

**66. (d);** $(14 + 16 + 14 + 12) + \left(\frac{1}{11} + \frac{3}{11} + \frac{4}{121} + \frac{3}{11}\right) = ?$

$? = 56 + \left(\frac{11 + 33 + 4 + 33}{121}\right)$

$= 56 + \frac{81}{121}$

$= 56\frac{81}{121}$

**67. (c);** $4059 + 3312 - 3381$

$= 3990$

**68. (a);** $280.5 - 241.5 = ?$

$? = 39$

**69. (b);** $12 \times 15 + 156 = (?)^3 + 120$

$\Rightarrow (?)^3 = 216$

$\therefore ? = 6$

**70. (b);** $\frac{1285 \times 76}{100} = \frac{1256 \times 35}{100} + ?$

$\Rightarrow 976.6 = 439.6 + ?$

$\therefore ? = 976.6 - 439.6 = 537$

**71. (c);** Required percentage $= \frac{(40+35)-(25+35)}{(25+35)} \times 100$

$= \frac{75 - 60}{60} \times 100 = 25\%$

**72. (d);** Let no. of books sold by shopkeeper Y in 2009 be x

Atq,

$x \times \frac{120}{100} = 30{,}000$

$x = 25{,}000$

No. of books sold by Shopkeeper Z in 2009

$= 35000 \times \frac{75}{100} = 26{,}250$

$\therefore$ Required total $= 26{,}250 + 25{,}000$

$= 51{,}250$

**73. (a);** Required difference $= (35 + 25 + 40) - (40 + 15 + 40)$

$= 100 - 95 = 5000$

**74. (b);** Total books sold in 2015

$= \frac{80{,}000}{2} \times 3 = 120{,}000$

Books sold by Y in 2015 $= 20{,}000 \times \frac{140}{100} = 28{,}000$

Total books sold by X & Z in 2015

$= 120000 - 28000 = 92{,}000$

Required percentage $= \frac{92000}{80000} \times 100 = 115\%$

**75. (e);** Average books sold by X & Y in 2011 & 2012 together

$= \frac{1}{2}[55{,}000 + 75{,}000] = 65{,}000$

Average books sold by Z in 2010 & 2014

$= \frac{1}{2}[35{,}000 + 35{,}000] = 35{,}000$

Required difference $= 65{,}000 - 35{,}000$

$= 30{,}000$

**76. (a); I.** $3x^2 + 17x + 10 = 0$

$\Rightarrow 3x^2 + 15x + 2x + 10 = 0$

$\Rightarrow 3x(x + 5) + 2(x + 5) = 0$

$\Rightarrow (3x + 2)(x + 5) = 0$

$\Rightarrow x = -5, \left(-\frac{2}{3}\right)$

**II.** $10y^2 + 9y + 2 = 0$

$\Rightarrow 10y^2 + 5y + 4y + 2 = 0$

$\Rightarrow 5y(2y + 1) + 2(2y + 1) = 0$

$\Rightarrow (5y + 2)(2y + 1) = 0$

$\Rightarrow y = \frac{-2}{5}, -\frac{1}{2}$

$\therefore x < y$

**77. (a); I.** $4x^2 = 49$

$\therefore \quad x = \pm\frac{7}{2}$

**II.** $9y^2 - 66y + 121 = 0$

$9y^2 - 33y - 33y + 121 = 0$

$y = \frac{11}{3}, \frac{11}{3}$

$y > x$

**78. (b); I.** $3x^2 + 3x + 2x + 2 = 0$

$\Rightarrow 3x(x + 1) + 2(x + 1) = 0$

$\Rightarrow x = -1, \frac{-2}{3}$

**II.** $y^2 + 9y + 3y + 27 = 0$

$\Rightarrow y(y + 9) + 3(y + 9) = 0$

$\Rightarrow y = -3, -9$

$\therefore x > y$

**79. (c); I.** $x^2 - 5x - 2x + 10 = 0$

$\Rightarrow x(x - 5) - 2(x - 5) = 0$

$\Rightarrow x = 2, 5$

**II.** $y^2 - 9y - 5y + 45 = 0$

$\Rightarrow y(y - 9) - 5(y - 9) = 0$

$\Rightarrow y = 9, 5$

$\therefore x \leq y$

**80. (b); I.** $6x^2 - 49x + 99 = 0$

Or, $6x^2 - 27x - 22x + 99 = 0$

Or, $3x(2x - 9) - 11(2x - 9) = 0$

Or, $(3x - 11)(2x - 9) = 0$

$\therefore x = \frac{11}{3}, \frac{9}{2}$

**II.** $5y^2 + 17y + 14 = 0$

or, $5y^2 + 10y + 7y + 14 = 0$

or, $5y(y + 2) + 7(y + 2) = 0$

or, $(5y + 7)(y + 2) = 0$

$\therefore y = -2, -\frac{7}{5}$

Hence, $x > y$

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# Mock 09

# IBPS RRB PO Prelims

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the wer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** Statements: $M \geq T < V$ ; $U < V \leq X$ ; $Z \geq Y \geq X$
Conclusions: I. $T < Z$ II. $U < Y$

**2.** Statements: $W \leq A \leq K = N$ ; $D \leq A \leq U = L$ ; $G > L$
Conclusions: I. $W < G$ II. $D \geq N$

**3.** Statements : $N < T \leq O$ ; $F > N \geq E = I > R$ ; $R \geq Y$
Conclusions: I. $Y < O$ II. $F > T$

**4.** Statements: $I \geq N \geq O = X$ ; $D \geq J \geq I = E$
Conclusions: I. $O < D$ II. $X = D$

**5.** Statements: $P > N = L \geq M$ ; $G = M \leq H \leq S$
Conclusions: I. $P > S$ II. $N \geq G$

**Directions (6-8):** Study the following information and wer the given questions
Point K is 12m to the West of point G. Point M is 4m to the North of Point K. Point J is 10m to the South of Point L. Point F is 6m to the West of point J. Point G lies exactly between Point L and Point J.

**6.** In which direction is Point J with respect to Point M?
(a) North
(b) Northwest
(c) South
(d) Southeast
(e) Cannot be determined

**7.** What is the shortest distance between Point K and Point L?
(a) 10m (b) 12m (c) 13m
(d) 17m (e) None of these

**8.** If Point N is 6m to the East of Point M, then how far is Point F from Point N?
(a) 12m (b) 10m (c) 9m
(d) 8m (e) None of these

**Directions (9-11):** Study the following information and wer the given questions.
In a family of eight members there are four male members. J is grandfather of L. M is the brother of L. J has only two children one of them is unmarried. P is sister-in-law of S. K is paternal grandmother of M. S is daughter of K. Q is the Son of G and brother of L.

**9.** How is G related to K?
(a) Son (b) Daughter (c) Mother
(d) Brother (e) Either (a) or (b)

**10.** How is L related to S?
(a) Aunt
(b) Nephew
(c) Niece
(d) Sister
(e) Cannot be determined

**11.** How is P related to M?
(a) Sister (b) Aunt (c) Grandmother
(d) Mother (e) None of these

**12.** If "SOUL" is coded as "5#7$", "FREELS" is coded as "29@@$5", then "OURSELF" will be coded as ?
(a) #759@$2 (b) #795@2$ (c) #9572$@
(d) #795@$2 (e) None of these

**13.** How many pairs of letters are there in the word" **PARTICLE**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**14.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "**MISUNDERSTANDING**" then which of the following will be fourth to the left of the twelfth from the left end?
(a) G (b) N (c) M
(d) I (e) None of these

**15.** In a row of students facing North, Piya is 16$^{th}$ from the left end. Nine students sit between Piya and Riya. , then what could be the minimum number of students possible to be in the row if Piya does not sit at any end?
(a) 16 (b) 17 (c) 25
(d) 26 (e) Cannot be determined

**Direction (16-20):** Study the following information carefully and wer the question given below-
Seven people viz. A, B, C, D, E, F and G live in a building of seven different floors. The ground floor is numbered as 1, the floor just above it is numbered as 2 and so on till top floor which is numbered as 7 (but not necessarily in the same order). Each of them is travelling to a different city viz. Delhi, Mumbai, Patna, Chennai, Kolkata, Bengaluru and Lucknow (but not necessarily in the same order).
Only three people live above the floor on which A live. Only one person lives between A and the one travelling to Bengaluru. F lives immediately below the one travelling to Mumbai. The one travelling to Mumbai lives on an even numbered floor. Only three people live between the ones travelling to Bengaluru and Patna. E live immediately above C. E is not travelling to Patna. Only two people live between B and the one travelling to Kolkata. The one travelling to Kolkata lives below the floor on which B live. The one travelling to Delhi does not live immediately above or immediately below B. D does not live immediately above or immediately below A. G does not travel to Chennai.

**16.** Who among the following lives on floor number 3?
(a) C
(b) G
(c) E
(d) The one travelling to Chennai
(e) The one travelling to Kolkata

**17.** D is travelling to which of the following city?
(a) Mumbai (b) Bengaluru (c) Chennai
(d) Kolkata (e) Patna

**18.** Who among the following lives immediately above E?
(a) A (b) B (c) D
(d) G (e) F

**19.** How many people live between the floors on which D and the one travelling to Mumbai lives?
(a) None (b) One (c) Two
(d) Three (e) More than three

**20.** Which among the following statement is true with respect to G?
(a) G lives on lowermost floor
(b) G lives on floor number 7
(c) G lives immediately above E
(d) G is travelling to Bengaluru
(e) None of these

**Directions (21-25):** Study the information and wer the following questions:
Ten persons are sitting in two parallel rows facing each other. A, B, C, D and E are sitting in row 1 facing north and P, Q, R, S and T are sitting in row 2 facing south (not necessarily in the same order). The persons who are facing each other likes same sports. The sports are Cricket, Football, Hockey, Tennis and Badminton.
B sits third to the right of E and one of them sits at an extreme end of the row. One person sit between S and P and neither of them sits at any end. The pair who likes Badminton sits to the immediate left of B. T sits at one of the end and does not like Football. C sits second to the right of E. S likes Cricket. D likes football and sits at one of the end. Q does not like Football. Either of the pair who sits at the extreme ends does not like Hockey. The pair who likes Tennis does not sit to the immediate right of P. Q does not face A.

**21.** Who among the following sits to the immediate right of the one who faces D?
(a) S (b) P (c) R
(d) T (e) None of these

**22.** What is the position of C with respect to one who likes Hockey?
(a) Third to the left
(b) Third to the right
(c) Immediate left
(d) Immediate right
(e) None of these

**23.** Who faces R?
(a) A (b) B (c) C
(d) D (e) None of these

**24.** Who faces the immediate neighbor of E?
(a) P
(b) The one who likes Cricket
(c) The one who likes Football
(d) The one who likes Tennis
(e) None of these

**25.** Four of the following five pair are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) E, S (b) B, R (c) C, P
(d) A, Q (e) D, R

**Directions (26-30):** Study the following information carefully and wer the questions given below:
A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.
**Input: match 8 company 12 better 14 door 16 sequence 10**
Step I : better match 8 company 14 door 16 sequence 10 12
Step II : company better match 8 door 16 sequence 10 12 14
Step III : door company better match 16 sequence 10 12 14 8

Step IV : match door company better 16 sequence 12 14 8 10

Step V : sequence match door company better 12 14 8 10 16

Step V is the last step of the above arrangement. As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.

**Input: roast 14 cricket 16 plug 12 twilight 10 output 8**

**26.** Which of the following element is fifth from the left end in Step II?
(a) 12 (b) plug (c) twilight
(d) 10 (e) None of these

**27.** Which of the following element is fourth from the right end in step IV?
(a) 14 (b) 10 (c) output
(d) cricket (e) twilight

**28.** Which of the following is Step III of the given input?
(a) plug output roast cricket 16 twilight 10 14 12 8
(b) plug output cricket roast 16 twilight 14 10 12 8
(c) plug output cricket roast 16 twilight 10 14 12 8
(d) plug output cricket roast twilight 16 10 14 12 8
(e) None of these

**29.** Which element is fifth to the left of '12' in step V?
(a) twilight (b) plug (c) output
(d) roast (e) None of these

**30.** Which element is seventh to the right of 'cricket' in step I?
(a) 8 (b) output (c) 10
(d) 14 (e) twilight

**Directions (31-35):** Study the following information carefully and wer the questions given below:
In a certain code language
'study book room rent' is coded as 'dy bk rm rt'
'room rent is high' is coded as 'rm rt si gh'
'pay rent is more ' is coded as 'yp rt si me'
'more study work hard' is coded as 'me dy wk hd'

**31.** What is the code for 'more room'?
(a) rm si (b) me gh (c) me rm
(d) bk rm (e) None of these

**32.** What is the code for 'work is hard'?
(a) hd gh si (b) wk hd rt
(c) wk si hd (d) si wk yp
(e) Cannot be determined

**33.** 'dy' is denoted as?
(a) book (b) room (c) rent
(d) study (e) None of these

**34.** What is the code for 'book'?
(a) dy (b) bk (c) rt
(d) rm (e) None of these

**35.** 'wk' is the code for?
(a) work (b) high (c) hard
(d) Either (a) or (b)
(e) Cannot be determined

**Directions (36-40):** Study the following information carefully and wer the given questions:
J, K, L, M, N, O and P are seven students studying in three different classes, viz. class IX, class X and class XI. At least two students studies in each class. Each one of them likes different subject viz. English, Hindi, Skrit, Mathematics, Computer, Physics and Biology (but not necessarily in the same order).
M likes Mathematics and does not study in class X. K likes Biology and studies in a class only with the one who likes Computer. N studies in Class XI and neither likes Computer nor studies with the one who likes English. P likes Hindi and studies with O. J likes English and does not study in class XI. The one who likes Skrit is studying with the one who likes Physics. O does not like Skrit

**36.** Who among the following likes Skrit?
(a) L (b) N (c) O
(d) J (e) None of these

**37.** Who among the following studies in class X?
(a) K
(b) L
(c) The one who likes Skrit
(d) Either (a) or (b)
(e) Both (a) or (b)

**38.** Who among the following studies in class IX?
(a) O (b) P (c) L
(d) M (e) None of these

**39.** Which of the following combinations is true?
(a) M – Class XI (b) N – Class X
(c) L – Class IX (d) O – Class XI
(e) None is true

**40.** The one who studies with N likes which subject?
(a) Computer (b) Mathematics
(c) Hindi (d) English
(e) Biology

## QUANTITATIVE APTITUDE

**41.** Tap 'P' and tap 'Q' alone can fill a tank in 15 hours and 12 hours respectively. Tap 'R' can empty the same tank in 20 hours. If all the three taps are opened for alternate hour starting with tap 'P' and ending with tap 'R', then find in what time tank will be filled completely?
(a) 30 hr (b) 25 hr (c) $28\frac{2}{5}$ hr.
(d) $26\frac{3}{5}$ hr (e) $25\frac{2}{5}$ hr.

**42.** 200 students appeared in an examination containing two subjects History and Geography. 120 students passed in history exam and 130 students passed in Geography exam while 70 students passed in both exams. If a student chosen at random, then what will be probability that the students is failed in both exams.
(a) $\frac{1}{8}$ (b) $\frac{1}{10}$ (c) $\frac{3}{40}$
(d) $\frac{1}{5}$ (e) $\frac{3}{20}$

**43.** After selling an article, Chiru found that he had made a loss of 15%. If he had sold it for Rs. 62.5 more, he would have made a profit of 10%. Find actual initial loss is what percent of the profit earned, if he had sold the article at 25% profit.
(a) 65% (b) 50% (c) 75%
(d) 60% (e) 80%

**44.** How many numbers of five digits can be formed by using the digits 0, 1, 2, 3, 4, 5, 6 and 7 if repetition of digits is not allowed?
(a) 5880 (b) 5180 (c) 5980
(d) 6080 (e) 5780

**45.** A fraction is such that, if we triple the numerator and double the denominator and again increased the numerator by 20% and decreased the denominator by 10%, we get 62.5% of $1\frac{7}{25}$. Find the original fraction.
(a) $\frac{1}{5}$ (b) $\frac{2}{9}$ (c) $\frac{3}{5}$
(d) $\frac{7}{10}$ (e) $\frac{2}{5}$

**Directions (46-50):** Find the wrong number in the following number series:

**46.** 15, 8, 12, 30, 112, 550
(a) 15 (b) 8 (c) 550
(d) 112 (e) 30

**47.** 1800, 1071, 828, 747, 722, 711
(a) 747 (b) 711 (c) 722
(d) 1071 (e) 1800

**48.** 35, 68, 108, 161, 227, 306
(a) 306 (b) 35 (c) 68
(d) 161 (e) 227

**49.** 216, 185, 156, 133, 114, 92
(a) 216 (b) 185 (c) 156
(d) 114 (e) 92

**50.** 111, 113, 121, 153, 281, 785
(a) 281 (b) 785 (c) 113
(d) 111 (e) 121

**Directions (51-55):** The following table shows the data related to the employment situation in a city in the five different years. If also shows the total population of city in given years, percentage of Govt. Employees, Pvt. Employees and out of remaining, the ratio between number of self-employed person to the number of unemployed person. Read the data carefully and wer the questions.

| Years | Total Population (in lakh) | % of Govt. employee | % of Pvt. Employee | self-employed: unemployed |
|---|---|---|---|---|
| 1990 | 1.25 | 30% | 40% | 2 : 3 |
| 1995 | 2 | 35% | 35% | 1 : 2 |
| 2000 | 1.5 | 32% | 28% | 1 : 1 |
| 2005 | 2.2 | 48% | 32% | 2 : 3 |
| 2010 | 1.1 | 40% | 45% | 3 : 7 |

**51.** Find the ratio between total number of Govt. employees in year 1995 and 2010 together to total number of Pvt. Employees in year 2000 and 2005 together?
(a) 95 : 128 (b) 285 : 281 (c) 275 : 271
(d) 517 : 570 (e) 575 : 517

**52.** Find the difference between total number of self-employed person in year 1990 and 2000 together and the number of unemployed person in year 2005 and 2010 together.
(a) 7050 (b) 7250 (c) 6850
(d) 7150 (e) 6950

**53.** Find the average number of Pvt. employees, self-employed and unemployed in year 2015 if total number of Govt. employees in 2015 is equal to 50% of the total number of govt. employee in year 1995 and 2000 together and in year 2015, $29\frac{1}{2}$ % of the total employees are Govt. employees.
(a) 94,000 (b) 46,000 (c) 47,500
(d) 46,500 (e) 47,000

**54.** The total number of Pvt. employees and self-employed in year 2000 is approximately what percent more than the total number of self-employed and unemployed person in year 2005 and 2010 together?
(a) 15% (b) 12% (c) 22%
(d) 19% (e) 25%

**55.** Find the average population of city in the year 1995, 2000 and 2005 together excluding number of Pvt. Employees in all these years?
(a) 1,25,800 (b) 1,27,400 (c) 1,29,200
(d) 1,31,200 (e) 1,33,500

**Directions (56-60):** What approximate value will come in the place of question (?) mark.

**56.** $(\sqrt{120.89}-\sqrt{25.001})+?\%\ of\ 159.993 = 62.011$
(a) 30 (b) 35 (c) 40
(d) 45 (e) 50

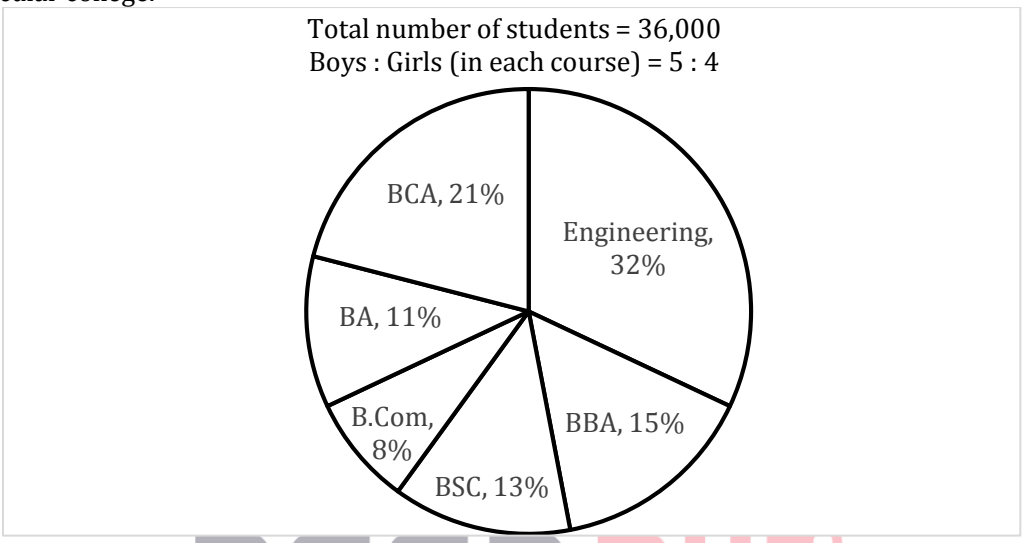
**57.** $(156.002 - 554.93 \div 5.01) \times ? = 989.98$
(a) 15 (b) 12 (c) 30
(d) 22 (e) 32

**58.** $21.001 + ? = (119.91 \times 38.01) \div 47.953$
(a) 74 (b) 66 (c) 54
(d) 84 (e) 94

**59.** $\sqrt{(2915.995 \div 81.001) \times 16.992 - ?} = 24$
(a) 46 (b) 26 (c) 22
(d) 52 (e) 36

**60.** (24.98% of 192.01 ÷ 15.995) = 59.95% of 180.02 - ?
(a) 95 (b) 105 (c) 115
(d) 125 (e) 85

**Direction (61-65) :** The given below pie-chart shows the percentage distribution of students studying six different courses in a particular college.




**61.** What is the ratio between total number of students studying B.Com to the number of girls studying Engineering?
(a) 7 : 16 (b) 9 : 16 (c) 3 : 8
(d) 1 : 4 (e) 9 : 22

**62.** The average number of boys studying BSC and BCA is what percent more/less than the number of girls studding BBA.
(a) $41\frac{2}{3}\%$ (b) $83\frac{1}{3}\%$ (c) $141\frac{2}{3}\%$
(d) $183\frac{1}{3}\%$ (e) 37.5%

**63.** Find the total number of Boys studying BA and B.Com together.
(a) 3720 (b) 3600 (c) 4200
(d) 3800 (e) 4150

**64.** What is the difference between the number of boys studying B.Com and Engineering together and the number of girls studying the same courses together?
(a) 1400 (b) 1600 (c) 1800
(d) 1700 (e) 1200

**65.** The difference between the number of students studying Engineering and B.com is what percent of the total number of students studying the remaining courses?
(a) $66\frac{2}{3}\%$ (b) 50% (c) 40%
(d) 48% (e) 38%

**66.** A person's present age is 2.5 times of his son's present age whereas the ratio of his wife's present age to his present age is 5 : 6. 10 years ago, the ratio of person, his son and his wife's age is 25 : 7 : 20. Find the present average age of all the three?
(a) $44\frac{1}{3}yr.$ (b) $44\frac{2}{3}yr.$ (c) $45\ yr.$
(d) $45\frac{1}{3}yr.$ (e) $46\frac{1}{3}yr.$

**67.** A sphere of radius 12 cm is melted to form 6 cones of radius 8 cm. Then, find the slant height of the cone?
(a) 18 cm (b) $4\sqrt{47}$ cm (c) $3\sqrt{97}$ cm
(d) $2\sqrt{97}$ cm (e) 16 cm

**Directions (68-72):** In each question two equations numbered (I) and (II) are given. Student should solve both the equations and mark appropriate wer.
(a) If $x = y$ or no relation can be established
(b) If $x > y$
(c) If $x < y$
(d) If $x \geq y$
(e) If $x \leq y$

**68.** I. $6x^2 + 13x + 6 = 0$ II. $2y^2 + 7y + 6 = 0$

**69.** I. $\frac{x}{3} + 1 = \frac{7}{15}$ II. $5(y - 2) + 18 = 0$

**70.** I. $4x^2 + 16x + 15 = 0$ II. $2y^2 + 5y + 3 = 0$

**71.** I. $12x^2 - 17x + 6 = 0$ II. $35y^2 - 29y + 6 = 0$

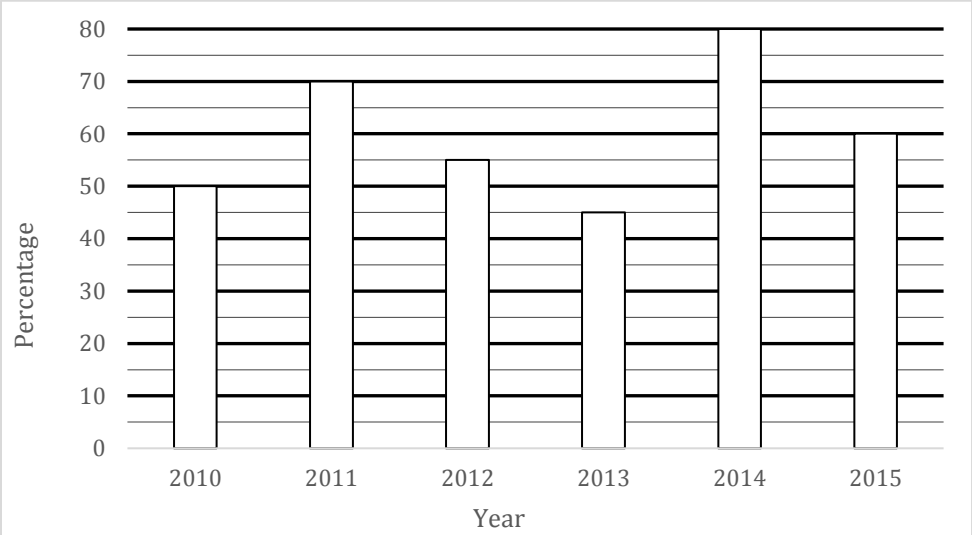
**72.** I. $x(4x - 9) = 9(16 - x)$ II. $4y^2 + 20y + 25 = 0$

**73.** The speed of boat in downstream is equal to the average speed of a boy who went his school at a speed of 10km/h from home and returned back with a speed of 15 km/hr. Find the ratio between speed of boat in still water to the speed of current if the boat travels $40\frac{1}{2}$ km upstream in 4.5 hours.
(a) 9 : 1 (b) 14 : 3 (c) 7 : 1
(d) 21 : 4 (e) 15 : 2

**74.** Some amount was lent at 8% per annum simple interest. After one year, Rs. 10,944 is withdrew and the remaining of the amount is repaid at 6% per annum at the end of second year. If the ratio of the first year interest to that of the second year is 28 : 9 then, find the amount that was lent out initially
(a) Rs. 17,400 (b) Rs. 16,800 (c) Rs. 16,600
(d) Rs. 17,200 (e) Rs. 16,400

**75.** 60% of the revenue of a college came from the post-graduation courses while 40% are from the graduation courses. If the college raises its fees by 30% for the post-graduation courses and by 20% for the graduation courses, then find the percentage increase in the revenues of the college.
(a) 25% (b) 24% (c) 28%
(d) 26% (e) 30%

**Directions (76-80):** Study the following bar graph and wer the following questions.
The following bar graph gives the percentage of the number of candidates who qualified an examination out of the total number of candidates who appeared for the examination over a period of six years from 2010 to 2015.




**76.** If the number of candidates qualified in 2013 was 6300, then what was the number of girls appeared in 2013, if the ratio between number of boys to girls who appeared is 4 : 3.
(a) 4,500 (b) 5,400 (c) 6,000
(d) 6,300 (e) 6,600

**77.** If the number of candidates appeared in the examination in 2014 and 2015 were in the ratio of 2 : 3, then find the ratio of qualified candidates in the year 2014 to qualified candidates in the year 2015?
(a) 8 : 9 (b) 2 : 3 (c) 5 : 9
(d) 5 : 6 (e) 10 : 9

**78.** If the total number of candidates appeared in 2010 and 2011 together was 42400 then, find the average number of qualified candidates in these years if the ratio of qualified candidates in 2010 to that in 2011 is 5 : 7.
(a) 11920 (b) 12420 (c) 11720
(d) 12720 (e) 12920

**79.** The number of qualified candidates in 2016 is 90% of the total qualified candidates in 2015 whereas the qualified candidates qualified in 2016 is 63% of the total appeared candidates in 2016. Then find the ratio of appeared candidates in 2016 to that of in 2015.
(a) 5 : 7 (b) 6 : 7 (c) 7 : 6
(d) 8 : 7 (e) 11 : 14

**80.** If number of candidates not qualified in 2012 and 2014 is 8100 and 4500 respectively then find the number of candidates qualified in 2012 is what % of the candidates qualified in 2014.
(a) 58.5% (b) 50% (c) 66%
(d) 44% (e) 55%

# Mock 09 : Solutions

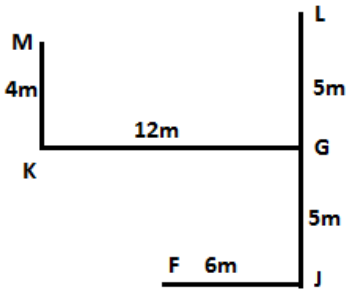
## REASONING ABILITY

**Direction (1-5):**

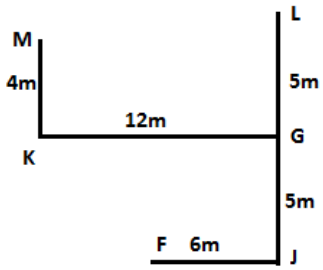
1. **(e);I.** T < Z (True) **II.** U < Y (True)
2. **(a);I.** W < G (True) **II.** D ≥ N (False)
3. **(a);I.** Y < O (True) **II.** F > T (False)
4. **(c);I.** O < D (False) **II.** X = D (False)
5. **(b);I.** P > S (False) **II.** N ≥ G (True)

**Directions (6-8):**

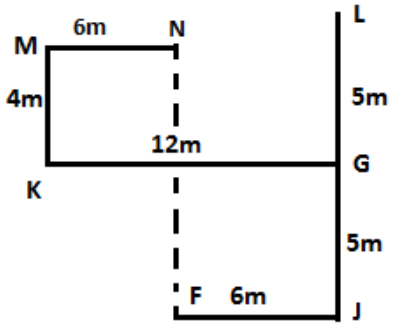
6. **(d);Southeast**



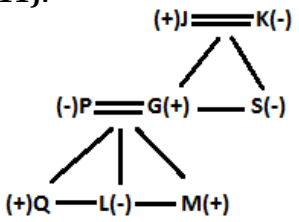

7. **(c); Distance = $\sqrt{12^2 + 5^2}$ = 13m**




8. **(c); Distance = 5 + 4 = 9m**




**Directions (9-11):**




9. **(a);** 10. **(c);** 11. **(d);**

12. **(d);**

| O | U | R | S | E | L | F |
|---|---|---|---|---|---|---|
| # | 7 | 9 | 5 | @ | $ | 2 |

13. **(b);**


14. **(c);** 15. **(b);**

**Directions (16-20):** Only three people live above the floor on which A live. Only one person lives between A and the one travelling to Bengaluru. Only three people live between the ones travelling to Bengaluru and Patna. The one travelling to Mumbai lives on an even numbered floor. F lives immediately below the one travelling to Mumbai. Only two people live between B and the one travelling to Kolkata. The one travelling to Kolkata lives below the floor on which B live. We have two possibilities-

**Case 1**

| Floor | Person | City |
|---|---|---|
| 7 | | |
| 6 | B | Bengaluru |
| 5 | | |
| 4 | A | Mumbai |
| 3 | F | Kolkata |
| 2 | | Patna |
| 1 | | |

**Case 2**

| Floor | Person | City |
|---|---|---|
| 7 | | |
| 6 | B | Patna |
| 5 | | |
| 4 | A | Mumbai |
| 3 | F | Kolkata |
| 2 | | Bengaluru |
| 1 | | |

Now, E live immediately above C. E is not travelling to Patna. This will eliminate Case 1. Now, the one travelling to Delhi does not live immediately above or immediately below B. D does not live immediately above or immediately below A. G does not travel to Chennai. So the final arrangement will be-

| Floor | Person | City |
|---|---|---|
| 7 | D | Chennai |
| 6 | B | Patna |
| 5 | G | Lucknow |
| 4 | A | Mumbai |
| 3 | F | Kolkata |
| 2 | E | Bengaluru |
| 1 | C | Delhi |

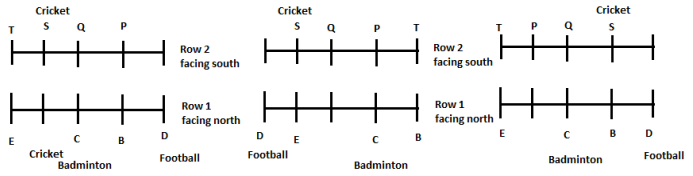
16. **(e)** 17. **(c)** 18. **(e)**

19. **(c)** 20. **(e)**

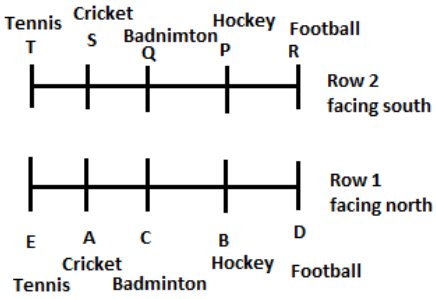
**Directions (21-25):** B sits third to the right of E and one of them sits at an extreme end of the row. One person sit between S and P and neither of them sits at any end. The pair who likes Badminton sits to the immediate left of B. C sits second to the right of E. S likes Cricket. D likes football and sits at one of the end. T sits at one of the end and does not like Football. Q does not like Football. We have three possibilities-

**Case 1** **Case 2**

Case 3




Now, Q does not face A. This will eliminate Case 2. Now, either of the pair who sits at the extreme ends does not like Hockey. The pair who likes Tennis does not sit to the immediate right of P. This will eliminate Case 3. So the final arrangement will be-




**21. (b)** **22. (c)** **23. (d)**

**24. (b)** **25. (e)**

**Directions (26-30):** The machine rearranges one word and one number in each step. The "words" are arranged in the reverse alphabetical order as per they appear in the dictionary from the left end in the last step. Such that "better" will arrange first in step I, then "company" in step II and so on. "numbers" are arranged according to the words that are arranged as the "number" are twice the number of words that appears in the input. It me for "better" number "12"will arrange first then for "company" "14" will arrange and so on.

Input: **roast 14 cricket 16 plug 12 twilight 10 output 8**

Step I: cricket roast 16 plug 12 twilight 10 output 8 14

Step II: output cricket roast 16 plug twilight 10 8 14 12

Step III: plug output cricket roast 16 twilight 10 14 12 8

Step IV: roast plug output cricket 16 twilight 14 12 8 10

Step V: twilight roast plug output cricket 14 12 8 10 16

**26. (b)** **27. (a)** **28. (c)**

**29. (d)** **30. (b)**

**Directions (31-35):** Codes of elements are:

| Codes | Elements |
|---|---|
| study | dy |
| rent | rt |
| is | si |
| room | rm |
| book | bk |
| high | gh |
| more | me |
| pay | yp |
| work/hard | wk/hd |

**31. (c)** **32. (c)** **33. (d)**

**34. (b)** **35. (e)**

**Directions (36-40):** M likes Mathematics and does not study in class X. K likes Biology. N studies in Class XI and neither likes Computer nor studies with the one who likes English. P likes Hindi and studies with O. J likes English and does not study in class XI. O does not like Skrit. According to the given conditions-

| Person | Subject | Class |
|---|---|---|
| J | English | ~~Class XI~~ |
| K | Biology | |
| L | | |
| M | Mathematics | ~~Class X~~ |
| N | ~~Computer~~ | Class XI |
| O | | |
| P | Hindi | |

Now, the one who likes Skrit is studying with the one who likes Physics. K studies in a class only with the one who likes Computer. So the given arrangement will be-

| Person | Subject | Class |
|---|---|---|
| J | English | Class IX |
| M | Mathematics | Class IX |
| L | Computer | Class X |
| K | Biology | Class X |
| N | Skrit | Class XI |
| O | Physics | Class XI |
| P | Hindi | Class XI |

**36. (b)** **37. (e)** **38. (d)**

**39. (d)** **40. (c)**

## QUANTITATIVE APTITUDE

**41. (c);**

| | Time | | LCM |
|---|---|---|---|
| P | 15 hr. | +4 | |
| Q | 12 hr. | +5 | 60 (Total capacity of tank) |
| R | 20 hr. | −3 | |

When all three tap opened for alternate hours -

| P | Q | R |
|---|---|---|
| +4 | +5 | −3 |

6 units of tank is filled in 3 hours.

54 unit of tank = $\frac{3}{6} \times 54 = 27$ hours.

Remaining tank is filled by tap P and Q in $1\frac{2}{5}$ *hours*

Required time = $27 + 1 + \frac{2}{5} = 28\frac{2}{5}$ hr.

**42. (b);** Total number of passed students

= 120 + 130 − 70 = 180

Number of failed students = 200 − 180 = 20

Required probability = $\frac{20}{200} = \frac{1}{10}$

**43. (d);** Let the CP of article = $100x$ Rs.

SP of article = $85x$ Rs.

ATQ,

$85x + 62.5 = 110x$

$25x = 62.5$

$\Rightarrow x = 2.5$ Rs.

$\Rightarrow$ CP = 250 Rs.

Required percent = $\frac{\frac{250\times15}{100}}{\frac{250\times25}{100}} \times 100 = 60\%$

Alternative Solution

Required percent = $\frac{15}{25} \times 100 = 60\%$

**44. (a);** Required number = 7 × 7 × 6 × 5 × 4 = 5880

**45. (e);** Let the original fraction be $\frac{x}{y}$

ATQ,

$\frac{3x\times\frac{120}{100}}{2y\times\frac{90}{100}} = \frac{5}{8} \times \frac{32}{25}$

$\Rightarrow \frac{3.6x}{1.8y} = \frac{4}{5}$

$\Rightarrow \frac{x}{y} = \frac{2}{5}$

**46. (a);**

10 (8) 12 (30) 112 (550)

×1−2 ×2−4 ×3−6 ×4−8 ×5−10

Wrong number = 15

**47. (c);**

1800 (1071) 828 (747) [720] (711)

−729 −243 −81 −27 −9

Wrong number = 722

**48. (b);**

[41] 68 108 161 227 306

+27 +40 +53 +66 +79

+13 +13 +13 +13

Wrong number = 35

**49. (e);**

216 185 156 133 114 [97]

−31 −29 −23 −19 −17 (prime number)

Wrong number = 92

**50. (b);**

111 113 121 153 281 [793]

$+\frac{2^2}{2}$ $+\frac{4^2}{2}$ $+\frac{8^2}{2}$ $+\frac{16^2}{2}$ $+\frac{32^2}{2}$

Wrong number = 785

Or

111 113 121 153 281 [793]

2 8 32 128 512

×4 ×4 ×4 ×4

**51. (b);** Total number of Govt. employees in year 1995 and 2010 together

= $2,00,000 \times \frac{35}{100} + 1,10,000 \times \frac{40}{100}$

= 70,000 + 44,000

= 1,14,000

Total number of Pvt. Employees in year 2000 and 2005 together

= $1,50,000 \times \frac{28}{100} + \frac{2,20,000\times32}{100}$

= 42,000 + 70,400

= 1,12,400

Required ratio = $\frac{(1,14,000)}{(1,12,400)} = \frac{285}{281}$

**52. (a);** The number of self-employed person in year 1990 and 2000 together

= $1,25,000 \times \frac{30}{100} \times \frac{2}{5} + 1,50,000 \times \frac{40}{100} \times \frac{1}{2}$

= 15,000 + 30,000

= 45,000

The number of unemployed person in year 2005 and 2010 together

= $2,20,000 \times \frac{20}{100} \times \frac{3}{5} + 1,10,000 \times \frac{15}{100} \times \frac{7}{10}$

= 26,400 + 11,550

= 37,950

Required difference =7,050

**53. (e);** Number of govt. employees in year 2015

= $\frac{50}{100} \times \left(2,00,000 \times \frac{35}{100} + 1,50,000 \times \frac{32}{100}\right)$

= 59,000

Total number of Pvt. Employees, self-employed and unemployed in year 2015
$= \frac{59,000}{29.5} \times 70.5$
$= 1,41,000$
Required average $= \frac{1,41,000}{3} = 47,000$

**54. (d);** Total number of Pvt. Employees and self-employed in year 2000
$= 1,50,000 \times \frac{28}{100} + 1,50,000 \times \frac{40}{100} \times \frac{1}{2}$
$= 42,000 + 30,000$
$= 72,000$
Total number of self-employed and unemployed in year 2005 and 2010 together
$= 2,20,000 \times \frac{20}{100} + 1,10,000 \times \frac{15}{100}$
$= 44,000 + 16,500$
$= 60,500$
Required% $= \frac{72000-60500}{60500} \times 100 = \frac{2300}{121} \approx 19\%$

**55. (c);** Required Average
$= \frac{2,00,000\times\frac{65}{100}+1,50,000\times\frac{72}{100}+2,20,000\times\frac{68}{100}}{3}$
$= \frac{1,30,000+1,08,000+1,49,600}{3}$
$= 1,29,200$

**56. (b);** $\left(\sqrt{121}-\sqrt{25}\right) + \frac{?}{100} \times 160 = 62$
$\Rightarrow \frac{?}{100} \times 160 = 62 - 6 = 56$
$\Rightarrow ? = \frac{56\times100}{160} = 35$

**57. (d);** $(156 - 555 \div 5) \times ? = 990$
$\Rightarrow 45 \times ? = 990$
$\Rightarrow ? = \frac{990}{45} = 22$

**58. (a);** $21 + ? = (120 \times 38) \div 48$
$\Rightarrow ? = 95 - 21 = 74$

**59. (e);** $\sqrt{(2916 \div 81) \times 17 - ?} = 24$
$\Rightarrow 612 - ? = (24)^2 = 576$
$\Rightarrow ? = 36$

**60. (b);** $\left(192 \times \frac{25}{100} \div 16\right) = \frac{60}{100} \times 180 - ?$
$\Rightarrow 3 = 108 - ?$
$\Rightarrow ? = 105$

**61. (b);** Required ratio $= \frac{8\times\frac{36000}{100}}{36000\times\frac{32}{100}\times\frac{4}{9}}$
$= \frac{8\times9}{32\times4} = \frac{9}{16}$

**62. (a);** Average number of boys studying in BSC and BCA together
$= \frac{36000\left(\frac{13}{100}\times\frac{5}{9}+\frac{21}{100}\times\frac{5}{9}\right)}{2}$
$= 3400$
Number of girls studying BBA
$= 36000 \times \frac{15}{100} \times \frac{4}{9} = 2400$
Required % $= \frac{3400-2400}{2400} \times 100$
$= 41\frac{2}{3}\%$

**63. (d);** Total number of boys studying in BA and B.Com together
$= \frac{36000}{100} \times \frac{5}{9} \times (11 + 8) = 200 \times 19 = 3800$

**64. (b);** Total number of students studying B.com and Engineering together $= 36000 \times \frac{40}{100} = 14,400$
Total number of boys studying B.com and Engineering together $= \frac{5}{9} \times 14400 = 8000.$
Required number of girls = 6400
Required difference = 1600

**65. (c);** Difference between number of students in Engineering and B.Com= $\frac{24}{100} \times 36000 = 8640$
Total number of students studying BBA, BSC, BA and BCA together
$= \frac{36000}{100} \times 60 = 21600$
Required % $= \frac{8640}{21600} \times 100 = 40\%$
Alternative Sol.
Required % $= \frac{(32-8)}{(21+15+13+11)} \times 100 = 40\%$

**66. (b);** Let the age of son be x yr.
Then, age of person = 2.5x yr.
Age of his wife $= \frac{25}{12}x$. yr.
Person : his son ; his wife = 30x : 12x : 25x
ATQ,
$\frac{30x-10}{12x-10} = \frac{25}{7} \Rightarrow 90x = 180$
$\Rightarrow$ x = 2.
Average age of all $= \frac{30x+12x+25x}{3} = \frac{67}{3} \times 2 = \frac{134}{3} yr$
$= 44\frac{2}{3} yr.$

**67. (d);** Let height of the cone be h cm.
ATQ,
$\frac{4}{3}\pi \times (12)^3 = 6 \times \frac{1}{3}\pi \times (8)^2 \times h$
$\Rightarrow$ h $= \frac{4\times12\times12\times12}{6\times8\times8} = 18cm$
Slant height $= \sqrt{(18)^2 + (8)^2} = \sqrt{388} = 2\sqrt{97}$ cm.

**68. (d);** I. $6x^2 + 13x + 6 = 0$
$\Rightarrow 6x^2 + 9x + 4x + 6 = 0$
$\Rightarrow 3x(2x + 3) + 2(2x + 3) = 0$
$\Rightarrow x = \frac{-2}{3}\ or \frac{-3}{2}$
II. $2y^2 + 7y + 6 = 0$
$\Rightarrow 2y^2 + 4y + 3y + 6 = 0$
$\Rightarrow 2y(y + 2) + 3(y + 2) = 0$
$\Rightarrow (2y + 3)(y + 2) = 0$
$\Rightarrow y = \frac{-3}{2}\ or -2$
$\therefore x \geq y$

**69. (a);** I. $\frac{x}{3}+1=\frac{7}{15}$
$\Rightarrow \frac{x}{3}=\frac{-8}{15}$
$\Rightarrow x=\frac{-8}{5}$
II. $5(y-2)+18=0$
$\Rightarrow 5y-10=-18$
$\Rightarrow 5y=-8$
$y=\frac{-8}{5}$
$\therefore x=y$

**70. (e);** I. $4x^2+16x+15=0$
$\Rightarrow 4x^2+10x+6x+15=0$
$\Rightarrow 2x(2x+5)+3(2x+5)=0$
$\Rightarrow x=\frac{-5}{2}\ or\ \frac{-3}{2}$
II. $2y^2+5y+3=0$
$\Rightarrow 2y^2+3y+2y+3=0$
$\Rightarrow y(2y+3)+1(2y+3)=0$
$\Rightarrow y=-1$ or $\frac{-3}{2}$
$y \geq x$

**71. (b);** $12x^2-17x+6=0$
$\Rightarrow 12x^2-9x-8x+6=0$
$\Rightarrow 3x(4x-3)-2(4x-3)=0$
$\Rightarrow x=\frac{3}{4}\ or\ \frac{2}{3}$
II. $35y^2-29y+6=0$
$\Rightarrow 35y^2-15y-14y+6=0$
$\Rightarrow 5y(7y-3)-2(7y-3)=0$
$\Rightarrow y=\frac{3}{7}\ or \frac{2}{5}$
$\therefore x>y$

**72. (a);** I. $x(4x-9)=9(16-x)$
$\Rightarrow 4x^2-9x=144-9x$
$\Rightarrow x^2=\frac{144}{4}$
$\Rightarrow x=\pm 6$
II. $4y^2+20y+25=0$
$\Rightarrow 4y^2+10y+10y+25=0$
$\Rightarrow 2y\,(2y+5)+5\,(2y+5)=0$
$\Rightarrow y=\frac{-5}{2}$
$\therefore$ relationship can't be established.

**73. (c);** Average speed of a boy $=\frac{2\times10\times15}{10+15}=12\ km/hr$
(when, distance is same for two different case. Then, average speed $=\frac{2\times x\times y}{x+y}$)
Speed of boat in downstream = 12 km/hr.
Speed of boat in upstream $=\frac{40.5}{4.5}=9km/hr.$
$\therefore$ Required ratio $=\frac{\frac{12+9}{2}}{\frac{12-9}{2}}=7:1$

**74. (b);** Let the amount be Rs. 100x
1st year interest $=\frac{100x\times8\times1}{100}=8x$
ATQ,
$\frac{8x}{\frac{(108x-10944)\times6\times1}{100}}=\frac{28}{9}$
$\Rightarrow \frac{8x\times100}{(108x-10944)\times6}=\frac{28}{9}$
$\Rightarrow \frac{100x}{(108x-10944)}=\frac{7}{3}\Rightarrow 456x=10944\times7$
$\Rightarrow x=168$ Rs.
$\therefore$ Amount = Rs. 16,800

**75. (d);** Let the total revenue of the college be 100x Rs.
Revenue from post graduate = 60x Rs.
Revenue from graduation course = 40x Rs.
New Revenue from post-graduation course
$=60x\times\frac{130}{100}=78x$ Rs
New revenue from graduation course
$=40x\times\frac{120}{100}=48x$
Total new Revenue = 78x + 48x
= 126x Rs.
$\therefore$ % increase in revenue $=\frac{(126x-100x)}{100x}\times100$
= 26%

**76. (c);** Required number of girls $=\frac{6300}{45}\times100\times\frac{3}{7}=6000$

**77. (a);** Let the number of candidates appeared in 2014 and 2015 be $2x$ and $3x$ respectively
Required ratio $=\frac{2x\times80}{3x\times60}=\frac{8}{9}$

**78. (d);** Let the number of candidates appeared in 2010 be $x$
Then, in 2011 = 42400 – $x$
ATQ,
$\frac{x\times50}{(42400-x)\times70}=\frac{5}{7}\Rightarrow x=42400-x\Rightarrow x=21200$
Required average $=\frac{21200\left(\frac{50}{100}+\frac{70}{100}\right)}{2}=12{,}720$

**79. (b);** Let the total number of candidates appeared in 2015 and 2016 be $x$ and $y$ respectively
Then, number of qualified candidates in 2016
$=\frac{90}{100}\times x\times\frac{60}{100}$
ATQ,
$y\times\frac{63}{100}=\frac{90}{100}\times x\times\frac{60}{100}\Rightarrow\frac{y}{x}=\frac{54}{63}=\frac{6}{7}$

**80. (e);** Number of candidates qualified in 2012
$=\frac{8100}{45}\times55=9900$
Number of candidates qualified in 2014 $=\frac{4500}{20}\times80$
= 18,000
Required% $=\frac{9900}{18000}\times100=55\%$

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# Mock 10

# IBPS RRB PO Prelims

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $J \leq K \leq M = L$ ; $O \geq T \geq M < S$ ; $P > S$
**Conclusions:** I. $M < O$ **II.** $L = O$

**2.** **Statements:** $M \leq N = P \leq Q < R$ ; $Q > T > V \geq W$ ; $Y < W$
**Conclusions: I.** $N > V$ **II.** $R > Y$

**3.** **Statements:** $C \geq O \geq D = A \geq L$ ; $K \leq S \leq A > N$
**Conclusions: I.** $S \leq C$ **II.** $L > N$

**4.** **Statements:** $F \leq E \leq D \leq X$ ; $Y = Z \geq X$ ; $Z < G$
**Conclusions: I.** $G > E$ II. $F \leq Y$

**5.** **Statements:** $W > C > R \geq M$ ; $P \leq S = T \leq C$
**Conclusions: I.** $S > W$ **II.** $P \leq R$

**Directions (6-10):** Study the information and answer the following questions:

Ten persons A, B, C, D, E, F, G, H, I and J are sitting in a row some are facing north and some are facing south (but not necessarily in the same manner).
(**Note:** Facing the same direction means if one is facing north then the other also faces north and vice versa. Facing opposite direction means if one is facing north then the other faces south and vice versa).

Six persons sit between A and D and none of them sits at any end of the row. Both A and D faces same direction. Two persons sit between E and D. I sits fourth to the left of E. Only one person sit between H and I. C sits to the immediate left of H. G and B are not the immediate neighbors of A. Persons sitting at the end face opposite directions. Immediate neighbors of D face same direction as D. Two persons sit between J and G. F faces north. G and B face same direction as J. Immediate neighbors of E face opposite direction. The number of person facing south is not equal to the number of person facing north.

**6.** Who among the following sits to the immediate left of B?
(a) G (b) E (c) I
(d) A (e) None of these

**7.** How many persons sit between F and H?
(a) None (b) One (c) Two
(d) Three (e) More than three

**8.** What is the position of A with respect to F?
(a) Third to the right (b) Second to the left (c) Immediate right
(d) Immediate left (e) None of these

**9.** Who among the following sit at the extreme end of the row?
(a) G (b) B (c) J
(d) F (e) None of these

**10.** How many persons face south?
(a) One (b) Two (c) Three
(d) Four (e) More than four

**Directions (11-13):** Study the following information and answer the given questions

Point A is 15m to the East of point B. Point D is 18m to the South of Point A. Point F is 3m to the West of Point C. Point E is 4m to the North of Point F. Point C lies exactly between Point A and Point D.

**11.** In which direction is Point E with respect to Point B?
(a) North (b) Northwest (c) South
(d) Southeast (e) Cannot be determined

**12.** In which direction is Point A with respect to Point F?
(a) Northwest (b) Northeast (c) Southwest
(d) Southeast (e) None of these

**13.** What is the shortest distance between Point B and Point F?
(a) 12m (b) 9m (c) 15m
(d) 18m (e) None of these

**Directions (14-17):** Study the following information and answer the given questions.

In a family of nine members there are five male members. M is the son of V. V is married to J. L is daughter-In-law of V. J has three children and two of them are married. U is the mother of B. W is son-in-law of J. S is aunt of B and is single. J is grandfather of A. B don't have any siblings.

**14.** How is L related to A?
(a) Mother-in-law
(b) Daughter
(c) Mother
(d) Aunt
(e) None of these

**15.** How is V related to B?
(a) Mother
(b) Maternal Grandmother
(c) Paternal Grandmother
(d) Aunt
(e) Cannot be determined

**16.** How is A related to M?
(a) Son (b) Daughter (c) Nephew
(d) Niece (e) Cannot be determined

**17.** How is J related to S?
(a) Brother
(b) Brother-in-law
(c) Father
(d) Father-in-law
(e) None of these

**Directions (18-21):** Study the following information carefully and answer the given questions.

A, B, C, D, E and F are six friends sitting around a circle facing centre. B sits second to the right of D. A does not face B. F does not face D. B is not an immediate neighbor of A. F does not sit to the immediate right of A. C does not sit second to the right of E.

**18.** Who among the following faces E?
(a) A (b) B (c) C
(d) D (e) Cannot be determined

**19.** What is the position of C with respect to F?
(a) Immediate right (b) Immediate left
(c) Second to the right
(d) Second to the left (e) Third to the left

**20.** Who among the following sits to the immediate right of A?
(a) D (b) F (c) C
(d) E (e) Cannot be determined

**21.** Who among the following faces C?
(a) A (b) B (c) D
(d) F (e) Cannot be determined

**22.** How many pairs of letters are there in the word" **JOURNEY**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**23.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "UNDERGRADUATE" then which of the following will be fifth to the left of the one which is twelfth from the left end?
(a) R (b) N (c) E
(d) G (e) None of these

**24.** In a row of students facing North, Raj is 12th from the left end. Four students sit between Raj and Rohan. Rohan is sixth from the right end. What is the maximum number of students possible in the row?
(a) 12 (b) 20 (c) 22
(d) 24 (e) Cannot be determined

**25.** In a certain code 'GROUP' is written as '@2461' and 'PING' is written as '13$@'. How is 'POURING' written in that code?
(a) 14263$@ (b) 14632@$ (c) 14632$@
*(d)* 14623$@ (e) None of these

**Directions (26-30):** Study the following information carefully and answer the questions given below:

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input: gained 27 48 our 39 there cost 82 air 14**

Step I : there gained 27 48 our 39 cost air 14 82
Step II : our there gained 27 39 cost air 14 82 48
Step III : gained our there 27 cost air 14 82 48 39
Step IV : cost gained our there air 14 82 48 39 27
Step V : air cost gained our there 82 48 39 27 14

Step V is the last step of the above arrangement.
As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.

**Input: roast 32 59 passion 44 treasure door 79 bill 11**

**26.** Which of the following element is fifth from the right end in Step IV?
(a) bill (b) 11 (c) treasure
(d) 79 (e) None of these

**27.** Which of the following element is fifth from the left end in step II?
(a) passion (b) door (c) 32
(d) 44 (e) None of these

**28.** Which of the following is Step III of the given input?
(a) passion roast treasure door 32 bill 11 79 59 44
(b) passion roast treasure 32 door bill 79 11 59 44
(c) passion roast treasure 32 door bill 11 79 59 44
(d)passion roast treasure door bill 32 11 79 59 44
(e) None of these

**29.** Which element is third to the left of 'passion' in step I?
(a) bill (b) roast (c) treasure
(d) 32 (e) None of these

**30.** Which element is seventh to the right of 'door' in step V?
(a) 11 (b) 44 (c) 32
(d) 59 (e) None of these

**Directions (31-35):** Study the following information carefully and answer the questions given below:

Eight persons A, B, C, D, E, F, G and H were born in four different month viz. February, April, May and June of the same year. Each of them was born on either of the two dates i.e. 11th or 18th but not necessarily in the same order.

E was born in the month having least number of days. Four persons were born between C and E. G was born in the month having maximum number of days. F was born immediately before G. B was born immediately after A. H is the youngest of them all. D is not older than B.

**31.** B was born on which of the following day?
(a) 18th April (b) 18th June (c) 11th April
(d) 11th Feb (e) None of these

**32.** Who among the following is older than A?
(a) D (b) E (c) C
(d) Both (a) and (b) (e) Cannot be determined

**33.** How many persons were born between D and A?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**34.** Who among the following was born on 18th May?
(a) C (b) G (c) F
(d) A (e) Cannot be determined

**35.** Who among the following was born immediately after C?
(a) A (b) H (c) F
(d) D (e) Cannot be determined

**Directions (36-40):** Study the following information and answer the given questions.

Seven students J, K, L, M, N, O and P are preparing for three different exams viz. Banking, SSC and UPSC. At least two students are preparing for one exam. All of them speak different language viz. English Hindi, Punjabi, Tamil, Telugu, Maithili and Bengali (but not necessarily in the same order).

M speaks Maithili and is preparing for UPSC. P who speaks Punjabi prepares only with the one who speak Tamil. L speaks English and does not prepare for UPSC. J is preparing with the one who speaks Hindi. The one who speaks Tamil is not preparing for Banking. K is preparing for Banking and neither speaks Hindi nor Telugu. N do not speak Tamil.

**36.** Who among the following is preparing with P?
(a) J (b) N (c) O
(d) K (e) None of these

**37.** Who among the following speaks Bengali?
(a) N (b) J (c) O
(d) K (e) None of these

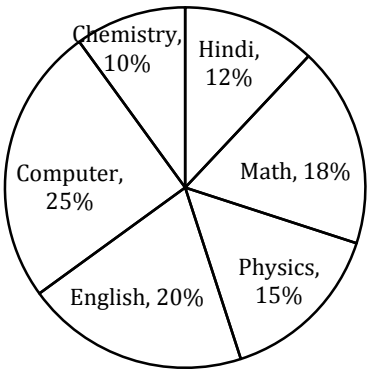
**38.** Who among the following is preparing for UPSC?
(a) O (b) K (c) P
(d) The one who speaks English (e) The one who speaks Telugu

**39.** Which among the following statement is true?
(a) P is preparing for Banking
(b) L is preparing for SSC
(c) N speaks Telugu
(d) O speaks Hindi
(e) None is true

**40.** Who among the following speaks Hindi?
(a) The one who is preparing for Banking
(b) The one who is preparing for UPSC
(c) O
(d) K
(e) None of these

## QUANTITATIVE APTITUDE

**Directions (41-45):** study the following pie-chart carefully & answer the following questions.
Pie-chart given below shows the total number of passed candidates in different subjects in a class.
Total number of passed students = 12000



**41.** If the number of failed students in Hindi is 25% more than number of passed students in Hindi. Then number of failed students in Hindi is what percent of number of passed students in English?
(a) 80% (b) 75% (c) 55%
(d) 60% (e) 70%

**42.** If total number of student who had taken exam of physics are 4000. Then find ratio of number of failed students in physics to number of passed students in chemistry?
(a) 11 : 6 (b) 13 : 6 (c) 11 : 5
(d) 3 : 2 (e) 2 : 1

**43.** If the total number of passed students are 25% of the total number of student in the class. Then total number of failed student is how much more/less than total number of passed students in computer, Math & Hindi together?
(a) 28,800 (b) 27,400 (c) 26,200
(d) 29,400 (e) 29,600

**44.** Total number of passed students in English & physics together is what percent more/less than total number of passed students in chemistry & Hindi together?
(a) $57\frac{1}{11}\%$ (b) $59\frac{1}{11}\%$ (c) $51\frac{2}{3}\%$
(d) $43\frac{2}{5}\%$ (e) $47\frac{1}{9}\%$

**45.** If the ratio of total number of passed to total number of students in class is 2 : 5. And the percentage distribution of failed students is same as that of the passed students in the class. Then find average number of failed student in chemistry & English?
(a) 2200 (b) 3200 (c) 1500
(d) 1700 (e) 2700

**46.** Rahul has three children. First & Second can complete a work in 12 days and 18 days respectively. Rahul alone can complete the same work in $1\frac{7}{11}$ days. Rahul can do 2 times the total work done by his all sons together in the same time. In what time his 3rd child can do the same work?
(a) 8 days (b) 10 days (c) 5 days
(d) 6 days (e) 12 days

**47.** A book bought at Rs P and sold at Rs Q, earning a profit of 30%. If the value of P is decreased by 10% & value of Q is also decreased by Rs 44, a profit of 20% is earned. Then find value of Q?
(a) Rs 260 (b) Rs 240 (c) Rs 320
(d) Rs 360 (e) Rs 420

**48.** Abhi, Rahul & Rola enter into a business. Abhi received $\frac{3}{8}$ th of total profit & remaining profit is divided equally between Rahul and Rola. If Abhi's income increases by Rs 420 then total profit increased from 8% to 16%. Then find capital invested by Rola?
(a) Rs 4250 (b) Rs 3420 (c) Rs 4375
(d) Rs 3850 (e) Rs 5235

**49.** If a certain sum of money at simple interest amounts to Rs 5000 in 5 years & Rs 5400 in 7 years at certain rate of interest per annum. Find the rate of interest at which the sum is invested?
(a) 12% (b) 10% (c) 3%
(d) 5% (e) 8%

**50.** A fruit seller have three types of fruit in his bucket namely Mango, Orange and Papaya. The probability of selling one mango is $\frac{2}{7}$ and one orange is $\frac{1}{6}$. If seller have total 46 papaya in his bucket then find total number of fruits in seller bucket ?
(a) 78 (b) 84 (c) 96
(d) 80 (e) 72

**Directions (51-55):** What value should come in place of (?) in the following questions?

**51.** $(12)^3 \times (6)^4 \div 432 = ?$
(a) 5184 (b) 5060 (c) 5148
(d) 5084 (e) 5220

**52.** $[(165)^2 \div 75 \times 12] \div 36 = (?)^2$
(a) 13 (b) 169 (c) 21
(d) 11 (e) 21

**53.** $\left(2\frac{1}{3}\right) + \left(3\frac{2}{5} \times \frac{5}{4}\right) - \frac{8}{3} = ?$
(a) $\frac{37}{12}$ (b) $\frac{17}{12}$ (c) $\frac{9}{2}$
(d) $\frac{47}{12}$ (e) $\frac{2}{5}$

**54.** $1898 \div 73 \times 72 = (?)^2 \times 13$
(a) −256 (b) 256 (c) 12
(d) 144 (e) −16

**55.** $(0.81)^2 \div (0.729)^3 \times (0.9)^2 = (0.9)^{?-3}$
(a) 6 (b) 2 (c) 4
(d) 0 (e) 5

**Direction (56 - 60):**Read the data carefully and answer the following questions:

Total **2800** voters in the three villages, i.e. **Vasantpur, Govindpur** and **Vilashpur**.

Ratio of total voters in Vasantpur , Govindpur and Vilashpur is 27 : 18 : 25 respectively. Ratio of male voters in Vasantpur and Govindpur 10 : 7 and total female voters in Vasantpur are 60% more than total female voters in Govindpur. Total male voters in Vilashpur are $42\frac{6}{7}\%$ more than total male voters in Govindpur.

**56.** Total male voters in Vasantpur are what percent more than total female voters in Vilashpur?
(a) 50% (b) 60% (c) 55%
(d) 45% (e) 40%

**57.** Find average number of female voters in Vasantpur and Vilashpur?
(a) 420 (b) 440 (c) 480
(d) 640 (e) 400

**58.** If 65% and 60% of total male and female voters are literate in Govindpur, then find total illiterate voters in Govindpur are what percent less than total female voters in Vilaspur?
(a) 33.25% (b) 31.25% (c) 35.25%
(d) 30.25% (e) 29.25%

**59.** Find the ratio of male voters in Govindpur to female voters Vasantpur ?
(a) 6 : 7 (b) 7 : 9 (c) 7 : 10
(d) 7 : 12 (e) 7 : 8

**60.** Find the difference between total male voters and total female voters in all the three villages?
(a) 400 (b) 480 (c) 440
(d) 420 (e) 500

**Directions (61-65):** Study the following table carefully & answer the following questions.

Table given below shows the distribution of number of bikes sold by 5 different shopkeepers in year 2016 and the ratio of two types of bike out of the total sold bikes by each shopkeeper.

| Shopkeeper | Total bike sold | Bajaj Bike : hero Bike |
|---|---|---|
| A | 18% | 3 : 2 |
| B | 22% | 7 : 3 |
| C | 20% | 5 : 9 |
| D | 15% | 3 : 7 |
| E | 1250 | 2 : 3 |

**61.** What is the difference of total Bajaj number of bike sold by A & E together and the number of total Hero bike sold by A & B together?
(a) 350 (b) 250 (c) 375
(d) 400 (e) 450

**62.** Number of Hero bike sold by D is what percent more/less than number of Bajaj bike sold by B?
(a) $43\frac{2}{3}\%$ (b) $31\frac{1}{9}\%$ (c) $31\frac{9}{11}\%$
(d) $41\frac{9}{11}\%$ (e) $33\frac{1}{11}\%$

**63.** If the total number of bike sold by C in 2017 is increased by 20% compared to that of in the previous year and number of total bike sold by D is also increased by 40% in 2017 as compared to that of in the previous year. Then find the total number of bike sold by D in 2017 is what percent of total number of bike sold by C in 2017?
(a) 72% (b) 92.2% (c) 87.5%
(d) 78.5% (e) 83.5%

**64.** Find the ratio of number of Bajaj bike sold by A to the number of Hero bike sold by C?
(a) 23 : 31 (b) 21 : 25 (c) 23 : 27
(d) 21 : 31 (e) 23 : 25

**65.** Find total no. of Bajaj bike sold by B, Hero bike sold by E and D together?
(a) 2045 (b) 1850 (c) 2470
(d) 2255 (e) 2350

**Directions (66-70):** In the given questions, two quantities are given, one as Quantity I and another as Quantity II. You have to determine relationship between two quantities and choose the appropriate option

66. What is area of the rectangle.
I. Length is 50% more than breadth.
II. Perimeter of square is 48 cm and breadth of rectangle is equal to side of square.
(a) only statement I
(b) Only statement II
(c) Both I and II together
(d) Either I or II alone
(e) Both statement together is not sufficient

67. What is age of Rahul after 2 years.
I. Average age of Arun and Neeraj is 24 years and ratio of age of Rahul to Arun is 2 : 3.
II. Neeraj is 4 years elder than Satish and ratio of age of Satish to Rahul is 1 : 2
(a) only statement I
(b) Only statement II
(c) Both I and II together
(d) Both statements together are not sufficient
(e) Either I or II alone

**68.** What is the speed of boat in still water when the upstream speed of boat is equal to the speed of stream?
I. Time required to cover certain distance upstream is 24 sec.
II. Time required to cover certain distance downstream is 8 sec.
(a) only statement I
(b) Only statement II
(c) Both I and II together
(d) Both together are not sufficient
(e) Either I or II

**69.** Find out the length of train X given that speed of train X is 20 m/sec.

I. Train X crosses another train Y moving in opposite direction in 6 sec and the speed of train Y is 50% more than the speed of train X.
II. Length of train Y is 50% less than length of train X.
(a) Both I and II together
(b) Only statement I
(c) Only statement II
(d) Both I and II together are not sufficient
(e) Either I or II alone

**70.** What is the total strength of company Adda247.
I. Ratio of male to female employees are 1 : 2
II. Total female are 280 and males are 50% of female.
(a) only I and II together
(b) Only statement I
(c) Only statement II
(d) Both I and II together are not sufficient
(e) Either I or II alone

**71.** If time taken to cover (A +4) km in upstream is 3 times the time taken to cover (A - 2) km in downstream. If ratio of speed of boat in upstream to that of in downstream is 1 : 2 & time taken to cover (A + 6) km in downstream is 2 hour. Then find speed of boat in still water?
(a) 4.5 km/hr (b) 5.5 km/hr (c) 7.5 km/hr
(d) 4 km/hr (e) 6 km/hr

**72.** Sandy has a vessel of capacity 16 litres full of mixture of wine & water and the percentage of wine in mixture is 75%. If sandy replaced some quantities of mixture with pure wine then the vessel contained only 10% of water. Quantity of water removed from the vessel is what percent of the capacity of vessel?
(a) 22% (b) 15% (c) 25%
(d) 18% (e) 20%

**73.** A solid cone of radius 13 cm & height 16 cm is re-casted into n hemispherical bowls of outer diameter 16 cm & inner diameter 14 cm. Find n?
(a) 14 (b) 12 (c) 10
(d) 6 (e) 8

**74.** Balls numbered 1 to 120 are kept in a basket. What is the probability that the drawn ball has a number which is multiple of 3 or 5?
(a) $\frac{11}{15}$ (b) $\frac{4}{13}$ (c) $\frac{7}{15}$
(d) $\frac{3}{5}$ (e) $\frac{8}{15}$

**75.** How many different words can be formed from the letters of the word 'EVOLUTION' such that word always ends with vowel?
(a) $2 \times \lfloor 9$ (b) $\lfloor 9$ (c) $2 \times \lfloor 7$
(d) $2 \times \lfloor 8$ (e) $\lfloor 8$

**Directions (76-80):** What should come in place of the question mark (?) in the following number series?

**76.** 8000, 3200, 1280, 512, 204.8 , ?
(a) 80.25 (b) 81.92 (c) 86.75
(d) 90.00 (e) 76.34

**77.** 33, 321, 465, 537, 573, ?, 600
(a) 321 (b) 465 (c) 573
(d) 537 (e) 591

**78.** 374, 355, 317, ?, 184, 89
(a) 248 (b) 255 (c) 265
(d) 278 (e) 260

**79.** 30, 45, 90, 225, 675, ?
(a) 1685 (b) 1791.5 (c) 2250
(d) 2362.5 (e) 2476.75

**80.** 3, 8, 16, 33, 57, ?
(a) 83 (b) 88 (c) 94
(d) 97 (e) 100

# Mock 10 : Solutions

## REASONING ABILITY

**Direction (1-5):**

**1. (c);** **I.** M < O (False) **II.** L = O (False)

**2. (b);** **I.** N > V (False) **II.** R > Y (True)

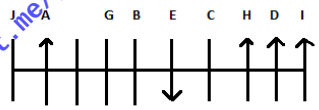
**3. (a);** **I.** S ≤ C (True) **II.** L > N (False)

**4. (e);** **I.** G > E (True) **II.** F ≤ Y (True)

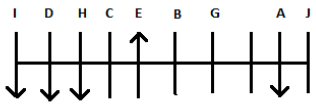
**5. (d);** **I.** S > W (False) **II.** P ≤ R (False)

**Directions (6-10):** Six persons sit between A and D and none of them sits at any end of the row. Both A and D faces same direction. Two persons sit between E and D. I sits fourth to the left of E. Only one person sit between H and I. Immediate neighbors of D face same direction as D. C sits to the immediate left of H. Two persons sit between J and G. G and B are not the immediate neighbors of A. We will have two possibilities-

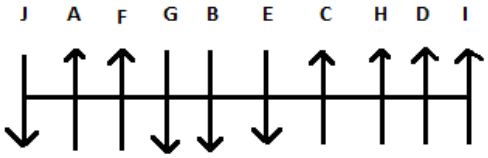
**Case 1**




**Case 2**

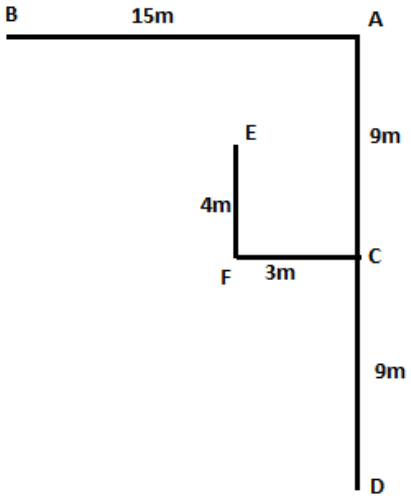



Now, persons sitting at the end face opposite directions. G and B face same direction as J. F faces north. Immediate neighbors of E face opposite direction. Since, the number of person facing south is not equal to the number of person facing north. This will eliminate case 2. So the final arrangement will be-




6. (b); 7. (e); 8. (d);
9. (c); 10. (d);

**Directions (11-13):**

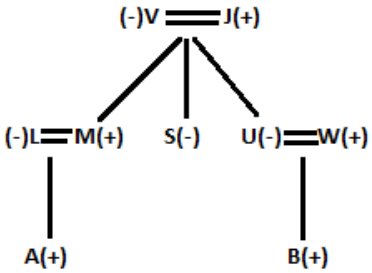



11. (d); Southeast

12. (b); Northeast

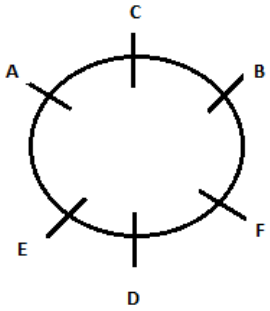
13. (c); Distance = $\sqrt{9^2 + 12^2}$ = 15m

**Directions (14-17):**

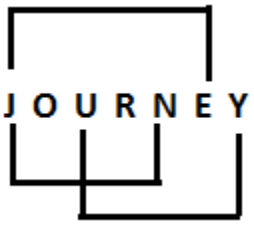



14. (c); 15. (b); 16. (a);
17. (c);

**Directions (18-21):** B sits second to the right of D. A does not face B. B is not an immediate neighbor of A. This will fix position of A to the second left of D. F does not face D. F does not sit to the immediate right of A. This will fix F to the immediate right of D. Now, C does not sit second to the right of E. So the final arrangement will be-




18. (b); 19. (c); 20. (d);
21. (c);
22. (c); Three




23. (d); 24. (c);
25. (d);

| P | O | U | R | I | N | G |
|---|---|---|---|---|---|---|
| 1 | 4 | 6 | 2 | 3 | $ | @ |

**Directions (26-30):** Let us understand the logic behind it- In each step one word and one number is arranged simultaneously, the numbers are arranged from right end and the words are arranged from left.

**For words-** One word will be arranged in each step. The word which comes last according to alphabetical series is arranged first from left and then all others words are arranged in the same manner.

**For numbers-** The numbers are arranged in decreasing order. The highest number is arranged first on right end and then the 2nd highest is arranged to right most end in the next step and so on.

**Input: roast 32 59 passion 44 treasure door 79 bill 11**
tep I: treasure roast 32 59 passion 44 door bill 11 79
tep II: roast treasure 32 passion 44 door bill 11 79 59
tep III: passion roast treasure 32 door bill 11 79 59 44
tep IV: door passion roast treasure bill 11 79 59 44 32
tep V: bill door passion roast treasure 79 59 44 32 11

26. (b); 27. (d); 28. (c);
29. (b); 30. (c);

**Directions (31-35):** E was born in the month having least number of days. Four persons were born between C and E. H is the youngest of them all. G was born in the month having maximum number of days. F was born immediately before G. B was born immediately after A. We will have two possibilities-

| Case 1 | | | Case 2 | | |
|---|---|---|---|---|---|
| **Month** | **11th** | **18th** | **Month** | **11th** | **18th** |
| Feb | E | A | Feb | | E |
| April | B | F | April | A | B |
| May | G | C | May | F | G |
| June | | H | June | C | H |

Now, D is not older than B. This will eliminate case 2. So the final arrangement will be-

| Month | 11th | 18th |
|---|---|---|
| Feb | E | A |
| April | B | F |
| May | G | C |
| June | D | H |

**31. (c); 32. (b); 33. (d);**
**34. (a); 35. (d);**

**Directions (36-40):** M speaks Maithili and is preparing for UPSC. P speaks Punjabi. L speaks English and does not prepare for UPSC. K is preparing for Banking and neither speaks Hindi nor Telugu. N does not speak Tamil. We will have following conditions-

| Students | Exams | Language |
|---|---|---|
| J | | |
| K | Banking | ~~Hindi, Telugu~~ |
| L | ~~UPSC~~ | English |
| M | UPSC | Maithili |
| N | | ~~Tamil~~ |
| O | | |
| P | | Punjabi |

P prepares only with the one who speak Tamil. J is preparing with the one who speaks Hindi. The one who speaks Tamil is not preparing for Banking. So the final arrangement will be –

| Students | Exams | Language |
|---|---|---|
| J | UPSC | Telugu |
| K | Banking | Bengali |
| L | Banking | English |
| M | UPSC | Maithili |
| N | UPSC | Hindi |
| O | SSC | Tamil |
| P | SSC | Punjabi |

**36. (c); 37. (d); 38. (e);**
**39. (e); 40. (b);**

## QUANTITATIVE APTITUDE

**41. (b);** Passed student in Hindi = $\frac{12}{100} \times 12{,}000 = 1440$

Failed student in Hindi = $1440 \times \frac{125}{100} = 1800$

Passed student in English = $12{,}000 \times \frac{20}{100} = 2400$

Required percentage = $\frac{1800}{2400} \times 100 = 75\%$

**42. (a);** Total passed student in Physics = $\frac{15}{100} \times 12{,}000 = 1800$

Passed student in Chemistry = $\frac{10}{100} \times 12{,}000 = 1200$

Required Ratio = $\frac{4000-1800}{1200} = \frac{2200}{1200} = 11 : 6$

**43. (d);** 25% of total student = 12,000

total student = 48,000

Total failed student = 48,000 – 12,000 = 36,000

Total passed student in Computer, Math and Hindi together = $\frac{55}{100} \times 12{,}000 = 6{,}600$

Required difference = 36,000 – 6,600 = 29,400

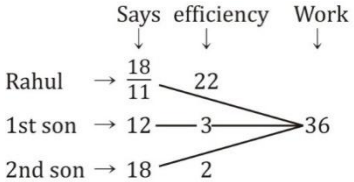
**44. (b);** Required percentage = $\frac{(20+15)-(10+12)}{(10+12)} \times 100$

$= \frac{35-22}{22} \times 100 = 59\frac{1}{11}\%$

**45. (e);** Total failed student = $\frac{12000}{2} \times 3 = 18{,}000$

Required average = $\frac{1}{2}\left[\frac{10+20}{100}\right] \times 18{,}000 = 2{,}700$

**46. (d);**




Rahul efficiency is twice than his all son together

∴ Rahul efficiency → 22

All 3 son efficiency → 11

∴ efficiency of 3rd child = 11- 3 – 2 = 6

∴ 3rd child can complete work alone

$= \frac{36}{6} = 6$ days

**47. (a);** $P \times \frac{130}{100} = Q$

=1.3P = Q ...(i)

$P \times \frac{90}{100} \times \frac{120}{100} = Q - 44$

1.08P = Q – 44 ...(ii)

Solving (i) & (ii)

P = 200

Q = 200 × 1.3 = Rs 260

**48. (c);** Let total capital be Rs 100

When

Profit = 8%

Abhi = $8 \times \frac{3}{8} = 3\ unit$

When profit = 16%

Abhi = $16 \times \frac{3}{8} = 6$ unit

Difference = 3 unit → 420

1 unit = $\frac{420}{3} = Rs\ 140$

∴ Total capital = 100 × 140 = Rs 14,000

$$\frac{\text{Abhi}}{3} : \frac{\text{Rahul} + \text{Rola}}{5}$$

8 unit = 14,000

1 unit = Rs 1750

∴ Capital invested by Rola = $\frac{1750 \times 5}{2} = Rs\ 4375$

**49. (d);** Let principal be Rs P

P + SI (for 5 years) = 5,000

P + SI (for 7 years) = 5,400

∴ SI for 2 years = 400

I for 1 years = Rs 200

∴ P = 5000 – 200 × 5

= Rs 4000

∴ Rate = $\frac{200 \times 100}{4000 \times 1}$

= 5%

**50. (b);** Lets total number of fruits seller have = 42x

Total number of mangoes seller have

$= 42x \times \frac{2}{7} = 12x$

Total number of orange seller have

$= 42x \times \frac{1}{6} = 7x$

ATQ,

12x + 7x + 46 = 42x

23x = 46

x = 2

Total number of fruit seller have

= 12 × 2 + 7 × 2 + 46 = 84

**51. (a);** ? = $\frac{144 \times 12 \times 36 \times 36}{432} = 5184$

**52. (d);** $(?)^2 = 121$

$? = 11$

**5. (d);** $? = \frac{7}{3} + \frac{17}{5} \times \frac{5}{4} - \frac{8}{3}$

$= \frac{7}{3} + \frac{17}{4} - \frac{8}{3}$

$= \frac{17}{4} - \frac{1}{3}$

$= \frac{51-4}{12} = \frac{47}{12}$

**54. (c);** $\frac{1898}{73} \times 72 = (?)^2 \times 13$

$\Rightarrow 26 \times 72 = (?)^2 \times 13$

$\Rightarrow (?)^2 = \frac{26 \times 72}{13} = 144$

$\therefore ? = \sqrt{144} = 12$

**55. (d);**

$\{(0.9)^2\}^2 \div \{(0.9)^3\}^3 \times (0.9)^2 = (0.9)^{?-3}$

$\Rightarrow (0.9)^4 \div (0.9)^9 \times (0.9)^2 = (0.9)^{?-3}$

$\Rightarrow (0.9)^{4-9+2} = (0.9)^{?-3}$

$\Rightarrow ? = 3 - 3 = 0$

**(56 –60):**

Total voters in Vasantpur = $2800 \times \frac{27}{70} = 1080$

Total voters in Govindpur = $2800 \times \frac{18}{70} = 720$

Total voters in Vilaspur = $2800 \times \frac{25}{70} = 1000$

Let total male voters in Vasantpur and Govindpur be 10x and 7x respectively

And total female voters in Govindpur = 5y

Total female voters in Vasantpur = 8y

ATQ –

10x + 8y = 1080 ---------- (i)

also, $7x + 5y = 720$ ---------- (ii)

From (i) and (ii) we get ------

x = 60, y = 60

Total male voters in Vilashpur = $7 \times 60 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 600$

| | Vasantpur | Govindpur | Vilaspur |
|---|---|---|---|
| **Male voters** | 600 | 420 | 600 |
| **Female voters** | 480 | 300 | 400 |

**56. (a);** Required percentage = $\frac{600 - 400}{400} \times 100 = 50\%$

**57. (b);** Required average = $\frac{480+400}{2} = 440$

**58. (a);** Total illiterate voters in Govindpur = $420 \times \frac{35}{100} + 300 \times \frac{40}{100} = 267$

Required percent = $\frac{400-267}{400} \times 100$

$= \frac{133}{400} \times 100 = 33.25\%$

**59. (e);** Required ratio = $\frac{420}{480} = 7 : 8$

**60. (c);** Required difference = (600 + 420 + 600) –(480 + 300 + 400) = 440

**61. (a);** Total bike sold by all shopkeeper
$= \frac{1250}{25} \times 100 = 5000$
Total Bajaj bike sold by A & E together
$= 5000 \times \frac{18}{100} \times \frac{3}{5} + 1250 \times \frac{2}{5}$
= 540 + 500 = 1040
Total Hero bike sold by A & B together
$= 5000 \times \frac{18}{100} \times \frac{2}{5} + 5000 \times \frac{22}{100} \times \frac{3}{10}$
= 360 + 330 = 690
Required difference = 1040 – 690 = 350

**62. (c);** Required percentage $= \frac{5000\times\frac{22}{100}\times\frac{7}{10} - 5000\times\frac{15}{100}\times\frac{7}{10}}{5000\times\frac{22}{100}\times\frac{7}{10}} \times 100$
$= \frac{770-525}{770} \times 100 = \frac{24500}{770} = \frac{350}{11} = 31\frac{9}{11}\%$

**63. (c);** Total bike sold by C in 2017
$= \frac{1250}{25} \times 20 \times \frac{120}{100} = 1200$
Total bike sold by D in 2017
$= \frac{1250}{25} \times 15 \times \frac{140}{100} = 1050$
Required percentage $= \frac{1050}{1200} \times 100 = 87.5\%$

**64. (b);** Required ratio $= \frac{18\times\frac{3}{5}}{20\times\frac{9}{14}}$
$= 21 : 25$

**65. (a);** Required total
$= \frac{1250}{25} \times 22 \times \frac{7}{10} + \frac{1250}{25} \times 15 \times \frac{7}{10} + 1250 \times \frac{3}{5}$
= 770 + 525 + 750 = 2045

**66. (c); From I**
Let breadth (b); be x cm
$\therefore$ length $(\ell) = \frac{150}{100} \times x = 1.5x$ cm
**From II**
Perimeter of square (4a) = 48 cm
$\therefore$ side of square (a); = 12 cm
$\ell$ = 12 × 1.5 = 18 cm
$\therefore$ Area of rectangle = $\ell$ × b = 18×12
= 216 $cm^2$
Can be answered from I & II both

**67. (c); From I**
Total age of Arun & Neeraj
= 48 year
**From II**
Let age of Satish be x year
age of Neeraj = (x +4) year
age of Rahul = 2x years
then, age of Arun= 3x years
ATQ,
$\frac{3x+x+4}{2} = 24\ years$
x=11 years
age of Rahul 2 years later= 2×11+2 = 24years
Can be answered from I & II together

**68. (d);** Let speed of boat in still water be x m/s
& speed of stream = y m/s
Atq,
x -y = y ⇒ x = 2y
From I & II
Let, distance be d m
(x -y)×24 = (x + y)×8
24y = 24y
$\therefore$ cannot be answered from I & II together

**69. (a);** peed of train X = 20 m/sec
Let length of train X be x m
**From II**
length of train Y = 0.5 x m
**From I**
peed of train Y = 20 × 1.5 = 30 m/sec
From I & II
$\frac{x+0.5x}{6} = 30 + 20$
x = 200 m

**70. (c); From II**
Female = 280
Male = $280 \times \frac{50}{100} = 140$
$\therefore$ total strength = 420
Can be answered from II only

**71. (c);** Let upstream speed be x km/hr & downstream speed be y km/hr
Atq,
$x = \frac{1}{2}y$ ...(i)
$\left(\frac{A+4}{x}\right) = 3\left(\frac{A-2}{y}\right)$ ...(ii)
Solving (i) & (ii)
A = 14 km
$y = \frac{14+6}{2} = 10$ km/hr
x = 5 km/hr
peed of boat in still water $= \frac{10+5}{2} = 7.5$ km/hr

**72. (b);** Quantity of water in mixture
$= 16 \times \frac{25}{100} = 4$ litre
Quantity of water in new mixture $= 16 \times \frac{10}{100} =$ 1.6 litre
Quantity of water removed = 4 – 1.6 = 2.4 litre
Required percentage $= \frac{2.4}{16} \times 100 = 15\%$

**73. (e);** Volume of cone $= \frac{1}{3}\pi r^2 h$ $\begin{bmatrix} r \rightarrow \text{radius} \\ r \rightarrow \text{height} \end{bmatrix}$
Volume of hemispherical bowl
$= \frac{2}{3}\pi[a^3 - b^3]$ $\begin{bmatrix} a \rightarrow \text{outer radius} \\ b \rightarrow \text{inner radius} \end{bmatrix}$
Atq,
$\frac{1}{3}\pi r^2 h = n \times \frac{2}{3}\pi\left[\left(\frac{16}{2}\right)^3 - \left(\frac{14}{2}\right)^3\right]$
$\frac{1}{3}\pi(13)^2 \times 16 = \frac{2}{3}\pi[169] \times n$
$n = \frac{16}{2} = 8$

**74. (c);** Multiple of 3 in 120 balls $= \frac{120}{3} = 40$

Multiple of 5 in 120 balls $= \frac{120}{5} = 24$

Multiple of 15 in 120 balls $= \frac{120}{15} = 8$

Therefore required no. of balls

$= 40 + 24 - 8 = 56$

$\therefore$ required probability $= \frac{56}{120} = \frac{7}{15}$

**75. (a);** Total words = 9

O is two times

$\therefore$ total vowels $= E, O, U, I$

Total words $= 4 \times \frac{\lfloor 9}{\lfloor 2} = 2\lfloor 9$

**76. (b);** Series is

$8000 \times \frac{2}{5} = 3200,$

$3200 \times \frac{2}{5} = 1280,$

$1280 \times \frac{2}{5} = 512,$

$512 \times \frac{2}{5} = 204.8,$

$204.8 \times \frac{2}{5} = 81.92$

So, $? = \ 204.8 \times \frac{2}{5} = 81.92$

**77. (e);** The pattern is-

33 + 288 = 321

321 + 144 = 465

465 + 72 = 537

537 + 36 = 573

573 + 18 = 591

591 + 9 = 600

**78. (e);** Series is

374–19 = 355,

355 –38 = 317,

317 –57 = 260,

260 –76 = 184,

184–95 = 89

So,

? = 317 – 57

= 260

**79. (d);** Series is

30×1.5 = 45,

45 ×2 = 90,

90 ×2.5= 225,

225 ×3 =675,

675 ×3.5 = 2362.5,

So,

? = 675 × 3.5 = 2362.5

**80. (c);** Series is $3 + (2^2 + 1) = 8,$

$8+(3^2 - 1) = 16,$

$16+(4^2 + 1) = 33,$

$33+(5^2 - 1) = 57,$

$57+(6^2 + 1) = 94$

So,

$? = 57 + (6^2 + 1)$

$= 57 + 37$

$= 94$

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## REASONING ABILITY

**Directions (1-5):** Study the following information carefully and answer the given questions:

Eight friends A, B, C, D, E, F, G and H are sitting around a square table in such a way that four of them sit at four corners of the square while the other four sit in the middle of each sides. All of them have different profession viz. Athlete, Singer, Dancer, Writer, Anchor, Actor, Businessman and Banker. The ones who sit at the four corners do not face outside the center while those who sit in the middle of the sides do not face inside.

Two persons sit between H who is a Businessman and F. The one who is a Dancer sits third to the right of F. Singer is neither an immediate neighbor of Businessman nor F. G sits to the immediate right of the Dancer. Two persons sit between G and C. A and D are immediate neighbors. The one who is an Actor sits opposite to the one who is an Anchor. F is not an Anchor. The one who is a Writer sits to the immediate right of the Athlete. C is not an Athlete. B is a Banker and faces inside. D does not sit third to the left of the Banker.

1. Who sits exactly between B and the Businessman when counted from the right of B?
   (a) D
   (b) A
   (c) The one who is a Writer
   (d) The one who is an Actor
   (e) None of these

2. What is the position of D with respect to E?
   (a) Second to the left
   (b) Third to the right
   (c) Second to the right
   (d) Third to the left
   (e) None of these

3. Four of the following five are alike in a certain way and so form a group. Who among the following does not belong to that group?
   (a) The one who is a Writer
   (b) The one who is an Athlete
   (c) The one who is a Singer
   (d) The one who is an Actor
   (e) The one who is an Anchor

4. What is the position of A with respect to the one who is a Dancer?
   (a) Second to the left
   (b) Second to the right
   (c) Immediate right
   (d) Immediate left
   (e) None of these

5. How many persons sit between the one who is a Banker and the one who is an Athlete?
   (a) One (b) Two (c) Three
   (d) Four (e) Cannot be determined

**Directions (6-10):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

6. **Statements:** $P \geq F \geq O$ ; $J \leq K = F$ ; $Y \geq K$
   **Conclusions:** **I.** $J \leq P$ **II.** $Y \geq O$

7. **Statements:** $D \geq E = F \geq O$ ; $G \leq H < F$ ; $T < O$
   **Conclusions:** **I.** $T < F$ **II.** $H > D$

8. **Statements:** $A \leq B \leq C = D$ ; $E = F \geq G \geq D$ ; $H > F$
   **Conclusions:** **I.** $F > A$ **II.** $E = A$

9. **Statements:** $Z < Y = X \leq W$ ; $U \geq V > W \leq S < T$
   **Conclusions:** **I.** $V < Z$ **II.** $T > Y$

10. **Statements:** $L \leq N = O < P$ ; $J \geq B > P < Q$ ; $K > J$
    **Conclusions:** **I.** $K < L$ **II.** $Q < K$

**Directions (11-13):** Study the following information and answer the given questions

Point Y is 12m to the North of Point X. Point Z is 8m to the East of Point W. Point M is 3m to the South of Point W. Point M is 4m to the West of Point N. Point Z lies exactly between Point X and Point Y.

11. In which direction is Point X with respect to Point N?
    (a) North (b) Northeast (c) South
    (d) Southwest (e) None of these

**12.** If Point V lies 6m to the North of Point W then how far is Point V from Point Y?
(a) 6m (b) 8m (c) 10m
(d) 12m (e) Cannot be determined

**13.** What is the shortest distance between Point Z and Point N?
(a) 3m (b) 4m (c) 5m
(d) 6m (e) None of these

**Directions (14-16):** Study the following information and answer the given questions.

In a family of nine members there are five male members. P is the father of M. M is married to N. N is the father of J. J is brother of O. R is the mother of T. T is married to S. S is daughter-in-law of P. K is the grandson of P and has no siblings.

**14.** How is N related to R?
(a) Son (b) Son-in-law (c) Nephew
(d) Grandson (e) None of these

**15.** How is O related to S?
(a) Nephew (b) Son (c) Daughter
(d) Niece (e) Either (a) or (d)

**16.** How is T related to M?
(a) Son (b) Husband (c) Brother
d) Brother-in-law (e) Cannot be determined

**17.** How many pairs of letters are there in the word "**CONNECT**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**18.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "POSTGRADUATE" then which of the following will be third to the right of the one which is ninth from the right end?
(a) A (b) O (c) P
(d) R (e) None of these

**19.** In a row of students facing North, Sam is 15$^{th}$ from the right end. Fourteen students sit between Raj and Sam. What is the minimum number of students possible in the row?
(a) 15 (b) 20 (c) 25
(d) 30 (e) Cannot be determined

**20.** In a certain code 'OFTEN' is written as '7@2$5' and 'MORE' is written as '37#$'. How is 'MENTOR' written in that code?
(a) 3$572# (b) 35$27# (c) 3$257#
(d) 3$527# (e) None of these

**Directions (21-25):** Study the following information carefully to answer the given questions.

Eight different lectures viz. History, Geography, Mathematics, Physics, Chemistry, English, Hindi and Biology are to be organized on four different days of the week viz. Monday, Tuesday, Friday and Saturday starting from Monday in two sessions i.e. Morning and Evening (but not necessarily in the same order).
The lecture of languages was organized on Friday. Geography was organized in the morning session but not on Monday. One lecture was organized between Physics and Geography. No lecture was organized after Chemistry. Mathematics was not organized immediately after English. History was organized on Tuesday. Mathematics and Chemistry was not organized on same session.

**21.** Which of the following subject was organized in the morning session of Friday?
(a) Mathematics (b) English (c) Hindi
(d) Either (b) or (c) (e) None of these

**22.** How many lectures were organized between Biology and Hindi?
(a) Two (b) Three (c) Four
(d) Five (e) Cannot be determined

**23.** Physics was organized on which among the following day and session?
(a) Tuesday- Morning Session
(b) Monday- Evening Session
(c) Saturday- Morning Session
(d) Monday- Morning Session
(e) Saturday- Evening Session

**24.** Which among the following lecture was organized immediately before Chemistry?
(a) Mathematics (b) Hindi (c) Biology
(d) Physics (e) Cannot be determined

**25.** Biology was organized on?
(a) Monday - Morning Session
(b) Saturday – Morning Session
(c) Tuesday – Evening Session
(d) Tuesday – Morning Session
(e) Monday – Evening Session

**Directions (26-30):** In each question below are given four statements followed by two conclusions which are numbered as I, and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts.

Mark your answer as –
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or conclusion II follows.
(d) If neither conclusion I nor conclusion II follows.
(e) If both conclusion I and conclusion II follow.

**26.** **Statements:** Some H is P. No H is L. Some L is T. All T is S.
Conclusions:
**I.** Some S is not H.
**II.** Some P is T.

**27.** **Statements:** All O is M. All M is N. Some N is S. No S is W.
**Conclusions:**
**I.** Some O can be S.
**II.** Some N can be W.

**28.** **Statements:** No K is R. All R is Z. Some Z is Y. No Y is X.
**Conclusions: I.** Some X is not R.
**II.** Some Z is not K.

**29.** **Statements:** Some B is D. All D is F. Some F is not J. All J is C.
Conclusions:
**I.** Some J is not B.
**II.** Some B is J.

**30.** **Statements:** All F is E. Some C is not E. Some G is F. All H is G.
**Conclusions: I.** Some H can never be E.
**II.** Some G is E.

**Directions (31-35):** Study the following information carefully and answer the questions given below:
A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input: season 27 often 42 perfect 12 enjoy 55 help 39**
Step I : enjoy season 27 often perfect 12 55 help 39 42
Step II : often enjoy season 27 perfect 55 help 39 42 12
Step III : help often enjoy season 27 perfect 39 42 12 55
Step IV : perfect help often enjoy season 27 42 12 55 39
Step V : season perfect help often enjoy 42 12 55 39 27
Step V is the last step of the above arrangement.
As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.
**Input: courage 22 old 29 basket 54 enter 33 rescue 61**

**31.** Which of the following element is eighth from the left end in Step III?
(a) enter (b) rescue (c) 54
(d) 61 (e) 22

**32.** Which of the following is Step II of the given input?
(a) old enter courage 29 basket 33 rescue 61 54 22
(b) old enter courage basket 29 33 rescue 61 54 22
(c) old enter courage 29 basket 33 rescue 54 61 22
(d) old enter courage 29 basket rescue 33 61 54 22
(e) None of these

**33.** Which element is sixth to the right of 'courage' in step V?
(a) 54 (b) 22 (c) 61
(d) 33 (e) None of these

**34.** Which element is fifth to the left of 'rescue' in step I?
(a) courage (b) old (c) 29
(d) 22 (e) None of these

**35.** Which of the following element is seventh from the right end in step IV?
(a) old (b) enter (c) rescue
(d) 54 (e) None of these

**Directions (36-40):** Study the following information carefully and answer the questions given below:
In a certain code language
'iron rusting black' is coded as 'ru ku bu'
'black is brown' is coded as 'ni bu su'
'rusting color brown ' is coded as 'lu ni ru'
'red color iron suit' is coded as 'dr st ku lu'

**36.** What is the code for 'red rusting'?
(a) ru ni
(b) dr ru
(c) st ru
(d) Cannot be determined
(e) Either (b) or (c)

**37.** What is the code for 'iron'?
(a) bu (b) su (c) ku
(d) lu (e) None of these

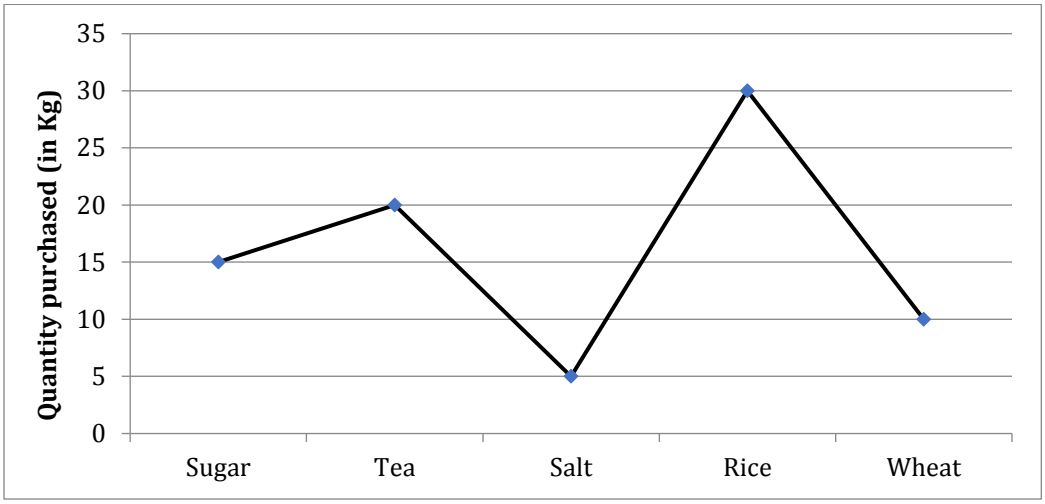
**38.** 'ni' is denoted as?
(a) is (b) rusting (c) black
(d) brown (e) None of these

**39.** What is the code for 'iron suit'?
(a) ku dr
(b) ku st
(c) dr st
(d) Either (a) or (b)
(e) Cannot be determined

**40.** If 'white suit' is coded as 'st wr', then 'red dawn' can be coded as?
(a) bu dr (b) dr su (c) dw dr
(d) ru dr (e) dr lu

## QUANTITATIVE APTITUDE

**Directions (41-46):** Line graph shows the quantity of 5 different products purchased by a person.




**41.** If sum of per kg cost of sugar and that of salt is Rs.90 and the ratio between per kg cost of sugar and that of salt is 3 : 2. Then, find the difference of total cost of sugar and total cost of salt ?
(a) Rs. 530 (b) Rs. 630 (c) Rs. 670
(d) Rs. 750 (e) Rs. 720

**42.** If total cost of Tea is Rs. 5000 and that of wheat is Rs. 450. Then cost per kg of wheat is what percent more or less than cost per kg of Tea ?
(a) 72% (b) 86% (c) 82%
(d) 78% (e) 92%

**43.** One kg of rice and one kg of sugar is purchased in Rs 450. If cost per kg of rice decreases by $33\frac{1}{3}\%$ & cost per kg of Sugar increases by $33\frac{1}{3}\%$ then total cost per kg of rice and sugar is Rs. 500. Then find cost per kg of sugar ?
(a) Rs. 300 (b) Rs. 350 (c) Rs. 200
(d) Rs. 250 (e) Rs. 450

**44.** If cost per kg of Tea & per kg of Rice is Rs. 220 & Rs. 50 respectively then find the ratio of total cost of tea to total cost of rice ?
(a) 53 : 15 (b) 44 : 17 (c) 41 : 17
(d) 47 : 15 (e) 44 : 15

**45.** Total quantity of sugar and salt purchased together is what percent more/less than the total quantity of Tea & wheat purchased together ?
(a) $48\frac{2}{3}\%$ (b) $37\frac{1}{3}\%$ (c) $66\frac{2}{3}\%$
(d) $33\frac{1}{3}\%$ (e) $42\frac{2}{3}\%$

**46.** If cost per kg of sugar, salt & rice is Rs. 10, Rs. 30 & Rs. 20 respectively then find the sum of difference of total cost of sugar and that of salt and difference of total cost of sugar and that of rice?
(a) Rs. 500 (b) Rs. 475 (c) Rs. 400
(d) Rs. 450 (e) Rs. 435

**47.** Abhi does a work for 4 days & left, the remaining work is completed by Satish in 18 days. If Abhi does that work for 6 days then the remaining work will be completed by Satish in 12 days. Then find in how many days Abhi alone can complete the whole work?
(a) 10 days (b) 12 days (c) 16 days
(d) 20 days (e) 24 days

**48.** A train crosses a tunnel which is half of its length with a speed of 144 km/hr. in ½ min, then find the time in which it will cross another train which is double of its length and standing on platform in opposite direction with 60% of its initial speed ?
(a) 120 sec. (b) 90 sec. (c) 150 sec.
(d) 100 sec. (e) 180 sec.

**49.** Arun sells his watch at a profit of $33\frac{1}{3}\%$ & his purse at a loss of $16\frac{2}{3}\%$ & on whole he gains Rs. 50. And if he sells his watch at a loss of $16\frac{2}{3}\%$ & purse at profit of $33\frac{1}{3}\%$ then there will be no profit no loss. Find cost price of the watch ?
(a) Rs. 300 (b) Rs. 100 (c) Rs. 250
(d) Rs. 200 (e) Rs. 150

**50.** Neeraj spent 22% of his monthly salary in Food, 20% of the remaining monthly salary in F.D. if his saving is Rs. 3120. Then find the expenses made by Neeraj on Food ?
(a) Rs. 1150 (b) Rs. 900 (c) Rs. 1000
(d) Rs. 1100 (e) Rs. 1200

**Direction (51-55):** Study the given passage carefully & answer the questions.`

In a sport Academy 'XY', there are some student who can play three games i.e. tennis, cricket & chess. Total number of players who play tennis is 160 & all three games are played by 10% of total tennis players. Ratio of cricket to chess players is 3:5 and total of cricket & chess players is 100% more than tennis players. Players who play both tennis and chess are $12\frac{1}{2}\%$ of total tennis players. Ratio of players who play both tennis & cricket to players who play both chess & cricket is 2:3 & total of players who play both tennis & cricket and players who play both chess & cricket is equal to one-fourth of chess players.

**51.** What is the average no. of players who play only one game?
(a) $139\frac{2}{3}$ (b) $129\frac{1}{3}$ (c) 135
(d) None of these (e) $129\frac{2}{3}$

**52.** Players who play chess but not cricket is approximately what percent of total players?
(a) 35% (b) 45% (c) None of these
(d) 40% (e) 50%

**53.** What is ratio of players who play both tennis & chess to players who play only cricket?
(a) 7 : 13 (b) 9 : 41 (c) 10 : 43
(d) None of these (e) 2 : 5

**54.** Players who play at least two games is approximately what percent of players who play utmost two games?
(a) 4% (b) 6% (c) 15%
(d)12% (e)9%

**55.** What is the difference between no. of players who can play tennis & players who play only cricket?
(a) 74 (b) 64 (c) 68
(d) None of these (e) 72

**Directions (56-61):** Study the table carefully and answer the following questions. Table given below shows the total number of students in five different classes in which some students take part in drama & some in painting & some students do not take part in any event.

| Class | Total number of students | Number of students who do not take part | Ratio of number of students who take part in (Drama : Painting) |
|---|---|---|---|
| 6th | 320 | 103 | 3 : 4 |
| 7th | 480 | 220 | 5 : 8 |
| 8th | 240 | 105 | 2 : 1 |
| 9th | 510 | 210 | 3 : 2 |
| 10th | 250 | 120 | 8 : 5 |

**56.** What is the difference between number of students who participate in Drama from class 7th and 8th together and number of students who participate in painting from class 9th and 10th together ?
(a) 20 (b) 30 (c) 35
(d) 25 (e) 40

**57.** Total number of students who do not take part from class 7th & 10th together is what percent more or less than total number of students who take part in painting from class 6th & 7th together ?(approx.)
(a) 15% (b) 30% (c) 20%
(d) 40% (e) 25%

**58.** What is the average of total number of students who take part in drama from class 6th, 8th and 9th ?
(a) 169 (b) 121 (c) 127
(d) 138 (e) 148

**59.** What is the ratio of total number of students who take part in Drama from class 8th & 9th together to total student who take part in painting from class 6th & 10th together ?
(a) 8 : 5 (b) 5 : 3 (c) 127 : 87
(d) 133 : 87 (e) 45 : 29

**60.** If number of students who do not take part in any activity from class 9th is increased by 50% then find number of students taking part in Drama is decreased by what percent if the ratio(Drama : Painting) remains same ?
(a) 40% (b) 45% (c) 35%
(d) 30% (e) 55%

**61.** Find the sum of number of students taking part in painting from class 7th, in Drama from class 9th & 10th together ?
(a) 540 (b) 320 (c) 360
(d) 420 (e) 480

**Directions (62-67):** What should come in place of the question mark (?) in the following series?

**62.** ? , 13.5 , 27 , 9 ,36 , 7.2
(a) None of these (b) 7.25 (c) 10
(d) 13.5 (e) 8.5

**63.** 102, 114 , 129 , 153 , 204, ?
(a) 292 (b) 282 (c) 309
(d) 2275 (e) 336

**64.** 813, ? , 818, 782, 998, –298
(a) 812 (b) 810 (c) None of these
(d) 816 (e) 814

**65.** 12 , 129 , 242 , 346 , 434, ?
(a) None of these (b) 497 (c) 517
(d) 493 (e) 513

**66.** 48, 216 , 756 , 1890, ? , 1417.5
(a) 2345 (b) 2735 (c) None of these
(d) 2745 (e) 2835

**67.** 9, 5, 7, 22, 120, ?
(a) 1100 (b) 1088 (c) 890
(d) 1050 (e) 1000

**68.** A fraction when subtracted from its reverse gives $\frac{7}{12}$ as a result and when added with the reverse gives $\frac{25}{12}$ as a result. Find the fraction.
(a) $\frac{4}{3}$ (b) $\frac{3}{4}$ (c) $\frac{5}{6}$
(d) $\frac{3}{7}$ (e) $\frac{1}{2}$

**69.** Mona and Sunny together can complete a work in 18 days. Where as Sunny and Bhavya together can complete the same work in 15 days. If Bhavya is 50% more efficient than Mona then find the time taken by Mona alone to complete the whole work.
(a) 36 days (b) 42 days (c) 45 days
(d) 24 days (e) 48 days

**70.** A boat can cover an equal distance in upstream and in downstream in 6 hours. If speed of boat in still water is 200% more than the speed of stream then find the time taken to cover the same distance in upstream.
(a) 5 hours (b) 3 hours (c) 4.5 hours
(d) 3.5 hours (e) 4 hours

**71.** A rectangular sheet is folded along its length to make a right circular cylinder. If ratio between magnitude of area of rectangular sheet to the magnitude of volume of cylinder is 1 : 7. Then find the radius of cylinder.
(a) 7 (b) 3.5 (c) 10.5
(d) 21 (e) 14

**72.** Prabhat invested Rs. 15600 on SI at rate of R% p.a. for 3 years & the interest obtained is Rs. 7020. If he invested the same amount at rate of (R+5)% p.a. for two years on CI then find the interest obtained by Prabhat?
(a) Rs. 6864 (b) Rs. 6250 (c) Rs. 6748
(d) Rs. 6468 (e) Rs. 6648

**73.** If the average age of father, mother & their 2 sons is 41 years. And 5 years ago, the ratio of ages of father, mother and two sons (elder and younger) was 7 : 4 : 3 : 2. Then find the sum of ages of two sons after 6 years ?
(a) 59 years. (b) 62 years (c) 57 years
(d) 47 years (e) 67 years

**74.** A bag contains 4 red, 5 yellow and 6 green balls. 3 balls are drawn randomly.
What is the probability that the balls drawn contain no yellow ball?
(a) $\frac{24}{91}$ (b) $\frac{33}{91}$ (c) $\frac{12}{65}$
(d) Data inadequate (e) None of these

**Directions (75-80):** What should come in place of the question mark (?) in the following questions. Find the approximate value?

**75.** $6561.01 \div (8.98 \times 3.01) \div 2.98 = ?$
(a) 27 (b) 54 (c) 72
(d) 81 (e) 78

**76.** $7364.99 + (5.01)^2 + \sqrt{?} = 7433.11$
(a) 1894 (b) 1681 (c) 1764
(d) 2025 (e) 1849

**77.** $127.001 \times 7.998 + 6.05 \times 4.001 = ?$
(a) 1440 (b) 1400 (c) 1000
(d) 1040 (e) 1140

**78.** $(215.9\% \ of \ 999.8 \div 9.99)^{1/3} + (42.01\% \ of \ 599.97) = ?$
(a) 252 (b) 258 (c) 268
(d) 278 (e) 248

**79.** $39.05 \times 14.95 - 27.99 \times 10.12 = (36.01 + ?) \times 4.98$
(a) 20 (b) 30 (c) 40
(d) 35 (e) 25

**80.** $335.01 \times 244.99 \div 35.001 = ?$
(a) 2345 (b) 2350 (c) 2320
(d) 2410 (e) 2335

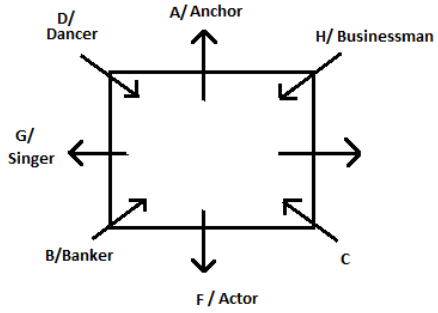
# Mock 11 : Solutions

## REASONING ABILITY

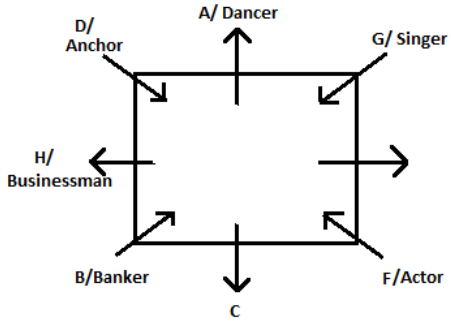
**Directions (1-5):**

The one who is a Dancer sits third to the right of F. Two persons sit between H who is a Businessman and F. Singer is neither an immediate neighbor of Businessman nor F. G sits to the immediate right of the Dancer. Two persons sit between G and C. The one who is an Actor sits opposite to the one who is an Anchor. F is not an Anchor. B is a Banker and faces inside. A and D are immediate neighbors. D does not sit third to the left of the Banker. We have two possibilities-

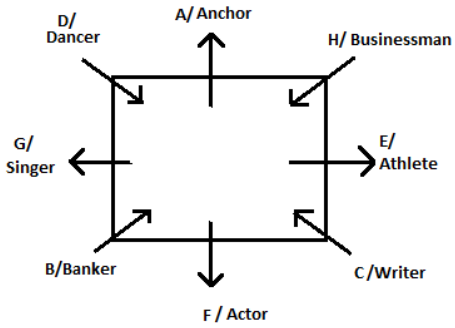
**Case 1**




**Case 2**




Now, the one who is a Writer sits to the immediate right of the Athlete. C is not an Athlete. This will eliminate Case 2. So the final arrangement will be –




**1. (c)** **2. (d)** **3. (a)**

**4. (d)** **5. (e)**

**Direction (6-10):**

**6. (e); I.** $J \leq P$ (True) **II.** $Y \geq O$ (True)

**7. (a); I.** $T < F$ (True) **II.** $H > D$ (False)

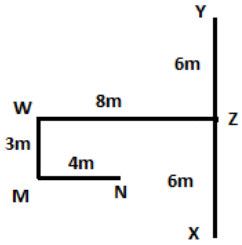
**8. (c); I.** $F > A$ (False) **II.** $E = A$ (False)

**9. (b); I.** $V < Z$ (False) **II.** $T > Y$ (True)

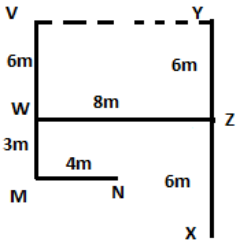
**10. (d); I.** $K < L$ (False) **II.** $Q < K$ (False)

**Directions (11-13):**

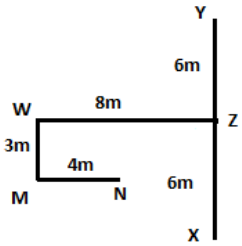
**11. (e); Southeast**



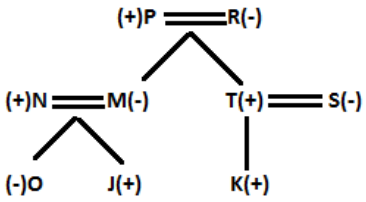

**12. (b); 8m**




**13. (c); Distance** = $\sqrt{3^2 + 4^2}$ = **5m**




**Directions (14-16):**



**14. (b)** **15. (d)** **16. (c)**

**17. (b)**


**18. (c)** **19. (d)**

**20. (d)**

| M | E | N | T | O | R |
|---|---|---|---|---|---|
| 3 | $ | 5 | 2 | 7 | # |

**Directions (21-25):**

The lecture of languages was organized on Friday. No lecture was organized after Chemistry. Geography was organized in the morning session but not on Monday. One lecture was organized between Physics and Geography. History was organized on Tuesday. We will have two possibilities-

Case 1

| Days | Morning Session | Evening Session |
|---|---|---|
| Monday | Physics | |
| Tuesday | Geography | History |
| Friday | English | Hindi |
| Saturday | | Chemistry |

Case 2

| Days | Morning Session | Evening Session |
|---|---|---|
| Monday | Physics | |
| Tuesday | Geography | History |
| Friday | Hindi | English |
| Saturday | | Chemistry |

Now, Mathematics was not organized immediately after English. Mathematics and Chemistry was not organized on same session. This will eliminate Case 2. So the final arrangement will be -

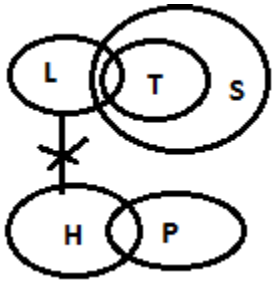
| Days | Morning Session | Evening Session |
|---|---|---|
| Monday | Physics | Biology |
| Tuesday | Geography | History |
| Friday | English | Hindi |
| Saturday | Mathematics | Chemistry |

**21. (b);** **22. (b);** **23. (d);**

**24. (a);** **25. (e);**

**Directions (26-30):**

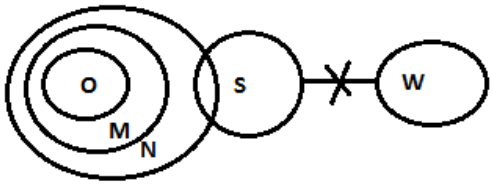
**26. (a)**




For I – From Venn diagram it is clear that all L which are S cannot be H. Hence, Conclusion I can be concluded.

For II – Since, there is no direct relation between P and T therefore Conclusion II will not hold true.

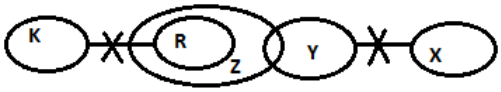
**27. (e);**




For I – There is no direct relation between O and S, therefore possibility case will hold true. Hence, Conclusion I can be concluded.

For II – Since there is no direct relation between N and W, therefore possibility case will hold true. Hence, Conclusion II can be concluded.

**28. (b);**




For I –Since there is no direct relation between X and R, therefore conclusion I will not hold true.

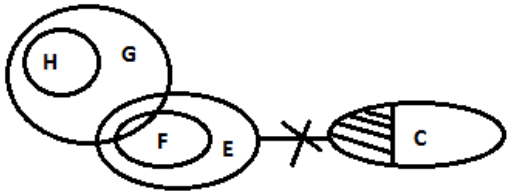
For II – All Z which are R cannot be K, so conclusion II will hold true.

**29. (c);**


For I – Since, there is no direct relation between J and B, therefore Conclusion I will not hold true. Hence, Conclusion I cannot be concluded.

For II – Since, there is a no direct relation between J and B, therefore Conclusion II will not hold true. Hence, Conclusion II cannot be concluded.
Since both conclusions are false having same elements and it is a case of 'some' and 'some not'. Therefore "Either or" will follow.

**30. (b);**




For I – Since there is no direct relation between H and E therefore conclusion I will not hold true. For II – From Venn diagram it is clear that some G are E. Hence, Conclusion II can be concluded.

**Directions (31-35):**
Let us understand the logic behind it- In each step one word and one number is arranged simultaneously, the numbers are arranged from right end and the words are arranged from left.
For words- One word will be arranged in each step. The words which start with vowels are arranged first in alphabetical order, then the word which start with consonants are arranged
For numbers- Firstly even numbers are arranged in decreasing order than odd numbers are arranged in decreasing order.
Input: **courage 22 old 29 basket 54 enter 33 rescue 61**
Step I: enter courage 22 old 29 basket 33 rescue 61 54
Step II: old enter courage 29 basket 33 rescue 61 54 22
Step III: basket old enter courage 29 33 rescue 54 22 61
Step IV: courage basket old enter 29 rescue 54 22 61 33
Step V: rescue courage basket old enter 54 22 61 33 29

**31. (c)** **32. (a)** **33. (c)**

**34. (d)** **35. (b)**

**Directions (36-40):**
Codes of elements are:

| Codes | Elements |
|---|---|
| iron | ku |
| black | bu |
| is | su |
| brown | ni |
| rusting | ru |
| color | lu |
| red/suit | dr/st |

**36. (e)** **37. (c)** **38. (d)**

**39. (d)** **40. (c)**

## QUANTITATIVE APTITUDE

**41. (b);** Cost per kg of sugar $= 90 \times \frac{3}{5} =$ Rs. 54
Cost per kg of salt $= 90 \times \frac{2}{5} =$ Rs. 36
Required difference $= 15 \times 54 - 5 \times 36$
$= 810 - 180 =$ Rs. 630

**42. (c);** Cost per kg of tea $= \frac{5000}{20} =$ Rs. 250
Cost per kg of wheat $= \frac{450}{10} =$ Rs. 45
Required percentage $= \frac{250-45}{250} \times 100 = 82\%$

**43. (a);** Let cost per kg of rice be Rs. x
& cost per kg of sugar be Rs. y
ATQ,
$x + y = 450$ ...(i)
After change
$x \times \frac{2}{3} + y \times \frac{4}{3} = 500$
$2x + 4y = 1500$
$x + 2y = 750$ ...(ii)
From (i) & (ii)
$y =$ Rs. 300

**44. (e);** Required ratio $= \frac{20\times220}{30\times50} = 44 : 15$

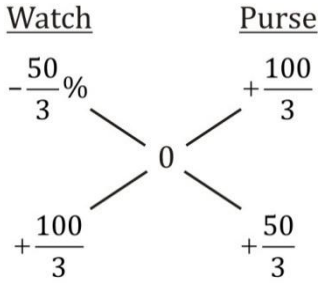
**45. (d);** Required percentage $= \frac{(20+10)-(15+5)}{(20+10)} \times 100 = 33\frac{1}{3}\%$

**46. (d);** Required sum $= (15\times 10 - 5 \times 30) + (30\times 20 - 15 \times 10) =$ Rs. 450

**47. (a);** Let efficiency of Abhi & Satish be a & b respectively
Total work $= 4a + 18b$ ...(i)
2nd condition
Total work $= 6a + 12b$ ...(ii)
From (i) & (ii)
$4a + 18b = 6a + 12b$
$a = 3b$
So, total work $= 4(3b) + 18b = 30b$
Abhi alone can complete the whole work in $= \frac{30b}{3b}$
$= 10$ days.

**48. (d);** Let length of train = 2L m
Length of tunnel = L m
ATQ,
$3L = 144 \times \frac{5}{18} \times 30$
$L = 400$ m
Length of train = 800 m
∴ Length of other train = $2 \times 800 = 1600$ m
60% of speed = $144 \times \frac{5}{18} \times \frac{60}{100} = 24$ m/sec.
∴ $(1600 + 800) = 24 \times$ time
∴ time = 100 sec.

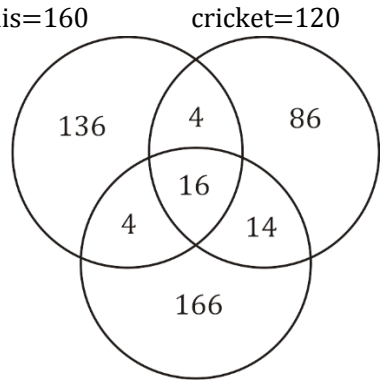
**49. (d);** Using Alligation,




Watch : Purse = 2 : 1
Let cost price of watch be Rs. 2x
Purse be Rs. x
ATQ,
$\frac{100}{300} \times 2x - \frac{50}{300} \times x = 50$
$x =$ Rs. 100
∴ cost price of watch = $2 \times 100 =$ Rs. 200

**50. (d);** Let total monthly salary of Neeraj be Rs. 100x
ATQ,
His saving = $100x - 22x - 15.6x = 62.4x$
∴ $62.4x = 3120$
$x = 50$
∴ monthly salary = Rs. 5000
∴ expense of Neeraj on Food = $\frac{22}{100} \times 5000$ = Rs. 1100

**Sol. (51-55):**
Players who play tennis = 160
Players who play all three games = $160 \times \frac{10}{100} = 16$
Let players who play cricket & chess be 3x & 5x respectively.
ATQ,
$8x = 160 \times 2 = 320$
$x = 40$
∴ Cricket players=120
And chess players=200
Players who play both tennis and chess = $\frac{1}{8} \times 160 = 20$
Let players who play both tennis and cricket and players who play both chess and cricket be 2y & 3y respectively.
ATQ,
$5y = 50 \Rightarrow y = 10$
Total no. of players
$= 136 + 166 + 86 + 4 + 4 + 14 + 16 = 426$




**51. (b);** Required average = $\frac{136+166+86}{3}$
$= \frac{388}{3} = 129\frac{1}{3}$

**52. (d);** Required percentage = $\frac{170}{426} \times 100$
$\simeq 40\%$

**53. (c);** Required ratio = $\frac{20}{86} = 10:43$

**54. (e);** Required percentage = $\frac{(4+4+16+14)}{426-16} \times 100$
$= \frac{3800}{410} = 9\%$

**55. (a);** Required difference = 160 – 86
= 74

**56. (a);** Number of Students who participate in Drama from class 7th & 8th together
$= (480 - 220) \times \frac{5}{13} + (240 - 105) \times \frac{2}{3}$
$= 100 + 90$
$= 190$
Number of Students who take part in Painting from class 9th & 10th together
$= (510 - 210) \times \frac{2}{5} + (250 - 120) \times \frac{5}{13}$
$= 120 + 50$
$= 170$
Required difference = 190 – 170 = 20

**57. (c);** Total number of students who do not take part from class 7th and 10th together=220+120=340
Total students who take part in painting from class 6th & 7th together
$= (320 - 103) \times \frac{4}{7} + (480 - 220) \times \frac{8}{13}$
$= 124 + 160 = 284$
Required percentage = $\frac{340-284}{284} \times 100 \simeq 20\%$

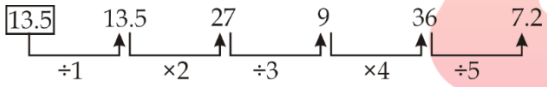
**58. (b);** Required average $= \left(\frac{1}{3}\left[(320-103)\times\frac{3}{7}+(240-105)\times\frac{2}{3}+(510-210)\times\frac{3}{5}\right]\right.$
$= \frac{1}{3}[93+90+180]$
$= 121$

**59. (e);** Required ratio $= \frac{(240-105)\times\frac{2}{3}+(510-210)\times\frac{3}{5}}{(320-103)\times\frac{4}{7}+(250-120)\times\frac{5}{13}}$
$= \frac{90+180}{124+50} = \frac{270}{174}$
$= 45:29$

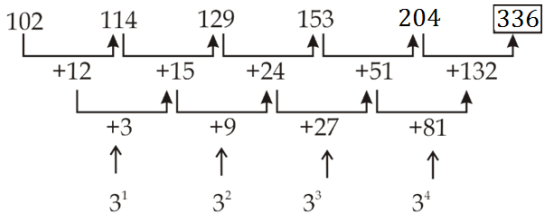
**60. (c);** Total new students from class 9th who do not take part in any activity $= 210\times\frac{150}{100} = 315$.
Total student taking part in Drama previously
$= (510-210)\times\frac{3}{5} = 180$
Total student taking part in Drama now
$= (510-315)\times\frac{3}{5} = 117$
Required percentage $= \frac{180-117}{180}\times 100 = 35\%$

**61. (d);** Required sum $= (480-220)\times\frac{8}{13}+(510-210)\times\frac{3}{5}+(250-120)\times\frac{8}{13}$
$= 160+180+80$
$= 420$

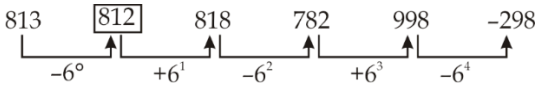
**62. (d);**



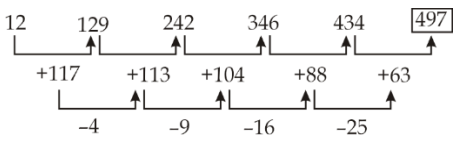

**63. (e);**



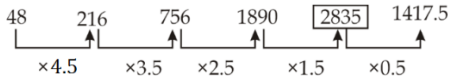

**64. (a);**




**65. (b);**




**66. (e);**




**67. (b);** Series is
×½+0.5, ×1+2, ×2+8, ×4+32, ×8+128
⇒ 120 × 8 + 128 = 1088

**68. (b);** Let fraction is $\frac{x}{y}$
And reverse $= \frac{y}{x}$
$\rightarrow \frac{y}{x}-\frac{x}{y} = \frac{7}{12}$ ...(i)
$\rightarrow \frac{y}{x}+\frac{x}{y} = \frac{25}{12}$ ...(ii)
Solving (i) and (ii)
$\frac{x}{y} = \frac{3}{4}$

**69. (c);** Let efficiency of Mona and Sunny is a and b respectively.
So, Bhavya's efficiency = 1.5a
ATQ,
(a + b) × 18 = (1.5a + b)15
$\frac{a}{b} = \frac{2}{3}$
Time taken by Mona ⇒ $\frac{\left(a+\frac{3}{2}a\right)\times 18}{a} = 45$ days

**70. (e);** Let speed of stream be x km/h
So, speed of boat = 3x km/h
Speed of boat in upstream = 2x km/h
Speed of boat in downstream = 4x km/h
Ratio of speed of boat in downstream and upstream is 2 : 1
So ratio of time taken = 1 : 2
So time taken in upstream $= \frac{2}{(1+2)}\times 6 = 4$ hour

**71. (e);** Let radius of cylinder = r
and height = h
So area of rectangle = C.S.A. of cylinder
⇒ 2πrh
Now given ratio $= \frac{2\pi rh}{\pi r^2 h} = \frac{1}{7}$
r = 14

**72. (a);** We know,
S.I. $= \frac{P\times R\times time}{100}$ $\left[\begin{matrix}P\rightarrow Principal\\R\rightarrow Rate\end{matrix}\right]$
$7020 = \frac{15600\times R\times 3}{100}$
R = 15%
R + 5 = 20%
C.I. $= 15600\left[\left(1+\frac{20}{100}\right)^2-1\right]$
C.I. $= 15600\left[\frac{36}{25}-1\right]$
$= 15600\times\frac{11}{25} =$ Rs. 6864

**73. (e);** Let total present age of father, mother & two sons
= 41 × 4 = 164 years
Let total ages, 5 years before be 16x
ATQ,
16x = 164 − 20 = 144
x = 9 years
∴ Total age of both sons after 6 years = 9 × 3 + 9 × 2+10 + 12 = 67 years

**74. (a);** There are four cases → 3R, (1R, 2G), (2R, 1G), 3G
∴ Required probability
$= \frac{{}^4C_3+{}^4C_1\times{}^6C_2+{}^4C_2\times{}^6C_1+{}^6C_3}{{}^{15}C_3}$
$= \frac{4+4\times15+6\times6+20}{91\times5}$
$= \frac{4+60+36+20}{91\times5}$
$= \frac{120}{91\times5} = \frac{24}{91}$

**75. (d);** $? = \frac{6561}{9\times3\times3} = 81$

**76. (e);** $7365 + 25 + \sqrt{?} = 7433$
$\sqrt{?} = 7433 - 7390$
$\sqrt{?} = 43$
or, $? = 1849$

**77. (d);** $? \approx 127 \times 8 + 6 \times 4$
$? = 1016 + 24$
$? = 1040$

**78. (b);** $? \approx \left(\frac{216\times1000}{100\times10}\right)^{\frac{1}{3}} + \left(\frac{42\times600}{100}\right)$
$= 6 + 252$
$?= 258$

**79. (e);** $\frac{39\times15-28\times10}{5} = 36+?$
$\Rightarrow 61 = 36 + ?$
$\therefore \ ? = 25$

**80. (a);** $? = 335 \times 245 \div 35$
$= 335 \times \frac{245}{35} \approx 2345$

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## REASONING ABILITY

**Directions (1-3):** Study the following information carefully and answer the questions given below:

Five persons P, Q, R, S and T are giving presentation on different dates 12th, 15th, 17th, 26th and 28th of same month but not necessarily in the same order. Each date represents different events i.e. Kargil Vijay Diwas, International Malala day, World hepatitis day, World youth skill day, World justice day but not necessarily in the same order. More than two persons gave presentations between the date representing International Malala day and World hepatitis day. World youth skill day is not represented on 12th. Only one person gave presentation after Q, who does not give presentation on world youth skill day. S gave presentation at last and on World hepatitis day. R gave representation on 12th. T gave presentation on the date which represents World justice day. P did not give presentation on 17th and 26th.

**1.** T gives presentation on which date?
(a) 12th (b) 15th (c) 17th
(d) 26th (e) 28th

**2.** Kargil Vijay Diwas is on which day and who gives presentation on it?
(a) 15th ,R (b) 17th , Q (c) 26th , Q
(d) 17th , R (e) 15th , P

**3.** Who among the following gives presentation on World youth skill day?
(a) P (b) Q (c) R
(d) S (e) T

**Directions (4-5):** Study the following information carefully and answer the questions given below:

There are eight members in a family in which two are married couples. S is grandmother of K. B is father-in-law of A. C is mother of D. J is brother of K and his mother is D. J and K are unmarried.

**4.** How is S related to D?
(a) mother (b) sister (c) mother-in-law
(d)grandmother (e) None of these

**5.** How is C related to K?
(a) mother
(b) mother-in-law
(c) Paternal grandmother
(d) Maternal grandmother
(e) Cannot be determined

**Directions (6-10):** In each of the questions below. Some statements are given followed by conclusions/group of conclusions numbered I and II. You have to assume all the statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given two conclusions logically follows from the information given in the statements.
(a) If only conclusion I follows
(b) If only conclusion II follows
(c) If either I or II follows
(d) If neither I nor II follows
(e) If both I and II follow

**6.** **Statements:** Some Tea are coffee
All coffee are milk
All tea are water
**Conclusions:**
**I.** Some tea are milk is a possibility
**II.** Some milk are water

**7.** **Statements:** Some red are brown
All brown are green
No blue is brown
**Conclusions:**
**I.** Some green are not blue
**II.** All red can be blue

**8.** **Statements:**
All key are row
No row is table
All row are column
**Conclusions:**
**I.** No key is table
**II.** Some column are not table

**9.** **Statements:**
Some chair are cross
All cross are line
Some table are cross
**Conclusions:**
**I.** Some chair are line
**II.** Some table are chair

**10.** **Statements:**
Some paint are brush
All color are brush
No color is canvas
**Conclusions:**
**I.** Some paint are canvas
**II.** All brush are canvas

**Directions (11-15):** Study the following arrangement carefully and answer the following questions given below:
7 ^ L U $ W T 4 B % R # F H * I 2 D 1 M P 5 @ Q 8 E 3 O 6

**11.** Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group?
(a) 7U$ (b) T%R (c) FI2
(d) M@Q (e) QE3

**12.** How many such alphabets are there in the above arrangement each of which is immediately preceded by a symbol and immediately followed by a number?
(a) None (b) One (c) Two
(d) Three (e) More than three

**13.** Which of the following element is the fifth to the right of the eighteenth from the right end of the above arrangement?
(a) ^ (b) I (c) O
(d) M (e) 2

**14.** Which of the following is exactly between the element which is tenth from the right end and the one which is eight from the left end of the above arrangement?
(a) * (b) H (c) I
(d) 2 (e) #

**15.** If all the symbols are dropped from the above arrangement, which of the following will be the ninth to the left of M?
(a) U (b) W (c) 4
(d) T (e) B

**Directions (16-20):** Study the information and answer the following questions:

Ten people are sitting in two parallel rows containing five people each, in such a way that there is an equal distance between adjacent persons. In row-1, E, K, C, G and I are seated and all of them are facing north. In row-2, J, H, D, F and B are seated and all of them are facing south. Therefore, in the given seating arrangement members of each row sits opposite to each other. C sits opposite to B and 3rd right to K. Two people sit between F and H. I is to the left of G but not immediate left. G does not sit opposite to D nor faces H. J sits 2nd to the right of H. D does not sit at any of the end.

**16.** Who sits second to the right of E?
(a) K (b) G (c) C
(d) I (e) Cannot be determined

**17.** Which pair among the following sits in the middle of both rows?
(a) K, G (b) F, E (c) G, D
(d) E, D (e) B, C

**18.** Who among the following sit third to the left of J?
(a) F (b) D (c) H
(d) B (e) Cannot be determined

**19.** Four of the following five belongs to a group. Who does not belong to the group?
(a) H (b) F (c) I
(d) C (e) B

**20.** Who among the following sits at any of the extreme end?
(a) C (b) G (c) H
(d) J (e) K

**Directions (21-25):** Study the information and answer the following questions:
In a certain code language
Bus travel road miles" is coded as "ro mj un lk"
train miles seat transport" is coded as " mo nj ka ro"
Train travel track road" is coded as " sa un ka lk"
bus seat track platform" is coded as "mo sa mj wl"

**21.** What is the code for "track platform"?
(a) sa nj (b) wl un (c) sa wl
(d) ka lk (e) None of these

**22.** Which of the following is denoted as "un"?
(a) travel (b) track (c) road
(d) either(a) or(c) (e) either(b) or(c)

**23.** What is the code for "miles seat"?
(a) ro mo (b) mo ka (c) un ro
(d) lk nj (e) ro wl

**24.** If "distance travel" is coded as "jy un" then what can be the code for "distance train road"
(a) jy lk nj (b) jy ka un (c) lk jy ka
(d) wl jy sa (e) lk wl sa

**25.** Which of the following is denoted as "wl mj"?
(a) travel seat (b) bus miles (c) platform road
(d) track seat (e) platform bus

**Directions (26-30):** Study the following information carefully and answer the questions given below:

Five persons S1, S2, S3, S4 and S5 lives in different floors of a same building i.e. Ground floor is numbered 1, the floor above that is 2 and so on till top floor which is numbered 5. Each of them studies different subjects viz. Maths, English, Phy, Bio and Chem. One person lives between S3 and S4, who does not live on odd numbered floor. S1 does not studies Chem. One person lives between the person who studies Maths and the one who studies Chem. S5 lives below S4 but not immediately below and he does not study Chem. The person who studies Maths lives just above the floor of S3. Two persons live between S2 and the one who studies English. The one who studies Phy does not live on even numbered floor.

**26.** Who among the following studies Maths?
(a) S1 (b) S2 (c) S3
(d) S4 (e) S5

**27.** Which subject is studied by the one who lives just above the floor of S1?
(a) Maths (b) Bio (c) Chem
(d) Phy (e) English

**28.** The person who studies English lives on which floor?
(a) 1st (b) 2nd (c) 3rd
(d) 4th (e) 5th

**29.** How many persons live between S5 and the one who studies Bio?
(a) one (b) two (c) three
(d) four (e) five

**30.** Who among the following lives on topmost floor?
(a) S5 (b) S4 (c) S3
(d) S2 (e) S1

**Directions (31-35):** Each of the following questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer.

(a) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient in answer the question.
(b) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(c) if the data in either in statement I alone or in statement II alone are sufficient to answer the question.
(d) if the data in both the statements I and II together are not sufficient to answer the question.
(e) if the data in both the statements I and II are together necessary to answer the question.

**31.** How is S related to E?
I. W is father of X and P is grandson of E, who is wife of W.
II. G is mother of S, who is sister of P. G is daughter in law of W.

**32.** Among five friends P, Q, R, S and T having different heights, who is the tallest?
I. R is taller than only one friend. Only one friend is taller than T. P is not shortest.
II. R is shorter than only three persons. Only one person is taller than T. P is neither the tallest nor the shortest in the group. Q is the shortest in group.

**33.** What is code of 'sum'?
I. 'sum of two number' is coded as- ' sa mn ta cq' and ' two third of number' is coded as ' cq ca mn sa' .
II. 'sum are wind up' is coded as- 'la za ta cm'.

**34.** Point 'P' is in which direction with respect to point 'Q'?
I. Point P is north west of point A which is west of point B. Point Q is north of point B.
II. Point Q is north east of point A which is north of point B. Point P is west of point B.

**35.** Four friends viz. M, N, O and P are sitting around a circular table. Are they facing to the center of table? If-
I. N is sitting second to the right of P. P is facing center. O is sitting immediate right of N and P.
II. M is sitting immediate left of N. O is not sitting immediate left of M. O is sitting immediate right of P.

**36.** If in a certain code "ROUND" is coded as "54739", "TRUE" is coded as "1572" then How is "RUDE" coded?
(a) 9731 (b) 5712 (c) 7432
(d) 5792 (e) 4325

**Directions (37-38):** Study the following information carefully and answer the questions given below
In a row of 29 persons all facing North Sumit is at 19th position from left end. Shivani is at 17th position from right end.

**37.** What is the position of Naveen from right end who sits exactly between Sumit and Shivani?
(a) 16th (b) 12th (c) 15th
(d) 13th (e) 14th

**38.** If few more persons join the row and one of the new members Harsh, is at extreme right end now and is twelfth to the right of Sumit then how many persons join the row afterwards?
(a) one (b) two (c) three
(d) four (e) Cannot be determined

**39.** If each consonant in the word "ELEPHANT" is changed to the previous letter in the English alphabetical series and each vowel is changed to the next letter in the English alphabetical series, and then the alphabets so formed are arranged in an alphabetical order from left to right, which will be the third from the right?
(a) F (b) O (c) S
(d) G (e) M

**40.** How many such pairs of letters are there in the word MODERN, each of which has as many letters between them in the word (in both forward and backward directions) as they have between them in the English alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) More than three

# QUANTITATIVE APTITUDE

**Direction (41-45) :** Find the wrong number in the following number series.

**41.** 120, 143, 189, 258, 348, 465
(a) 120 (b) 143 (c) 258
(d) 348 (e) 465

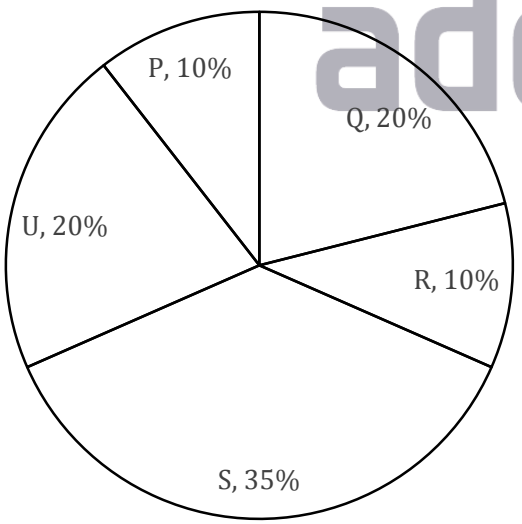
**42.** 255, 216, 175, 132, 85, 32
(a) 255 (b) 216 (c) 175
(d) 85 (e) 32

**43.** 27, 48, 80, 134, 221, 355
(a) 221 (b) 27 (c) 355
(d) 48 (e) 134

**44.** 11, 10, 19, 56, 223, 1115
(a) 1115 (b) 6 (c) 11
(d) 223 (e) 56

**45.** 292, 291, 295, 268, 284, 161
(a) 292 (b) 284 (c) 291
(d) 268 (e) 161

**Direction (46-50) :** The given below pie chart shows the percentage distribution of daily consumption of quantity of water by five different families in a building. Read the pie-chart carefully and answer the following questions.
Total quantity of water consumed in a day =7,000 liters.
**Note-**Total quantity of water available = Total quantity of water consumed + total quantity of unused water




**46.** The average of quantity of water consumed by families P and S is what percent more/less than the average of quantity of water consumed by families R and U?
(a) 25% (b) 50% (c) $33\frac{1}{3}\%$
(d) 60% (e) 75%

**47.** If 87.5% of the quantity of water available is consumed by all families. Then, find the ratio of quantity of unused water to the difference of the quantity of water consumed by families S and Q?
(a) 6 : 7 (b) 44 : 45 (c) 62 : 63
(d) 20 : 21 (e) 14 : 15

**48.** Find the ratio of the quantity of water consumed by family S and U together to the quantity of water consumed by families P and R together?
(a) 11 : 4 (b) 5 : 4 (c) 3 : 2
(d) 13 : 8 (e) 15 : 8

**49.** $3\frac{1}{7}\%$ of quantity of water consumed by family S is what percent of quantity of water consumed by R.
(a) $7\frac{1}{2}\%$ (b) $8\frac{1}{2}\%$ (c) 10%
(d) 12.5% (e) 11%

**50.** The difference of the quantity of water consumed by families U and S is how much more than the difference of the quantity of water consumed by family Q and R?
(a) 350 liter (b) 320 liter (c) 330 liter
(d) 360 liter (e) 340 liter

**51.** Shalini's present age is five times of her daughter's present age and the ratio between Shalini's present age to her father's present age is 2 : 5. If the average age of all the three 6 years hence will be 43 years, then find the ratio of present ages of her daughter to the difference of the ages of Shalini and her father?
(a) 1 : 12 (b) 2 : 13 (c) 1 : 7
(d) 2 :15 (e) 1 : 8

**52.** Kishan and Bhavya appear in an interview for a vacancies. The probability of Kishan's selection is $\frac{1}{7}$ and that of Bhavya's selection is $\frac{1}{5}$. What is the probability that one of the them will be selected?
(a) $\frac{5}{7}$ (b) $\frac{4}{5}$ (c) $\frac{2}{7}$
(d) $\frac{3}{7}$ (e) $\frac{1}{7}$

**53.** A circular road runs around a circular ground. If the radius of the ground is 3.5m and the difference between the circumference of the outer circle and that of the inner circle is 88 m, then the area of the road is
(a) 920 $m^2$ (b) 918 $m^2$ (c) 924 $m^2$
(d) 926 $m^2$ (e) 824 $m^2$

**54.** How many different 5 digits numbers can be made from the first 7 whole numbers, using each digit only once?
(a) 2160 (b) 2520 (c) 7776
(d) 3360 (e) 5040

**55.** Chiru goes to a shop to buy some bananas but somehow he managed to save Rs. 3 per 4 bananas and thus purchased 8 dozen bananas instead of 5 dozen banana. Then, find the amount he has initially with him?
(a) Rs 100 (b) Rs 160 (c) Rs 80
(d) Rs 200 (e) Rs 120

**Direction (56-60):**In each question two equations numbered (I) and (II) are given. Student should solve both the equations and mark appropriate answer.
(a) If x=y or no relation can be established
(b) If x>y
(c) If x<y
(d) If x≥y
(e) If x≤y

**56.** **I.** $35x^2 - 12x + 1 = 0$ **II.** $20y^2 - 14y + 2 = 0$

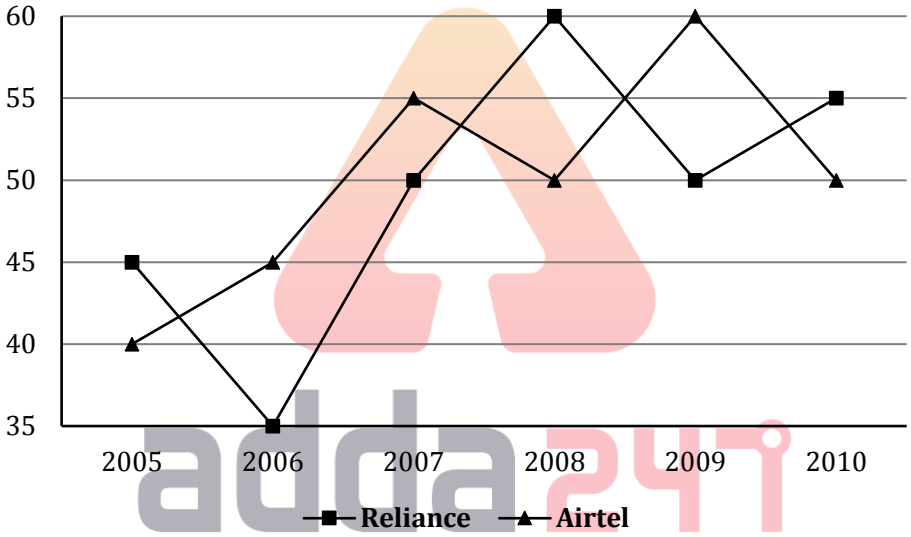
**57.** **I.** $4x^2 + 19x + 22 = 0$ **II.** $6y^2 + 20y + 16 = 0$

**58.** **I.** $3x^2 - 7x + 2 = 0$ **II.** $4y^2 - 29y + 45 = 0$

**59.** **I.** $2x^2 - 17x + 36 = 0$ **II.** $y\,(y - 2) = 2(2 - y)$

**60.** **I.** $5x^2 - 10 = 7x + 3x^2 + 5$
**II.** $6y^2 + 10y = 27y - 7$

**Direction (61-65):** Study the following graph carefully and answer the questions which follow. Profit (in percent) for Reliance and Airtel companies are given which is calculated on income.
Profit = Income – Expenditure
Profit % = $\frac{\text{Income - Expenditure}}{Income} \times 100$




**61.** If expenditure of Airtel in the year 2007 was Rs. 2.25 lac then find the income of Airtel in same year?
(a) 4 L (b) 5 L (c) 4.5 L
(d) 6 L (e) 5.5 L

**62.** If the profit of company Reliance in year 2006 was Rs. 1,05,000 then what was its expenditure in that year?
(a) Rs. 2.10 L (b) Rs. 2.60 L (c) Rs. 2 L
(d) Rs. 1.75 L (e) Rs. 1.95 L

**63.** If the expenditure of companies Airtel and Reliance in the year 2009 were equal, then what was the ratio of the income of Airtel to income of Reliance in same year?
(a) 7 : 6 (b) 5 : 4 (c) 6 : 5
(d) 5 : 3 (e) 3 : 5

**64.** If the income of Airtel in year 2005 and the income of Reliance in year 2010 was Rs. 5.5 lac and Rs. 7 lac respectively then the expenditure of Reliance in year 2010 is what percent of the expenditure of Airtel in year 2005?
(a) 90% (b) $92\frac{5}{11}\%$ (c) $96\frac{5}{11}\%$
(d) $95\frac{5}{11}\%$ (e) $94\frac{2}{11}\%$

**65.** Find the average of the profit percent of Reliance in all the given years?
(a) $49\frac{1}{6}\%$ (b) $49\frac{2}{3}\%$ (c) $45\frac{2}{3}\%$
(d) $45\frac{1}{6}\%$ (e) $48\frac{1}{3}\%$

**66.** Two articles P and Q were sold at 20% profit and 12.5% loss respectively. If total profit is Rs. 25.5 in the whole transaction then find the cost price of P when the cost price of Q is Rs. 60 less than the cost price of P?
(a) Rs. 180 (b) Rs. 250 (c) Rs. 240
(d) Rs. 220 (e) Rs. 260

**67.** If 10 girls and 11 boys together can do a of work in 5 days and 4 girls and 14 boys together can do the same work in $8\frac{1}{2}$ days. Then find the ratio of efficiency of a boy to a girl?
(a) 7 : 2 (b) 2 : 7 (c) 4 : 1
(d) 1 : 4 (e) 3 : 11

**Direction (68 – 72):** Given below table shows the total number of visitors who have visited Taj Mahal on five different days of a week and percentage of total visitors who are Indians.

| Days | Total number of visitors | percentage of visitors who are Indians |
|---|---|---|
| Monday | 15,000 | 75% |
| Tuesday | 17,800 | 82% |
| Friday | 16,800 | 82% |
| Saturday | 15,400 | 77% |
| Sunday | 18,000 | 85% |

Total number of visitors = Indians + Foreigners.

**68.** If the ratio of male to female foreigners visiting Taj Mahal on Sunday is 4 : 5, then find the difference between male and female foreigner visiting Taj Mahal on sunday?
(a) 250 (b) 275 (c) 300
(d) 320 (e) 350

**69.** Find the average of the number of Indian visitors on Monday and Tuesday?
(a) 12923 (b) 12833 (c) 12963
(d) 12933 (e) 12833

**70.** The difference of the number of Indian and foreign visitors on Saturday is what percent of the total number of visitors on Friday.
(a) 50% (b) 55% (c) 45%
(d) $49\frac{1}{2}\%$ (e) $46\frac{1}{2}\%$

**71.** Out of the total number of visitors on Monday 32% are Indian females. Find the ratio of number of Indian males visitors to the total number of foreign visitors on same day?
(a) 43 : 44 (b) 43 : 25 (c) 12 : 25
(d) 25 : 33 (e) 17 : 21

**72.** Find the difference between the total number of visitors on Sunday and total number of foreign visitors on Tuesday and Saturday together?
(a) 11,154 (b) 11,754 (c) 11,644
(d) 12,254 (e) 11,254

**73.** A sum is compounded annually for two years at the rate of 10% per annum for first year and 12% per annum for the second year. At the end of two years, the difference of the amount and the sum is Rs. 2,320. Then find the sum.
(a) Rs. 8,500 (b) Rs. 10,000 (c) Rs. 11,000
(d) Rs. 12,000 (e) Rs. 10,500

**74.** A goldsmith has an alloy of gold and copper in the ratio of 11 : 5 by weight. He sold $12\frac{1}{2}\%$ of alloy to a person and add some copper to it so that the ratio becomes 7 : 5 (gold : copper). Find the new quantity of copper added. If initial weight of alloy is 16 gm. (in gm)
(a) 2.5 gm (b) 1.5 gm (c) 2.0 gm
(d) 3.0 gm (e) 1.6 gm

**75.** Train A crosses a standing man with a speed of 86.4 km/hr in some time. Another train B crosses a platform of length 60m in twice of the time in which train A crossed the man with the speed of 108 km/hr. If the length of train A is half of that of train B then find the length of train B.
(a) 180 m (b) 300 m (c) 360 m
(d) 240 m (e) 120 m

**Direction (76 – 80):** The following questions are accompanied by two statements I and II. You have to determine which statements(s) is/are sufficient / necessary to answer the questions.
(a) Statement I alone is sufficient to answer the question but statement II alone is not sufficient to answer the questions.
(b) Statement II alone is sufficient to answer the question but statement I alone is not sufficient to answer the question.
(c) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
(d) Either statement I or statement II by itself is sufficient to answer the question.
(e) Statements I and II taken together are not sufficient to answer the question.

**76.** There are some Green and some White balls in a bag. Find how many white balls in the bag.
Statement I: Total number of balls in bag is five. If selecting two balls at random probability of being at least one ball Green is $\frac{9}{10}$.
Statement II: Total number of balls in bag is five. Selecting two balls from out of total balls at random, probability of being both balls white is $\frac{1}{10}$.

**77.** How many marks did Veer obtain in English?
Statement I: Veer secured on an average 55% marks in English, Physics and Chemistry together
Statement II: Veer secured 10% marks more in English than the average of English, Physics and Chemistry

**78.** Find speed of train A if length of two trains A and B is 70m and 80m respectively?
Statement I: They take 25 seconds to cross each other when they are running in the same direction.
Statement II: They take 15 seconds to cross each other when they are running in the opposite direction.

**79.** If the number of boys attending school in year 2009 was $33\frac{1}{3}$% of that of girls, then what was the ratio of boys to girls attending school in 2010?
Statement I: 100 more boys were attending school in 2010 than in 2009 and the average in 2010 is 450. And number of girls in 2010 is equal to number of girls in 2009.
Statement II: 150 more girls than were attending school in 2010 than in 2009.

**80.** 'P' started a business and Q joined him after 3 months and R joined them after 4 months. Find the share of 'R' out of the total profit?
Statement I : 'P' invested Rs. 600 more than 'Q' which 'Q' invested Rs. 300 more than 'R'.
Statement II: P's profit is Rs 18000 out of total profit.

# Mock 12 : Solutions

## REASONING ABILITY

**Directions (1-3):**
S gave presentation at last and on World hepatitis day. R gave representation on 12th. P did not give presentation on 17th and 26th, So P gave presentation on 15th. Only one person gave presentation after Q. World youth skill day is not represented on 12th.

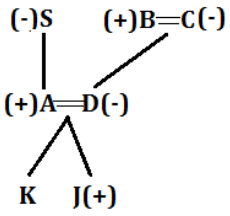
| Date | Person | Event |
|---|---|---|
| 12th | R | ~~World Youth skill day~~ |
| 15th | P | |
| 17th | | |
| 26th | Q | ~~World Youth skill day~~ |
| 28th | S | World hepatitis day |

More than two persons gave presentations between the date representing international Malala day and hepatitis day. T gave presentation on the date which represents World justice day.

| Date | Person | Event |
|---|---|---|
| 12th | R | International Malala day |
| 15th | P | World youth skill day |
| 17th | T | World justice day |
| 26th | Q | Kargil Vijay Diwas |
| 28th | S | World hepatitis day |

**1. (c);** **2. (c):** **3. (a);**

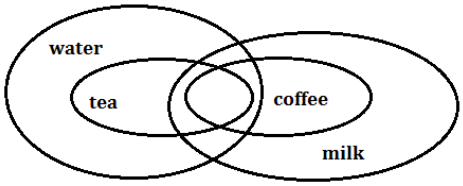
**Directions (4-5):**




**4. (c);** **5. (d);**

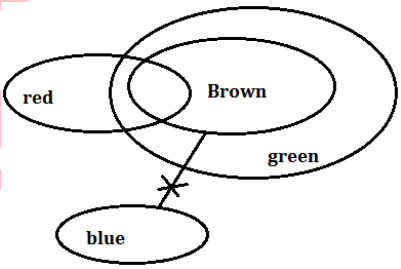
**Directions (6-10):**

**6. (b);**



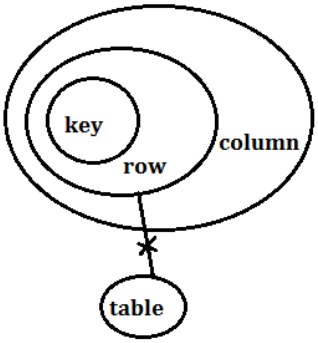

For-I Since it is a definite case so possibility case will not hold true.
For-II From Venn diagram it is clear that some milk are water. Hence conclusion I is true.

**7. (a);**



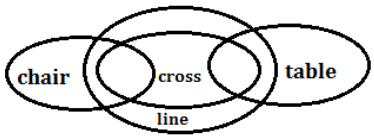

For-I True because All those green which are brown cannot be blue.
For-II False because Some red which are Brown can never be blue therefore, All red cannot be blue.

**8. (e);**



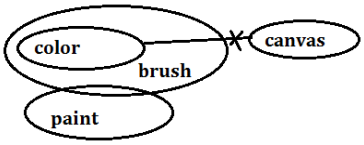
For-I True because All key are row and No row is table. Therefore, No key is table is True.
For-II False because All those columns which are row cannot be table.

**9. (a);**




For-I From Venn diagram it is clear that Some Cross are line. Hence conclusion I can be concluded.
For-II False, because there is no direct relation between Chair and table.

**10. (d);**




For-I False as there is no direct relation between paint and canvas.
For-II From Venn diagram All those brush which are color cannot be canvas. Hence conclusion II cannot be concluded.

**Directions (11-15):**

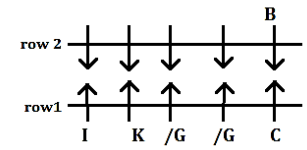
**11. (e);** 1

**12. (c);** * I 2 @ Q 8

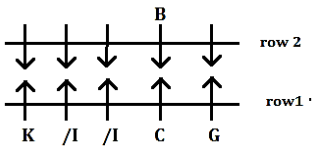
**13. (e);** **14. (b);** **15. (c);**

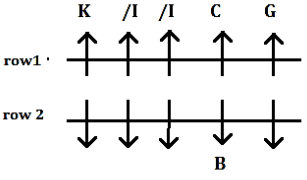
**Directions (16-20):**
In the given seating arrangement members of each row sits opposite to each other, which means either they can face each other or not. C sits opposite to B and 3rd right to K. I is to the left of G but not immediate left. So we get 4 possible cases----

Case-1



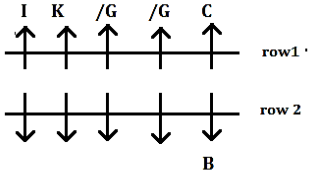

Case-2



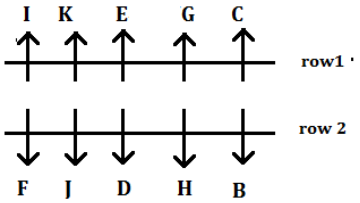




Case-3

Case-4




Two people sit between F and H. G does not sit opposite to D nor faces H. J sits 2nd to the right of H. By this condition case 1and 2 get cancelled, also D does not sit at any of the end therefore, case 3 also get cancelled and we got the final arrangement----




**16. (c);** **17. (d);** **18. (d);**

**19. (a);** **20. (a);**

**Directions (21-25):**

| Element | Code |
|---|---|
| Bus | mj |
| Travel/road | un/lk |
| train | ka |
| miles | ro |
| track | sa |
| platform | wl |
| seat | mo |
| transport | nj |

**21. (c);** **22. (d);** **23. (a);**

**24. (c);** **25. (e);**

**Directions (26-30):**
One person lives between S3 and S4, who does not live on odd numbered floor. The person who studies Maths lives just above the floor of S3. One person lives between the person who studies Maths and the one who studies Chem. So, there will be three possible cases---

Case-1

| Floor | Person | Subject |
|---|---|---|
| 5 | | Chem |
| 4 | S4 | |
| 3 | | Maths |
| 2 | S3 | |
| 1 | | |

Case-2

| Floor | Person | Subject |
|---|---|---|
| 5 | | Maths |
| 4 | S3 | |
| 3 | | Chem |
| 2 | S4 | |
| 1 | | |

Case-3

| Floor | Person | Subject |
|---|---|---|
| 5 | | |
| 4 | S4 | |
| 3 | | Maths |
| 2 | S3 | |
| 1 | | Chem |

S5 lives below S4 but not immediately below .This will eliminate Case 2. S5 does not study chem. So this will eliminate Case 3. Two persons live between S2 and the one who studies English. The one who studies Phy does not live on even numbered floor. S1 does not studies Chem. So the final arrangement is---

| Floor | Person | Subject |
|---|---|---|
| 5 | S2 | Chem |
| 4 | S4 | Bio |
| 3 | S1 | Maths |
| 2 | S3 | English |
| 1 | S5 | Phy |

**26. (a);** **27. (b);** **28. (b);**

**29. (b);** **30. (d);**

**Directions (31-35):**

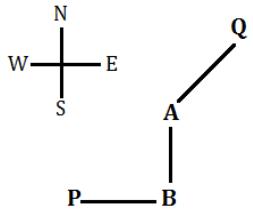
**31. (e);** From I and II S is granddaughter of E

(-)E═W(+)
|
(+)X═G(-)
|
(+)P S(-)

**32. (b);** From II S is tallest.
S > T > P > R > Q

**33. (a);** From I Sum is coded as 'ta'

**34. (b);** From II P is in South-west of Q




**35. (d);** From I and II we cannot determine the directions of all four persons.

**36. (d);**

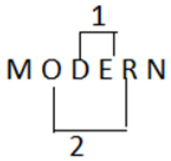
**Directions (37-38):**

**37. (e);** **38. (b);**

**39. (e);**

ELEPHANT
FKFOGBMS
BFFGKMOS

**40. (c);**




## QUANTITATIVE APTITUDE

**41. (d);**

120 143 189 258 350 465
+23 +46 +69 +92 +115
23×1 23×2 23×3 23×4 23×5

∴ 348 is wrong

**42. (a);**

253 216 175 132 85 32
−37 −41 −43 −47 −53 (Prime Numbers)

∴ 255 is wrong.

**43. (c);**

27 48 80 134 221 352
+21 +32 +54 +87 +131
+11 +22 +33 +44

∴ 355 is wrong

**44. (a);**

11 10 19 56 223 1114
×1−1 ×2−1 ×3−1 ×4−1 ×5−1

∴ 1115 is wrong.

**45. (e);**

292 291 295 268 284 159
$-1^3$ $+2^2$ $-3^3$ $+4^2$ $-5^3$

∴ 161 is wrong.

**46. (b);** Required % $= \frac{\left(\frac{10+35}{2}\right)-\left(\frac{10+20}{2}\right)}{\left(\frac{10+20}{2}\right)} \times 100 = 50\%$

**47. (d);** Total quantity of water available = $7000 \times \frac{8}{7}$ liter
= 8000 liter
Required ratio = $\frac{1000}{(35-20)\times\frac{7000}{100}} = \frac{1000}{1050} = \frac{20}{21}$

**48. (a);** Required ratio = $\frac{(35+20)}{(10+10)} = \frac{55}{20} = \frac{11}{4}$

**49. (e);** $3\frac{1}{7}$% of Quantity of water consumed by S
$= \frac{22}{7\times100} \times \frac{35}{100} \times 7000 = 77$ liter
Required percentage = $\frac{77}{\frac{10\times7000}{100}} \times 100 = 11\%$

**50. (a);** Required quantity
$= \frac{(35-20)\times7000}{100} - \frac{(20-10)}{100} \times 7000$
$= \frac{5}{100} \times 7000 = 350$ liter

**51. (d);** Let daughter's present age be x years.
Then, Shalini's present age = 5x years
Ratio of present age of
Daughter : Shalini : Father
2x 10x25x
ATQ,
$2x + 10x + 25x = 43 \times 3 - 18$
⇒ x = 3
Required ratio = $\frac{2x}{25x-10x} = \frac{2\times3}{15\times3} = 2:15$

**52. (c);** Required probability = $\frac{1}{7}\times\frac{4}{5} + \frac{6}{7}\times\frac{1}{5}$
$= \frac{4+6}{35} = \frac{10}{35} = \frac{2}{7}$

**53. (c);** let the radius of the outer circle be R m.
And the radius of the inner circle be r m.
Then, according to the question
$2\pi r - 2\pi r = 88$
or, $R - r = \frac{88\times7}{2\times22} = 14$
Or, R = 14 + r = 14 + 3.5 = 17.5 m
Now, area of the road = π ($17.5^2$ - $3.5^2$)
$= \frac{22}{7} \times 21 \times 14 = 924\ m^2$

**54. (a);** Required number of 5 digit number
= _ _ _ _ _
↑ ↑ ↑ ↑ ↑
6 × 6 × 5 × 4 × 3
= 2160

**55. (e);** Let initially chiru has Rs. x with him.
ATQ,
$\frac{x}{8} + 9 = \frac{x}{5}$ (he saves Rs. 9 per dozen)
$\Rightarrow \frac{x}{5} - \frac{x}{8} = 9 \Rightarrow \frac{3x}{40} = 9 \Rightarrow$ x = Rs. 120

**56. (e);** **I.** $35x^2 - 12x + 1 = 0$
$\Rightarrow 35x^2 - 7x - 5x + 1 = 0$
$\Rightarrow 7x(5x - 1) - 1(5x - 1) = 0$
$\Rightarrow x = \frac{1}{5}\ or \frac{1}{7}.$

**II.** $20\ y^2 - 14y + 2 = 0$
$\Rightarrow 20y^2 - 10y - 4y + 2 = 0$
$\Rightarrow 10y(2y - 1) - 2(2y - 1) = 0$
$\Rightarrow y = \frac{1}{5}\ or \frac{1}{2}$
$y \geq x$

**57. (e);** **I.** $4x^2 + 19x + 22 = 0$
$\Rightarrow 4x^2 + 8x + 11x + 22 = 0$
$\Rightarrow 4x(x + 2) + 11(x + 2) = 0$
$\Rightarrow x = -2\ or \frac{-11}{4}$

**II.** $6y^2 + 20y + 16 = 0$
$\Rightarrow 6y^2 + 12y + 8y + 16 = 0$
$\Rightarrow 6y(y + 2) + 8(y + 2) = 0$
$\Rightarrow y = -2\ or \frac{-4}{3}$
$y \geq x$

**58. (c);** **I.** $3x^2 - 7x + 2 = 0$
$\Rightarrow 3x^2 - 6x - x + 2 = 0$
$\Rightarrow 3x(x - 2) - 1(x - 2) = 0$
$\Rightarrow x = 2\ or \frac{1}{3}$

**II.** $4y^2 - 29y + 45 = 0$
$\Rightarrow 4y^2 - 20y - 9y + 45 = 0$
$\Rightarrow 4y\ (y - 5) - 9\ (y - 5) = 0$
y = 5 or $\frac{9}{4}$
y > x

**59. (b);** **I.** $2x^2 - 17x + 36 = 0$
$\Rightarrow 2x^2 - 8x - 9x + 36 = 0$
$\Rightarrow 2x(x - 4) - 9(x - 4) = 0$
$\Rightarrow x = 4\ or \frac{9}{2}$

**II.** $y(y - 2) = 2(2 - y)$
$\Rightarrow y^2 - 2y = 4 - 2y$
$\Rightarrow y = \pm 2.$
$x > y$

**60. (a);** **I.** $5x^2 - 10 = 7x + 3x^2 + 5$
$\Rightarrow 2x^2 - 7x - 15 = 0$
$\Rightarrow 2x^2 - 10x + 3x - 15 = 0$
$\Rightarrow 2x(x - 5) + 3(x - 5) = 0$
$\Rightarrow x = 5\ or \frac{-3}{2}$

**II.** $6y^2 + 10y = 27y - 7$
$\Rightarrow 6y^2 - 17y + 7 = 0$
$\Rightarrow 6y^2 - 3y - 14y + 7 = 0$
$\Rightarrow 3y(2y - 1) - 7(2y - 1) = 0$
$\Rightarrow y = \frac{1}{2}\ or \frac{+7}{3}$
∴ no relation can be established

**61. (b);** Let the income of airtel in year 2007 be Rs x.
ATQ,
$55 = \frac{x - 225000}{x} \times 100$
$\Rightarrow 55x = 100x - 225000 \times 100$
$\Rightarrow x = \frac{2,25,000\times100}{45} = 5,00,000 = Rs.5\ lac$

**62. (e);** Let the total income of reliance in 2006 be Rs. 100 x
Then, profit = Rs. 35x
$\Rightarrow 35x = 1,05,000 \Rightarrow x = 3000$
∴ expenditure = (100–35) × 3000
= Rs. 1,95,000

**63. (b);** Let the expenditure of both the companies be Rs. 100x
Required ratio = $\frac{100x\times\frac{100}{40}}{100x\times\frac{100}{50}} = \frac{250}{200} = 5:4$

**64. (d);** Required percentage= $\frac{7\times\frac{45}{100}}{5.5\times\frac{60}{100}} \times 100 = \frac{315}{330} \times 100$
$= \frac{1050}{11}\% = 95\frac{5}{11}\%$

**65. (a);** Required Average = $\frac{45+35+50+60+50+55}{6}\%$
$= \frac{295}{6}\% = 49\frac{1}{6}\%$

**66. (c);** Let the CP of Q be Rs. x
Then, CP of P = Rs. $(x + 60)$
ATQ,
$\frac{-x\times12.5}{100} + \frac{(x+60)\times20}{100} = Rs.25.5$
$\Rightarrow 7.5x + 1200 = 25.5 \times 100$
$\Rightarrow x = Rs.180$
CP of P = Rs. 180 + 60 = Rs. 240

**67. (d);** Let the efficiency of girl be G and that of boy be B.
ATQ,
$(10G + 11B) \times 5 = (4G + 14B) \times \frac{17}{2}$

$\Rightarrow 100G + 110B = 68G + 238B$
$\Rightarrow 32G = 128B \Rightarrow \frac{G}{B} = \frac{4}{1} = 4:1$
$\frac{B}{G} = \frac{1}{4}$

**68. (c);** Required difference $= 18000 \times \frac{15}{100} \times \frac{1}{9} = 300$

**69. (a);** Required average $= \frac{\frac{15000\times75}{100} + \frac{17800\times82}{100}}{2}$
$= \frac{11250+14596}{2} = 12{,}923$

**70. (d);** Required % $= \frac{(77-23)\times\frac{15400}{100}}{16800} \times 100$
$= \frac{8316}{16800} \times 100 = \frac{99}{2}\% = 49\frac{1}{2}\%$

**71. (b);** Number of Indian visitors on Monday
$= 15000 \times \frac{75}{100} = 11{,}250$
Number of Indian male visitors on Monday
$= 11{,}250 - 15{,}000 \times \frac{32}{100} = 6450$
Required ratio $= \frac{6450}{15000\times\frac{25}{100}} = 43:25$

**72. (e);** Required difference
$= 18000 - \left(\frac{17800\times18}{100} + \frac{15400\times23}{100}\right)$
$= 18000 - (3204 + 3542) = 11{,}254$

**73. (b);** Let the sum be Rs. 100 x.
Amount at the and of two years
$= 100x \times \frac{110}{100} \times \frac{112}{100} = Rs.\frac{616x}{5}$
ATQ,
$\Rightarrow \frac{616x}{5} - 100x = 2{,}320 \Rightarrow \frac{116x}{5} = 2320$
$\Rightarrow x = 100$
$\therefore$ sum = Rs. 10,000

**74. (a);** Let the initial weight of alloy be 16 gm.
Initial weight of gold = 11 gm
And, initial weight of copper = 5 gm
Let y gm of copper is added
ATQ,
$\frac{11-\frac{11}{8}}{\left(5-\frac{5}{8}\right)+y} = \frac{7}{5}$
$\Rightarrow \frac{77}{35+8y} = \frac{7}{5} \Rightarrow 385 = 245 + 56y$
$\Rightarrow 140 = 56y \Rightarrow$ y = 2.5 gm

**75. (d);** Let the length of train A be x m
Then, length of train B = 2x m
ATQ,
$2 \times \left(\frac{x}{\frac{86.4\times5}{18}}\right) = \frac{2x+60}{\frac{108\times5}{18}}$
$\Rightarrow \frac{2x}{24} = \frac{2x+60}{30} \Rightarrow 30x = 24x + 720$
$\Rightarrow 6x = 720$
$\Rightarrow x = 120\ m$
Length of train B $= 120 \times 2 = 240$ m

**76. (d);** **From I**
Let number of white balls be x
Green balls = 5 – x
Probability of being at least one ball Green
$\Rightarrow \frac{{}^{x}C_1\,{}^{5-x}C_1 + {}^{5-x}C_2}{{}^{5}C_2} = \frac{9}{10}$
$\frac{x(5-x)+\frac{(5-x)(4-x)}{2}}{10} = \frac{9}{10}$
x = 2
**From II**
Let number of White balls be x
Total = 5
Probability of being both balls white is $\frac{1}{10}$
$\Rightarrow \frac{{}^{x}C_2}{{}^{5}C_2} = \frac{1}{10} \Rightarrow \frac{x(x-1)}{20} = \frac{1}{10} \Rightarrow$ x = 2
So, either statement I or II is sufficient to give the answer of the question.

**77. (e);** In none of the statement given marks have been given in terms of numbers, hence we cant find the mars obtained in English.

**78. (e);** **Using Statement I:**
Relative speed in same direction $= \frac{150}{25} = 6m/s.$ ... (i)
**Using statement II:**
Relative speed in opposite direction $= \frac{150}{15}$
$= 10\ m/s$ ... (ii)
On solving (i) & (ii), we get the value, but we can not say which value is speed of train A.

**79. (a);** Let the number of boys in 2009 be x.
Then girls = 3x
Using statement I:
$\frac{3x+x+100}{2} = 450 \Rightarrow 4x = 800 \Rightarrow x = 200$
Number of boys in 2010 = 300
Number of girls in 2010 = 600
So, ratio = 1 : 2
Statement II: we can't find the ratio.
ATQ,
Ratio $= \frac{x}{3x+150}$
So, Statement I is alone sufficient.

**80. (c);** **From Statement I,**
Let P invested Rs. x, then investment of Q = x – 600 and that of R = x – 900
**From Statement II,**
P's profit is Rs. 18000
Using both,
Ratio of investment
PQR
$x \times 12 : (x-600) \times 9 : (x-900) \times 8$
12x = 18000
$\Rightarrow x = \frac{18000}{12} = Rs.1500.$
Then, Profit of R $= (x-900) \times 8 =$ Rs. 4800

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# Mock 13

# IBPS RRB PO Prelims

## REASONING ABILITY

**Directions (1-5):** Study the information and answer the following questions:

There are eight family members F, G, H, I, J, K, L and M. They all have different professions viz. Athlete, Boxer, Cricketer, Lawyer, Engineer, Coordinator, Doctor and Event Manager (not necessarily in the same order).

H is the father of Cricketer. L is the daughter of Event manager. The one who is a Doctor is grandmother of K, who has two brothers. K is a coordinator. I who is an Event manager is married to F. H is a Boxer who is married to the Lawyer. G is the mother of J and K. There are two married couples in the family. The one who is a Coordinator is a female while the one who is an Engineer is a male. The Athlete is the sister of the Boxer, who is married to G. J is not a Cricketer.

**1.** How many male members are there in the family?
(a) Two (b) Three (c) Four
(d) Five (e) None of these

**2.** How is L related to G?
(a) Daughter (b) Mother (c) Sister
(d) Sister-in-law (e) None of these

**3.** What is the profession of M?
(a) Engineer (b) Doctor (c) Cricketer
(d) Athlete (e) Cannot be determined

**4.** Who among the following is a Doctor?
(a) F (b) G (c) J
(d) M (e) None of these

**5.** Which of the following statement is definitely true?
(a) G is married to athlete
(b) The Event manager is grandfather of Athlete
(c) M is the son of G and is a Cricketer
(d) All are true
(e) None is true

**Directions (6-8):** Study the following information and answer the given questions.

In a family of seven members there are four female members. T is the mother of M. P is the brother of M. G is grandfather of P. H is mother-in-law of T. V is brother of S, who is sister-in-law of T.

**6.** How is H related to P?
(a) Mother (b) Grandmother (c) Sister
(d) Sister-in-law (e) None of these

**7.** How is M related to S?
(a) Niece (b) Nephew (c) Brother
(d) Either (a) or (b) (e) None of these

**8.** How is V related to G?
(a) Son (b) Father (c) Brother
(d) Father-in-law (e) None of these

**Directions (9-10):** Study the following information and answer the given questions

In a park J, K, L, M and N are playing a game. All are facing north. K is 50m to the right of M. J is 70m to the south of K. L is 50m to the west of M. N is 95m to the north of J.

**9.** Who among the following is to the southeast of the person who is to the left of M?
(a) J (b) K (c) L
(d) N (e) Cannot be determined

**10.** If a kid walks from L, meets K followed by J and then N, how many metres does he walk if he travels the straight line distance all through?
(a) 195m (b) 235m (c) 210m
(d) 265m (e) 170m

**Directions (11-15):** Study the information and answer the following questions:

Eight boxes M, N, O, P, Q, R, S and T are placed one above the other but not necessarily in the same order. All boxes contain different number of coins viz. 5, 18, 25, 30, 35, 48, 50 and 60 (not necessarily in the same order).

Three boxes are placed between box O and box M, which contains 48 coins. N contains 50 coins and is placed immediately above O. There is only one box which is placed between box N and box Q, which contains 60 coins. Box P contains 5 coins and it is placed somewhere below box S. Only two boxes are placed between box S and box T, which contains 25 coins. The box which contains 50 coins is not placed below the box which contains 48 coins. Box S is not placed at an odd numbered position when counted from bottom to top. Box S has less coins than box T. The box which contains highest number of coins is not placed on top. The box which contains least number of coins will not be placed at the bottom. Box R contains more coins than box O. The box which contains 35 coins will not be placed on top.

**11.** How many boxes are placed between box P and box S?
(a) None (b) One (c) Two
(d) Three (e) More than three

**12.** Box which is placed at the bottom contains how many coins?
(a) 30 (b) 35 (c) 18
(d) 25 (e) None of these

**13.** Which among the following boxes is placed at the top?
(a) Box R (b) Box N (c) Box O
(d) Box P (e) None of these

**14.** Which box is placed immediately above the box which contains 35 coins?
(a) Box O
(b) Box S
(c) The box which contains 50 coins
(d) The box which contains 60 coins
(e) None of these

**15.** How many coins did Box O contains?
(a) 18 (b) 30 (c) 35
(d) 25 (e) Cannot be determined

**Directions (16-20):** Study the following information carefully and answer the given questions:

Eight friends P, Q, R, S, T, U, V and W are sitting around a square table in such a way that four of them sit at four corners of the square while the other four sit in the middle of each sides. All of them like different colors viz. green, blue, red, black, white, pink, yellow and orange. The ones who sit at the four corners do not face towards the center while those who sit in the middle of the sides do not face outside.

R likes red color and sits third to the right of T. Only two persons sit between T and the one who likes green color. S likes black color and is an immediate neighbor of R. P likes pink color. Q sits second to the right of the one who likes orange color. The one who likes red color faces the one who likes white color. U is not an immediate neighbor of the one who likes white color. U likes blue color. Neither V nor W likes orange color.

**16.** Who sits exactly between P and T when counted from the right of P?
(a) Q
(b) U
(c) The one who likes green color
(d) The one who likes white color
(e) Cannot be determined

**17.** What is the position of V with respect to R?
(a) Second to the left
(b) Third to the right
(c) Fourth to the left
(d) Third to the left
(e) Cannot be determined

**18.** Four of the following five are alike in a certain way and so form a group. Who among the following does not belong to that group?
(a) R
(b) U
(c) The one who likes green color
(d) The one who likes white color
(e) The one who likes yellow color

**19.** What is the position of S with respect to the one who likes yellow color?
(a) Second to the left
(b) Second to the right
(c) Third to the right
(d) Fourth to the right
(e) Cannot be determined

**20.** How many persons sit between the one who likes yellow color and the one who likes pink color?
(a) One (b) Two (c) Three
(d) Four (e) Cannot be determined

**Directions (21-25):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21.** **Statements:** $U > S = P$ ; $N < M \leq P$ ; $Z \geq M \geq X$
**Conclusions:** **I.** $X > U$ **II.** $Z > N$

**22.** **Statements:** $A \leq B = C \leq D$ ; $F \geq G \geq D$ ; $F < K$
**Conclusions:** **I.** $K > B$ **II.** $G \leq A$

**23.** **Statements:** $Z < Y \geq X$ ; $W > V \geq Y = U$ ; $W \geq T$
**Conclusions:** **I.** $T > Z$ **II.** $X \geq V$

**24.** **Statements:** $P \geq V \geq O = M$ ; $K \leq L \leq O = E$
**Conclusions:** **I.** $K \leq V$ **II.** $E = M$

**25.** **Statements:** $Q \geq N = S \geq P$ ; $R \leq C \leq P \leq D$
**Conclusions:** **I.** $R < S$ **II.** $N = R$

**Directions (26-30):** Each of the questions below consists of a question and two statements numbered I, and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the two statements and Give answer:

(a) If the data in Statement I is sufficient to answer the question while the data in Statement II is not required to answer the question
(b) If the data in Statement II is sufficient to answer the question, while the data in Statement I is not required to answer the question
(c) If the data in either Statement I alone or Statement II alone is sufficient to answer the question
(d) If the data neither in Statement I nor in Statement II together are sufficient to answer the question
(e) If the data in the Statement I and II together are necessary to answer the question

**26.** How many brothers does G have?
I. S is the only son of V, who is father of T.
II. S is the brother of T, who is the only sister of G.

**27.** Among five friends L, M, N, O and P who is the heaviest, if all are having different weights?
I. L is heavier than O. P is heavier than L.
II. N is lighter than only M.

**28.** What is the code for 'human' in the given language?
I. 'Human have brains' is coded as 'tu vo ni'.
II. 'Brains have been working' is coded as 'wk ni ne tu'.

**29.** What is the rank of J from top in a class of 25 students?
I. J is four ranks above V, who is ninth from the bottom.
II. J is five ranks below M, who is eighteenth from the bottom.

**30.** Five friends A, B, C, D and E are sitting around a circular table facing the center. What is the exact position of D with respect to B?
I. A sits second to the right of C. D is not an immediate neighbor of A. E does not sit to the immediate right of A.
II. B sits second to the right of E. A is an immediate neighbor of B. C sits to the immediate left of E.

**31.** How many pairs of letters are there in the word" **SCHEDULE**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**32.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "DEFAULTER" then which of the following will be seventh from the left end?
(a) F (b) L (c) T
(d) R (e) None of these

**33.** In a row of students facing North, Rahul is 14th from the left end. Five students sit between Rahul and Sam. What is the position of Sam from the left end, if Sam does not sit to the right of Rahul?
(a) Sixth from the left end
(b) Seventh from the left end
(c) Eight from the left end
(d) Twentieth from the left end
(e) Cannot be determined

**34.** Pointing to a lady, Sameer said, "She is the only sister of my father's only grandson". How is that lady related to Sameer?
(a) Daughter (b) Niece (c) Sister
(d) Mother (e) Cannot be determined

**35.** In a certain code 'CLASS' is written as '47#99' and 'SHAPE' is written as '93#65'. How is 'PALACE' written in that code?
(a) 6#74#5 (b) 6#7#54 (c) 6##745
(d) 6#7#45 (e) None of these

**Directions (36-40):** Study the following information carefully and answer the questions given below:
In a certain code language
'sweets are tasty food' is coded as 'sa ra fa ta'
'food are good nutrients' is coded as 'na fa ga ra'
'nutrients are healthy' is coded as 'ha ra na'
'healthy sweets good business' is coded as 'sa ha ba ga'

**36.** What is the code for 'healthy food'?
(a) na fa (b) ra ha (c) ha fa
(d) fa ga (e) None of these

**37.** What is the code for 'tasty' in the given language?
(a) na (b) ta (c) fa
(d) ra (e) Cannot be determined

**38.** 'ba' is the code for?
(a) healthy (b) are (c) tasty
(d) business (e) None of these

**39.** What is the code for 'are' in the given language?
(a) na (b) ha (c) ra
(d) ga (e) None of these

**40.** What is the code for 'good nutrients'?
(a) sa na (b) ga ra (c) ga na
(d)fa na (e)Cannot be determined

## QUANTITATIVE APTITUDE

**41.** PNB bank has rolled out a new plan according to which the rate of simple interest on a sum of money is 5% per -annum for the first $2\frac{1}{2}$ yrs, 6% per annum for the next $3\frac{1}{2}$ yrs and 9% per annum for the period beyond the first six years. Total simple interest received on a sum for a period of 10 years is Rs6950. Then find the sum.
(a) Rs 12,000 (b) Rs 13,500 (c) Rs 14,000
(d) Rs 10,000 (e) Rs 15,000

**42.** Three friends Veer, Abhi and Ayush donates 9%, 7% and 8% of their respective monthly salary. The monthly salary of Abhi and Ayush are equal and the difference between their donations is Rs 66. The donation of veer is Rs342 less than the total donations made by Abhi and Ayush together. Find the average of their monthly salary?
(a) Rs 6840 (b) Rs 6800 (c) Rs 6700
(d) Rs 6920 (e) Rs 6900

**43.** Adda 247 is an education based company which doubled its turnover in 2015 from Rs12 crores in 2014. Then, it tripled its turnover in 2016 over its previous year and again increased its turnover by $37\frac{1}{2}$% in 2017 over previous year. Find its current turn over (2017) is what percent of its turnover in 2014?
(a) 875% (b) 925% (c) 825%
(d) 850% (e) 950%

**44.** If 13 years are subtracted from the present age of Honey and the remainder is divided by 8, it gives the age of his grand-daughter Hardeep. If Hardeep is 27 years younger than his father then find the average age of all three given that the present age of Honey's only son is 34 years. Honey has no daughter
(a) $36\frac{2}{3}$yr (b) 35 yr (c) $35\frac{2}{3}$yr
(d) $36\frac{1}{3}$yr (e) $37\frac{1}{3}$yr

**45.** Sandeep rolled two dices at the same time. Find the probability of getting sum 9 or more on both the dices together?
(a) $\frac{1}{4}$ (b) $\frac{11}{36}$ (c) $\frac{7}{18}$
(d) $\frac{5}{18}$ (e) $\frac{1}{3}$

**Directions (46-50)**: In each question two equations numbered (I) and (II) are given. You should solve both the equations and mark appropriate answer.
(a) If x = y or no relation can be established
(b) If x > y
(c) If x < y
(d) If x ≥ y
(e) If x ≤ y

**46.** **I.** $15x^2 + 38x + 16 = 0$
**II.** $8y^2 + 20y + 12 = 0$

**47.** **I.** $8x^2 + 19x + 11 = 0$
**II.** $8y^2 + 27y + 22 = 0$

**48.** **I.** $6x^2 - 9x + 3 = 0$
**II.** $8y^2 - 11y + 3 = 0$

**49.** **I.** $5x^2 + 6x - 11 = 0$
**II.** $20y^2 + 23y - 43 = 0$

**50.** **I.** $3x + 7y = 28$
**II.** $5x + 3y = 38$

**Directions (51-55):** What will come in the place of question (?) mark in the following number series :

**51.** 82, 111, 147, 191, ?, 307
(a) 240 (b) 236 (c) 244
(d) 252 (e) 232

**52.** ?, 48, 72, 180, 630, 2835
(a) 24 (b) 72 (c) 60
(d) 80 (e) 96

**53.** 6, ?, 568, 3414, 13660, 27322
(a) 70 (b) 66 (c) 60
(d) 72 (e) 84

**54.** 589, 468, 387, 338, 313, ?
(a) 306 (b) 303 (c) 312
(d) 304 (e) 305

**55.** 12, 12, 15, 23, 38, ?
(a) 63 (b) 61 (c) 62
(d) 58 (e) 38

**56.** Ritu and Anu together can do a work in 16 days where as Anu alone can do it in 24 days. If Neha alone can do the same work in 30 days, then find the ratio of efficiency of Neha to efficiency of Ritu?
(a) 5 : 8 (b) 8 : 5 (c) 5 : 3
(d) 2 : 3 (e) 7 : 8

**57.** How many integers from 5000 to 5999 have at least one of its digits repeated?
(a) 498 (b) 496 (c) 504
(d) 508 (e) 512

**Directions (58 - 62):** Find the exact value of question marks (?) in following questions?

**58.** 35% of 48% of $\frac{2}{5}$ of 15000 = ?
(a) 1004 (b) 996 (c) 1020
(d) 1008 (e) 1012

**59.** $\sqrt{24 \times 435 \div ? + \sqrt{256}} + 45\%\text{ of }40 = 18$
(a) 30 (b) 24 (c) 36
(d) 48 (e) 18

**60.** $[(238 \div 4) + 36.5] \div 12 = ?\%$ of 64
(a) $12\frac{1}{2}\%$ (b) 15% (c) 16%
(d) 8% (e) 10%

**61.** $(\sqrt{11664} + \sqrt[3]{74088}) \times ? = 125 \times 12$
(a) 12 (b) 13 (c) 12.5
(d) 15 (e) 10

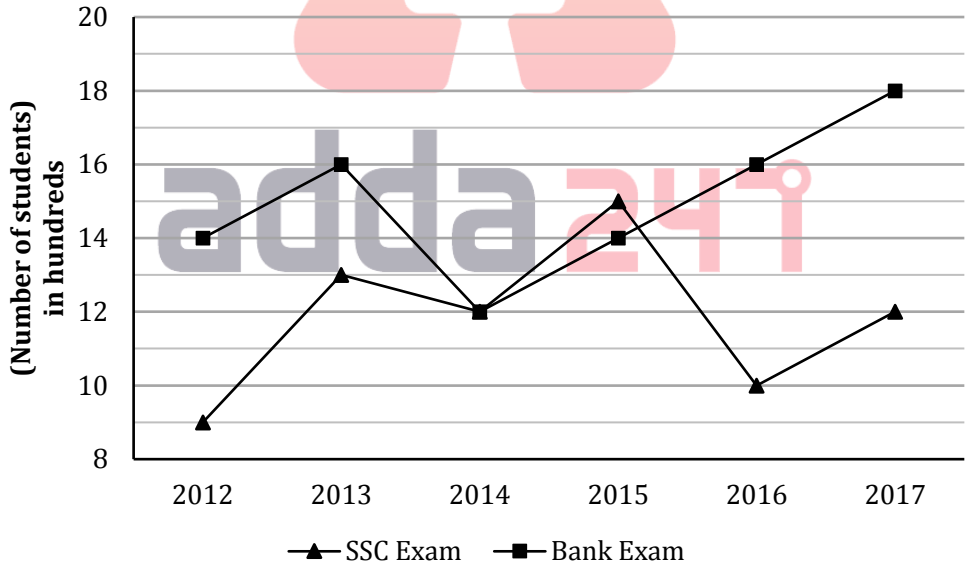
**62.** $4\frac{2}{3} - 3\frac{1}{6} + 5\frac{5}{9} - 2\frac{7}{12} = ?$
(a) $4\frac{17}{36}$ (b) $4\frac{19}{36}$ (c) $4\frac{7}{12}$
(d) $4\frac{1}{2}$ (e) $4\frac{4}{9}$

**63.** Distance between Delhi junction and Patna junction is 1200 km. A train P starts from Patna at a speed of x km/h towards Delhi junction. Another train Q starts from Patna at a speed of (x + 30) km/hr in the same direction, 7 hours later than the start of train P. If train Q crosses train P in 5 hours after its start then find speed of train P.
(a) $\frac{135}{7}$ km/h (b) 70 km/h (c) 130 km/h
(d) $\frac{130}{7}$ km/h (e) $\frac{150}{7}$ km/h

**64.** A shopkeeper purchased an article at some discount on marked price and raised the marked price of an article by 80%. Then he allows two successive discount of $37\frac{1}{2}\%$ and $44\frac{4}{9}\%$ on it. On selling the article, he still made a profit of $4\frac{1}{6}\%$ on it. Find at what discount percent the shopkeeper has bought the article?
(a) 50% (b) 40% (c) 30%
(d) 36% (e) 42%

**65.** A is an alloy of two types of metals x and y and B is an alloy of two types of metals y and z. Some quantity of B is mixed with 30 gms of A to form another alloy which has 55% of y metal concentration. Find the quantity of B taken if an alloy A has 60% of y concentration and B has 40% of y concentration.
(a) 15 gm (b) 12.5 gm (c) 10 gm
(d) 20 gm (e) $7\frac{1}{2}$ gm

**Directions (66-70):** The line graph given below shows the number of students (in hundreds) who have been selected in Banking exam and in SSC exams from a reputed coaching institute in six different years.




**66.** Find the ratio of the total number of students selected in Banking exam from 2015 to 2017 together to the total number of students selected in SSC exam from 2012 to 2014 together?
(a) 24 : 17 (b) 20 : 17 (c) 22 : 17
(d) 17 : 24 (e) 17 : 22

**67.** The average of the number of students selected in both exams in 2016 is what percent more/less than the average of the number of students selected in both the exams in year 2017?
(a) $12\frac{1}{2}\%$ (b) $12\frac{3}{5}\%$ (c) $12\frac{1}{3}\%$
(d) $13\frac{1}{3}\%$ (e) $13\frac{2}{3}\%$

**68.** What is the ratio of total students selected in banking exam from 2013 to 2015 to total students selected in SSC exams from 2013 to that in 2015?
(a) 115 : 91 (b) 21 : 20 (c) 125 : 91
(d) 91 : 125 (e) 10 : 7

**69.** Every year 20% of the students who passed the Banking exam also passed the SSC exam then, find the average of number of students who passed both the exam from 2014 to 2016?
(a) 260 (b) 275 (c) 300
(d) 320 (e) 280

**70.** Find the difference between total number of students who passed bank exam from 2013 to 2015 and the total number of students who passed the SSC exam from 2014 to 2016?
(a) 400 (b) 450 (c) 500
(d) 520 (e) 550

**Directions (71-75):** The given below table shows the total number of books available in five different college library and the number of books for medical study as a percentage of the total number of available books in the library. Study the given table and answer the following questions carefully.

| College | Total number of books | Books for medical study (as a percentage) |
|---|---|---|
| A | 425 | 40% |
| B | 350 | 30% |
| C | 325 | 20% |
| D | 450 | 32% |
| E | 480 | 35% |

Total number of books = Books for medical study + Engineering books + Books for management study

**71.** Find the ratio of the total number of non-medical books available in college B and C together to the total number of medical books available in college A, B and C together?
(a) 103 : 68 (b) 68 : 103 (c) 68 : 101
(d) 101 : 68 (e) 3 : 2

**72.** The ratio of number of engineering books to the number of management books in college D is 5 : 4. Then, find the number of engineering books is what more than the number of management books?
(a) 32 (b) 34 (c) 30
(d) 28 (e) 36

**73.** Find the difference between the total number of medical books available in college C and D together and the number of books available in college B.
(a) 140 (b) 142 (c) 141
(d) 144 (e) 143

**74.** Find the average of the number of non-medical books available in college C and E and the number of medical books available in college B ?
(a) $225\frac{2}{3}$ (b) $225\frac{1}{3}$ (c) $224\frac{1}{3}$
(d) 225 (e) $226\frac{2}{3}$

**75.** The ratio of engineering : management books in college B and college E are in the ratio of 17 : 18 and 5 : 3 respectively. Then find the difference between total number of engineering books and management books in both the colleges?
(a) 61 (b) 51 (c) 71
(d) 59 (e) 81

**Directions (76-80):** In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly.

**76.** **Quantity I :** The price of wheat falls by 20%. How much wheat can be bought now with the money that was sufficient to buy 20 kg of wheat previously?
**Quantity II :** The average weight of 14 students in a school is 13 kg. When a new student is included in this group, the average weight is decreases by 0.2 kg. Find the age of new student.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established.

**77.** **Quantity I :** Find the probability of getting two heads when three coins are tossed simultaneously.
**Quantity II :** When the numerator of a fraction is increased by 50% and the denominator is decreased by 10%, the fraction thus obtained is $\frac{5}{8}$. Find the original fraction.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I >= Quantity II
(d) Quantity II >= Quantity I
(e) Quantity I = Quantity II or relation can't be established.

**78.** **Quantity I :** If by selling two items for Rs 150 each, the shopkeeper gains 20% on one and loses 20% on the other. Find the value of gain/loss.
**Quantity II** : An article is sold for Rs 805 at a profit of 15%. What would have been the actual profit or loss on it, if it had been sold for Rs 717.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I >= Quantity II
(d) Quantity II >= Quantity I
(e) Quantity I = Quantity II or relation can't be established.

**79.** **Quantity I :** Find the principal if the compound interest is charged on principal at the rate of $16\frac{2}{3}\%$ per annum for two years and the sum becomes Rs 245.

**Quantity II :** A sum of Rs 500 amounts to Rs 620 in 4 yrs at simple interest. What will Rs 150 amount to if the rate of interest is same and time period is $2\frac{1}{2}$ yrs.

(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I >= Quantity II
(d) Quantity II >= Quantity I
(e) Quantity I = Quantity II or relation can't be established.

**80. Quantity I :** A metallic spherical ball of radius 3.5 cm is melted and re-casted into 8 identical cones of radius $1\frac{3}{4}$ cm and height 'x' cm. Find the value of x?

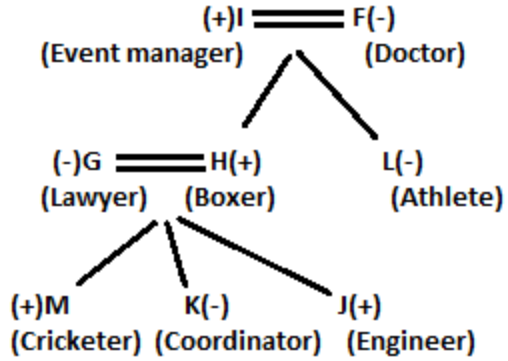
**Quantity II:** A rectangle has length 4 cm more than its breadth. Its area is 4 $cm^2$ lesser than the area of square, which perimeter is 36 cm. Find the breadth of rectangle.

(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I >= Quantity II
(d) Quantity II >= Quantity I
(e) Quantity I = Quantity II or relation can't be established.

# Mock 13 : Solutions

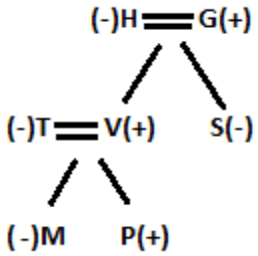
## REASONING ABILITY

**Directions (1-5):**
L is the daughter of Event manager. I who is an Event manager is married to F. H is a Boxer who is married to G who is a lawyer. G is the mother of J and K. There are two married couples in the family. Doctor is grandmother of K, who has two brothers. K is a coordinator. Coordinator is a female while the one who is an Engineer is a male. The Athlete is the sister of the Boxer. J is not a Cricketer. So we get the final arrangement as-



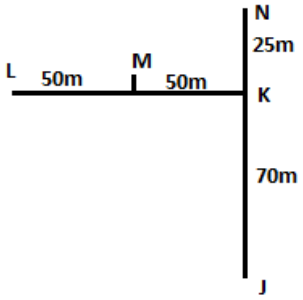

**1. (c); 2. (d); 3. (c);**
**4. (a); 5. (c);**

**Directions (6-8):**




**6. (b); 7. (a); 8. (a);**

**Directions (9-10):**




**9. (a); 10. (d);**

**Directions (11-15):**
Three boxes are placed between box O and box M, which contains 48 coins. N contains 50 coins and is placed immediately above O. The box which contains 50 coins is not placed below the box which contains 48 coins. There is only one box which is placed between box N and box Q, which contains 60 coins. The box which contains highest number of coins is not placed on top. Only two boxes are placed between box S and box T, which contains 25 coins. Box S has less coins than box T. Box S is not placed at an odd numbered position when counted from bottom to top. Box P contains 5 coins. We have following possibilities-

Case 1 Case 2

| Box No. | Box | No. of coins | Box No. | Box | No. of coins |
|---|---|---|---|---|---|
| 8 | | | 8 | N | 50 |
| 7 | N | 50 | 7 | O | |
| 6 | O | | 6 | Q | 60 |
| 5 | Q | 60 | 5 | | |
| 4 | S | 18 | 4 | S | 18 |
| 3 | | | 3 | M | 48 |
| 2 | M | 48 | 2 | | |
| 1 | T | 25 | 1 | T | 25 |

Now, box P is placed somewhere below box S. Box R contains more coins than box O. The box which contains 35 coins will not be placed on top. So the final arrangement will be-

| Box No. | Box | No. of coins |
|---|---|---|
| 8 | N | 50 |
| 7 | O | 30 |
| 6 | Q | 60 |
| 5 | R | 35 |
| 4 | S | 18 |
| 3 | M | 48 |
| 2 | P | 5 |
| 1 | T | 25 |

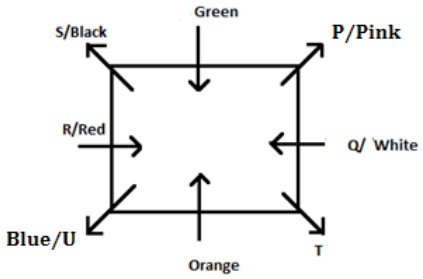
**11. (b); 12. (d); 13. (b);**

**14. (d); 15. (b);**

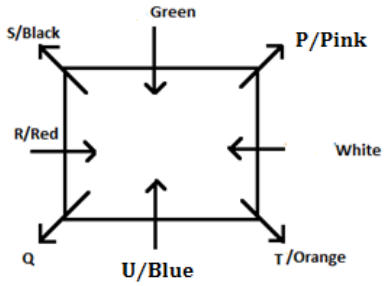
**Directions (16-20):**

R likes red color and sits third to the right of T. Only two persons sit between T and the one who likes green color. The one who likes red color faces the one who likes white color. S likes black color and is an immediate neighbor of R. P likes pink color. U likes blue color. Q sits second to the right of the one who likes orange color. U is not an immediate neighbor of the one who likes white color. We have following possibilities-

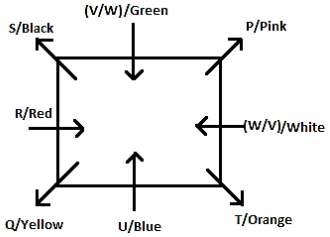
Case 1




Case 2




Now, Neither V nor W likes orange color. This will eliminate Case 1. So the final arrangement will be-




**16. (d); 17. (e); 18. (e);**

**19. (b); 20. (c);**

**Direction (21-25):**

**21. (b); I.** X > U (False) **II.** Z > N (True)

**22. (a); I.** K > B (True) **II.** G ≤ A (False)

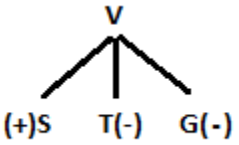
**23. (d); I.** T > Z (False) **II.** X ≥ V (False)

**24. (e); I.** K ≤ V (True) **II.** E = M (True)

**25. (c); I.** R < S (False) **II.** N = R (False)

**Directions (26-30):**

**26. (e);** From both I and II, G has only one brother.

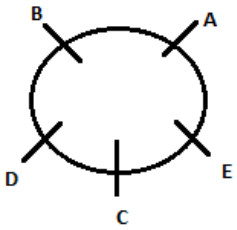



**27. (b);** From I, P > L > O
From II, M > N > __ > __ > __
Hence only II is sufficient to answer the question

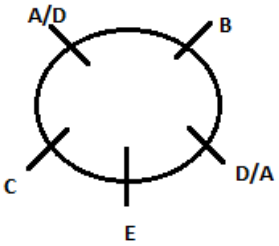
**28. (e);** From I and II both it is clear that 'Human' is coded as 'vo'

**29. (c);** From I, Position of V from top = 25 – 9 + 1 = 17th
Thus position of J from top = 17 – 4 = 13th
From II, Position of M from top = 25 -18 +1 = 8th
Thus position of J from top = 8 + 5 = 13th

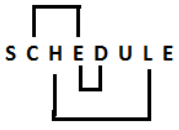
**30. (a);** From I, D is to the immediate right of B




From II, Position of D is not confirmed.




**31. (c);**




**32. (d); 33. (c);**

**34. (e);** She can be Sameer's niece or daughter.

**35. (d);**

**Directions (36-40):**

| Elements | Codes |
|---|---|
| sweets | sa |
| are | ra |
| food | fa |
| tasty | ta |
| good | ga |
| nutrients | na |
| healthy | ha |
| business | ba |

**36. (c);** **37. (b);** **38. (d);**

**39. (c);** **40. (c);**

## QUANTITATIVE APTITUDE

**41. (d);** Let the sum be Rs x

Atq,

$\frac{x\times5\times\frac{5}{2}}{100}+\frac{x\times\frac{7}{2}\times6}{100}+\frac{x\times9\times4}{100}=6950$

$\Rightarrow \frac{x}{8}+\frac{21x}{100}+\frac{9x}{25}=6950$

$\Rightarrow \frac{139x}{200}=6950 \Rightarrow x = \text{Rs } 10{,}000$

**42. (b);** Let the monthly salary of Abhi and Ayush be Rs x

Atq,

$\frac{x\times8}{100}-\frac{x\times7}{100}=66 \Rightarrow x = \text{Rs } 6600$

Total donations made by Abhi and Ayush = 15% of 6600 = Rs 990

Let the monthly salary of Veer be Rs y.

Donations made by Veer $=\frac{y\times9}{100}=990-342$

$\Rightarrow y=\frac{648\times100}{9}=\text{Rs } 7200$

Average monthly salary $=\frac{6600+6600+7200}{3}$

$=$ Rs 6800

**43. (c);** Turnover in 2015 = Rs 24 crore

Turnover in 2016 = Rs 72 crore

Turnover in 2017 = $72\times\frac{11}{8}=99$ crores

Required % $=\frac{99}{12}\times100=825\%$

**44. (a);** Let the present age of Honey be x yrs

Age of his Grand-daughter Hardeep $=\frac{(x-13)}{8}$ yr

Atq,

$\frac{x-13}{8}+27=34 \Rightarrow x-13=56 \Rightarrow x=69$

Age of Hardeep = 7 yrs

$\therefore$ Average age $=\frac{69+7+34}{3}=\frac{110}{3}=36\frac{2}{3}$ yr

**45. (d);** Favourable cases : (3, 6,), (4, 5), (4, 6), (5, 4), (5, 5), (5, 6), (6, 3), (6, 4), (6, 5), (6, 6)

Required probability $=\frac{10}{36}=\frac{5}{18}$

**46. (a); I.** $15x^2+38x+16=0$

$\Rightarrow 15x^2+30x+8x+16=0$

$\Rightarrow 15x(x+2)+8(x+2)=0$

$\Rightarrow x=-2 \text{ or } \frac{-8}{15}$

**II.** $8y^2+20y+12=0$

$\Rightarrow 8y^2+8y+12y+12=0$

$\Rightarrow 8y(y+1)+12(y+1)=0$

$\Rightarrow y=-1 \text{ or } \frac{-12}{8}$

$\therefore$ relationship can't be established

**47. (d); I.** $8x^2+19x+11=0$

$8x^2+8x+11x+11=0$

$\Rightarrow 8x(x+1)+11(x+1)=0$

$\Rightarrow x=\frac{-11}{8} \text{ or } -1$

**II.** $8y^2+27y+22=0$

$\Rightarrow 8y^2+16y+11y+22=0$

$\Rightarrow 8y(y+2)+11(y+2)=0$

$\Rightarrow y=\frac{-11}{8} \text{ or } -2 = x \geq y$

**48. (a); I.** $6x^2-9x+3=0$

$\Rightarrow 6x^2-6x-3x+3=0$

$\Rightarrow 6x(x-1)-3(x-1)=0$

$\Rightarrow x=1 \text{ or } \frac{1}{2}$

**II.** $8y^2-11y+3=0$

$\Rightarrow 8y^2-8y-3y+3=0$

$\Rightarrow 8y(y-1)-3(y-1)=0 \Rightarrow y=1 \text{ or } \frac{3}{8}$

$=$ no relation

**49. (a); I.** $5x^2+6x-11=0$

$\Rightarrow 5x^2+11x-5x-11=0$

$\Rightarrow x(5x+11)-1(5x+11)=0$

$\Rightarrow x=1 \text{ or } \frac{-11}{5}$

**II.** $20y^2+23y-43=0$

$\Rightarrow 20y^2-20y+43y-43=0$

$\Rightarrow 20y(y-1)+43(y-1)=0$

$\Rightarrow y=1 \text{ or } \frac{-43}{20}$

Relationship can't be established

**50. (b); (i)** $3x+7y=28$

**(ii)** $5x+3y=38$

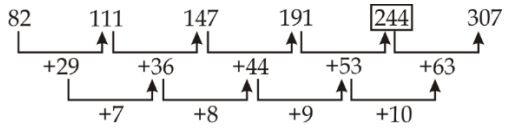
Multiple (i) by 5 and multiple (ii) by 3 and subtract

So, y = 1

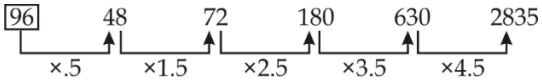
x = 7

$\therefore x > y$

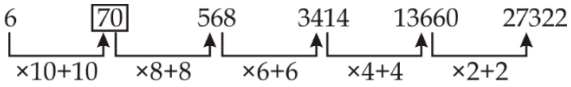
**51. (c);**



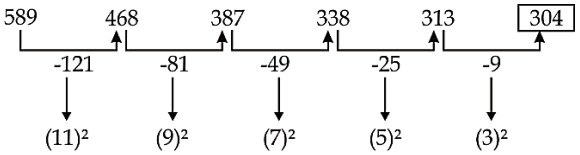

**52. (e);**



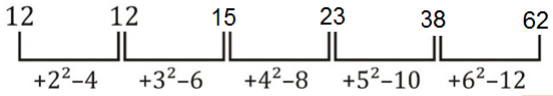

**53. (a);**



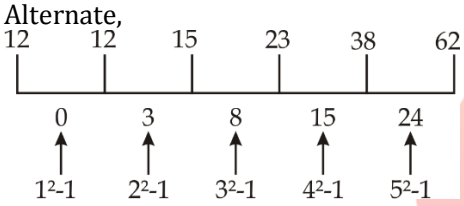

**54. (d);**




**55. (c);** Series is




Alternate,




**56. (b);** Ritu and Anu's one day work $= \frac{1}{16}$

Anu's one day work $= \frac{1}{24}$

Ritu's one day work $= \frac{1}{16} - \frac{1}{24} = \frac{1}{48}$

Neha's one day work $= \frac{1}{30}$

Ratio of Efficiency of Neha and Ritu is $= \frac{1}{30} : \frac{1}{48}$

$= 8 : 5$

**57. (b);** Total required number of numbers = All numbers - numbers with none of its digits repeated

Total numbers with none of its digits repeated

$= 1 \times 9 \times 8 \times 7 = 504$

So, the required number = 1000 – 504 = 496

**58. (d);** $? = \frac{35}{100} \times \frac{48}{100} \times \frac{2}{5} \times 15000 = 1008$

**59. (c);** $\sqrt{24 \times 435 \div ? + 16 + 18} = 18$

$\Rightarrow 24 \times 435 \div ? + 34 = (18)^2 = 324$

$\Rightarrow \frac{24 \times 435}{?} = 290 \quad \Rightarrow \quad ? = \frac{24 \times 435}{290} = 36$

**60. (a);** $[(238 \div 4) + 36.5] \div 12 = \frac{?\times 64}{100}$

$\Rightarrow (59.5 + 36.5) \div 12 = \frac{?\times 64}{100}$

$\Rightarrow 8 = \frac{?\times 64}{100} \Rightarrow ? = 12\frac{1}{2}\%$

**61. (e);** $(108 + 42) \times ? = 1500$

$\Rightarrow ? = \frac{1500}{150} = 10$

**62. (a);** $? = (4 - 3 + 5 - 2) + \left(\frac{2}{3} - \frac{1}{6} + \frac{5}{9} - \frac{7}{12}\right)$

$? = 4 + \left(\frac{24-6+20-21}{36}\right) = 4\frac{17}{36}$

**63. (e);** Distance covered by train P in 7 hours= 7x

$5 = \frac{7x}{(x+30)-x} \Rightarrow x = 150/7$ km/hr

**64. (b);** Let the initial MP for shopkeeper be Rs 100x

New MP $= 100x \times \frac{180}{100} =$ Rs 180x

SP (on which article is sold by Shopkeeper)

$= 180x \times \frac{5}{8} \times \frac{5}{9} =$ Rs 62.5x

CP for the shopkeeper $= \frac{62.5x \times 24}{25} =$ Rs 60x

$\therefore$ Required discount $= \frac{(100x-60x)}{100x} \times 100 = 40\%$

**65. (c);** Using allegations on y concentration;

| A | | B |
|---|---|---|
| 60% | | 40% |
| | 55% | |
| 15 | : | 5 |
| 3 | : | 1 |

3 units= 30gm

So,1 unit=10gm

**66. (a);** Required ratio $= \frac{(1400+1600+1800)}{(900+1300+1200)} = \frac{24}{17}$

**67. (d);** Required % $= \frac{\left(\frac{1800+1200}{2}\right) - \left(\frac{1600+1000}{2}\right)}{\left(\frac{1800+1200}{2}\right)} \times 100$

$= \frac{200}{1500} \times 100 = 13\frac{1}{3}\%$

**68. (b);** Required ratio $= \frac{1600+1200+1400}{1300+1200+1500} = 21 : 20$

**69. (e);** Required average $= \frac{\frac{1200\times 20}{100} + \frac{1400\times 20}{100} + \frac{1600\times 20}{100}}{3}$

$= \frac{240+280+320}{3} = 280$

**70. (c);** Required difference = (1600 + 1200 + 1400) − (1200 + 1500 + 1000)

= 4200 – 3700 = 500

**71. (d);** Required ratio $= \frac{\frac{350\times 70}{100} + \frac{325\times 80}{100}}{\frac{425\times 40}{100} + \frac{350\times 30}{100} + \frac{325\times 20}{100}}$

$= \frac{245+260}{170+105+65} = \frac{505}{340} = \frac{101}{68}$

**72. (b);** Number of engineering books in college D

$= \frac{450\times 68}{100} \times \frac{5}{9} = 170$

Number of management books in college D

$= \frac{450\times 68}{100} \times \frac{4}{9} = 136$

Required difference = 170 − 136 = 34

**73. (c);** Required difference $= 350 - \left(\frac{325\times20}{100} + \frac{450\times32}{100}\right)$
$= 350 - (65 + 144) = 141$

**74. (a);** Required average $= \frac{325\times\frac{80}{100} + 480\times\frac{65}{100} + 350\times\frac{30}{100}}{3}$
$= \frac{260+312+105}{3} = \frac{677}{3} = 225\frac{2}{3}$

**75. (c);** Number of engg. books in college B
$= \frac{350\times70}{100} \times \frac{17}{35} = 119$
Number of management books in college B
$= 350 \times \frac{70}{100} \times \frac{18}{35} = 126$
Number of engg. books in college E
$= 480 \times \frac{65}{100} \times \frac{5}{8} = 195$
Number of management books in college E
$= 480 \times \frac{65}{100} \times \frac{3}{8} = 117$
Required difference = (195 + 119) – (126 + 117)
= 71

**76. (a);** **Quantity I**
Let the previous price be Rs 100 per kg
total cost of 20 kg wheat = Rs 2000
New price = Rs 80 per kg
New quantity = Rs $\frac{2000}{80}$ = 25 kg
**Quantity II**
Weight of new student = (15 × 12.8) – (14 × 13)
= 192 – 182 = 10 kg
Quantity I > Quantity II

**77. (e);** **Quantity I**
Favourable cases : HHT, HTH, THH
Total cases = $2^3 = 8$
∴ Required probability = $\frac{3}{8}$
**Quantity II**
Let the fraction be $\frac{x}{y}$
Then,
$\frac{x\times1.5}{y\times0.9} = \frac{5}{8} \Rightarrow \frac{x}{y} = \frac{5\times0.9}{8\times1.5} = \frac{3}{8}$
Quantity I = Quantity II

**78. (b);** **Quantity I**
Total SP = Rs 150 ×2 = Rs 300
Total CP = $\frac{150\times100}{120} + \frac{150\times100}{80}$ = Rs 312.5
Loss = Rs 12.5
**Quantity II**
CP = $\frac{805}{115} \times 100$ = Rs 700
Profit = Rs 717 – Rs 700 = Rs 17
**Quantity II > Quantity I**

**79. (a);** **Quantity I**
$A = P\left(1 + \frac{R}{100}\right)^n$
$\Rightarrow 245 = P\left(1 + \frac{1}{6}\right)^2 \Rightarrow 245 = P\left(\frac{7}{6}\right)^2$
$\Rightarrow \frac{245\times36}{49} = P$ = Rs 180
**Quantity II**
$R = \frac{120\times100}{500\times4} = 6\%$
Amounts $= 150 + \frac{150\times6\times5}{2\times100}$ = 22.5 + 150
= Rs 172.5
**Quantity I > Quantity II**

**80. (e);** **Quantity I**
Volume of spherical ball = Volume of 8 identical cones
$\Rightarrow \frac{4}{3} \times \pi \times (3.5)^3 = 8 \times \frac{1}{3} \times \pi \times \left(\frac{7}{4}\right)^2 \times (x)$
$\Rightarrow x = 7$ cm
**Quantity II**
Let the breadth of rectangle be x cm
Then, length = x + 4 cm
Side of square = 9 cm
Area of square = 81 $cm^2$
Atq,
$x \times (x+4) = 81 - 4$ $cm^2$
$\Rightarrow x^2 + 4x - 77 = 0$
$\Rightarrow x = -11$ or 7
$\Rightarrow$ breadth = 7 cm
**Quantity I = Quantity II**

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# Mock 14

# IBPS RRB Clerk Prelims 2018

## REASONING ABILITY

**Directions (1-5):** Read the following information carefully and answer the questions given below.
Six persons J, P, Q, R, V, Z are sitting in a row. Some of them are facing north while some of them are facing south. J sits second from one of the extreme end of the row. P sits third to the right of J. R is not an immediate neighbor of P and Z. Both the immediate neighbors of V faces opposite direction. Both the Immediate neighbors of Z faces same direction. V sits second to the left of P. Q sits to the right of R. R faces north. Q faces same direction as Z.

**1.** Four of the following five are alike in a certain way, and so form a group. Which of the following does not belong to the group?
(a) R, V (b) V, P (c) J, P
(d) V, Q (e) J, R

**2.** What is the position of Q with respect to Z?
(a) Second to the left (b) Third to the right
(c) Third to the left (d) Fifth to the right
(e) Second to the right

**3.** Who amongst the following sits exactly between Z and J?
(a) R (b) P (c) Q
(d) Both V and Q (e) V

**4.** How many persons in the given arrangement are facing North?
(a) More than four (b) Four
(c) One (d) Three (e) Two

**5.** Who is sitting 4th to the right of Q?
(a) R (b) Z (c) P
(d) J (e) None of these

**Directions (6-8):** Some statements are given followed by two conclusions. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the following conclusions follow from the given statements:

**6.** **Statements**: –No symbol is letter. All expression are letter. Some symbols are word.
**Conclusions:**
I. No word is letter.
II. Some symbols being expression is possibility.
(a) Only I follows
(b) Only II follows
(c) Either I or II follows
(d) Neither I nor II follows
(e) Both I and II follow

**7.** **Statements:** Some logic are answers. All keys are answers.
**Conclusions**:
I. All keys are logic.
II. No keys are logic.
(a) Only I follows
(b) Only II follows
(c) Either I or II follows
(d) Neither I nor II follows
(e) Both I and II follow

**8.** **Statement:** –All numbers are digits. Some numbers are points. Some points are marks.
**Conclusions**:
I. Some points are digits.
II. All marks being numbers is a possibility.
(a) Only I follows
(b) Only II follows
(c) Either I or II follows
(d) Neither I nor II follows
(e) Both I and II follow

**Directions (9-13):** Read the following information carefully and answer the questions given below.
Seven boxes M, N, O, P, Q, R, S are arranged one above another. Only two boxes are placed above box P. Only one box is placed between box S and P. As many as boxes are placed between box S and Q as between box Q and M. Three boxes are placed between box N and O. N is placed above O.

**9.** How many total numbers of boxes are placed in between box S and Q?
(a) Two (b) One (c) Three
(d) More than three (e) None

**10.** Which of the following is true regarding Box N?
(a) Three boxes are placed between box Q and N
(b) Box N is placed below Q
(c) Box N is placed at top
(d) Only one box is placed above box N
(e) No box is placed between box N and R

**11.** Which box is placed at top?
(a) S (b) N (c) Q
(d) R (e) M

**12.** Which box is placed immediately above box Q?
(a) M (b) P (c) S
(d) N (e) R

**13.** How many boxes are placed in between R and M?
(a) Two (b) One (c) Three
(d) More than three (e) None

**Directions (14-18):** Answer these questions based on the following information.
In a certain code:
"arrange things in order" is coded as - "po gb ik mn"
"order for new things" is coded as - "po gb fc bv"
"new places to order" is coded as - "gb cq bv ra"
"places in unknown country" is coded as – " de ra lf ik"

**14.** What will be the code for "order"?
(a) gb (b) fc (c) cq
(d) ik (e) can't be determined

**15.** What may be the code for "things to vanish"?
(a) po cq hx (b) po vm ik
(c) cq fc ik (d) either (a) or (b)
(e) None of these

**16.** What will be the code for " arrange"?
(a) gb (b) mn (c) cq
(d) ik (e) can't be determined

**17.** What may be the code for " in country"?
(a) lf ik
(b) de ik
(c) po gb
(d) either (a) or (b)
(e) None of these

**18.** "bv" is the code for?
(a) things (b) new (c) arrange
(d) places (e) None of these

**Directions (19-23):** Read the following information carefully and answer the questions given below.
Six persons A, C, Q, R, T, Y were born in six different months January, April, May, August, September, December of a year. Three persons were born in between A and Y. A was born before Y. No one was born in between C and A. Two persons were born in between C and R. T was born before Q.

**19.** Who among the following was born in May?
(a) C (b) A (c) Q
(d) T (e) Y

**20.** How many persons were born between A and Q?
(a) One (b) Three (c) Four
(d) Two (e) None of these

**21.** How many persons born were before R?
(a) One (b) Three (c) Four
(d) Two (e) None of these

**22.** Who among the following is the oldest?
(a) C (b) A (c) Q
(d) T (e) Y

**23.** Which of the following is not true regarding Y?
(a) Four persons born between C and Y
(b) R was born before Y
(c) Q is born immediately after Y
(d) Only Q was born between Y and R
(e) No one was born after Y

**24.** A family consists of five members A, P, R, T, H. P is wife of A. R is the daughter of A. R has only one brother T. H is daughter-in-law of P. How is H related to R?
(a) mother (b) sister-in-law
(c) daughter (d) daughter-in-law
(e) none of these

**25.** If the digits of the number "46752983" are arranged in increasing order form left to right within the number, then how many digits will remain on the same position after the applied operation?
(a) Two (b) One (c) Three
(d) Four (e) None of these

**26.** How many meaningful words can be made by using letters 'A', 'E', 'L' and 'T', keeping L as the first letter of the word?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**Directions (27-31):** Read the following information carefully and answer the questions given below.
Point E is 15m east of point B. Point G is 20m north of point E. Point K is 10m east of point G. Point M is 30m south of point K. Point P is 20m west of point M. Point L is 10m north of point P.

**27.** If Point V is 10m east of point S and Point S is 10m north of point L, then what will be the distance between point E and V?
(a) 10m (b) 15m (c) 20m
(d) 5m (e) 25m

**28.** What is the total distance between point B and L?
(a) 10m (b) 15m (c) 20m
(d) 5m (e) 30m

**29.** If Point Z is 10m north of point M, then point what is the distance between point E and Z?
(a) 10m (b) 15m (c) 20m
(d) 25m (e) 30m

**30.** Point K is in which direction from point P?
(a) South (b) South-east (c) North
(d) North-east (e) North-west

**31.** Four of the following five are alike in a certain way, and so form a group. Which of the following does not belong to the group?
(a) P, L (b) P, M (c) G, E
(d) L, E (e) G, B

**Directions (32-36):** These questions are based on the following arrangement. Study it carefully and answer the questions below it.
1 3 5 3 4 5 9 2 8 7 2 3 6 5 2 7 3 8 1 2 1 8 4 9 8 1 2 4 7 3 5 2 4 8 9 8 2 4

**32.** Which element is exactly midway between the seventh element from the left end and sixteenth from the right end?
(a) 8 (b) 2 (c) 5
(d) 6 (e) 7

**33.** How many perfect squares are there to the right of the fourteenth element from the right end?
(a) Two (b) One (c) Three
(d) Four (e) more than four

**34.** How many perfect cubes are there in the above arrangement, each of which is immediately preceded by an odd number and immediately followed by an even number?
(a) None (b) Three (c) Two
(d) One (e) More than three

**35.** How many such odd digits are there in the given arrangement, each of which is immediately followed and preceded by an odd number?
(a) None (b) One (c) Two
(d) Three (e) More than three

**36.** Which of the following element is $5^{th}$ to the right of $10^{th}$ from the right end?
(a) 9 (b) 8 (c) 2
(d) 1 (e) 4

**Directions (37-40):** Read the following information carefully and answer the questions given below.
There are six wallets A, B, C, P, Q and R, each containing different amount of money in it. Wallet B has more money than wallet Q but less than wallet P. Only wallet R has more money than wallet C. Wallet Q does not has the least amount of money. The wallet containing $3^{rd}$ highest amount of money has Rs. 3000, which is Rs.1000 more than the wallet which has $2^{nd}$ lowest amount of money.

**37.** Which of the following wallet has the least amount of money?
(a) A (b) B (c) C
(d) Q (e) P

**38.** What may be the amount of money in wallet C?
(a) Rs. 2500 (b) Rs. 2000 (c) Rs. 3500
(d) Rs. 2250 (e) Rs. 2100

**39.** What may be the amount of money in wallet B, if it has Rs. 250 less than the wallet P?
(a) Rs. 2500 (b) Rs. 2750 (c) Rs. 3500
(d) Rs. 3250 (e) Rs. 2200

**40.** Which of the following is true regarding wallet P?
(a) Only wallet A has less money than wallet P
(b) Wallet B has more money than wallet P
(c) Wallet P has $3^{rd}$ highest amount of money
(d) Wallet Q has more amount of money than P
(e) none of these

## QUANTITATIVE APTITUDE

**41.** The upstream speed of a boat is 18 km/hr which is 500% more than the speed of stream. Find how much distance boat will cover in 3 hours while travelling in downstream.
(a) 66 km (b) 63 km (c) 72 km
(d) 75 km (e) 78 km

**42.** If $A^2 - B^2 = 252$ and $A + B = 42$ then find the value of 'B'?
(a) 18 (b) 16 (c) 14
(d) 20 (e) 22

**43.** A alone can do a work in 40 days. The ratio of time taken by A and B to do the same work is 5 : 3. Then, find in how many days both will complete the work together ?
(a) 18 days (b) 12 days (c) 20 days
(d) 15 days (e) 10 days

**44.** A train having speed of 72 km/hr crosses a pole in 18 sec and a platform in 33 sec. Find the length of platform?
(a) 320 m (b) 300 m (c) 330 m
(d) 360 m (e) 350 m

**45.** The circumference of a circle is 66 cm. Find the approximate area of square if the radius of circle is two times of the side of a square.
(a) 18 $cm^2$ (b) 32 $cm^2$ (c) 25 $cm^2$
(d) 36 $cm^2$ (e) 28 $cm^2$

**Directions (46-50):** What approximate value should come in place of question mark (?) in the following questions?

**46.** $\sqrt{1443.98} \div 18.98 + 328.1 = ? \times 22.01$
(a) 10 (b) 12 (c) 18
(d) 15 (e) 22

**47.** 29.98% of 880.001 = ? + 110.9
(a) 144 (b) 153 (c) 158
(d) 160 (e) 163

**48.** $(?)^2 + 255.93 = 49.932\%$ of 800.112
(a) 12 (b) 8 (c) 15
(d) 18 (e) 6

**49.** $\sqrt[3]{?}+?=256.01$
(a) 230 (b) 235 (c) 238
(d) 241 (e) 244

**50.** 74.91% of ? = $(17.932)^2$
(a) 420 (b) 425 (c) 408
(d) 432 (e) 444

**Directions (51-55):-**Find the wrong number in the given number series questions.

**51.** 100, 118, 136, 149, 160, 167, 172
(a) 172 (b) 160 (c) 100
(d) 118 (e) 136

**52.** 1.5, 2.5, 6, 24, 100, 505, 3036
(a) 1.5 (b) 6 (c) 100
(d) 3036 (e) 2.5

**53.** 160, 80, 80, 120, 240, 600, 900
(a) 240 (b) 120 (c) 160
(d) 900 (e) 600

**54.** 5040, 2520, 840, 210, 42, 8, 1
(a) 8 (b) 5040 (c) 840
(d) 1 (e) 42

**55.** 15, 17, 26, 151, 200, 929, 1050
(a) 17 (b) 1050 (c) 15
(d) 929 (e) 26

**Direction (56-60):** There are total five departments in a company. There are total 90 employees in Finance department which is 25% of total employees in the company. 2/9 of the total employees of the company are working in HR department. Employees working in Sales department is 25% more than that in HR department. Ratio between employees working in Security and Housing department is 4 : 5.

**56.** Find number of employees working in HR department is what percent more than number of employees working in Security department?
(a) 250% (b) 200% (c) 150%
(d) 100% (e) 50%

**57.** Find the average number of employees working in Sales, Finance and Housing department?
(a) 60 (b) 70 (c) 80
(d) 90 (e) 100

**58.** Number of employees in Housing department is how much more than number of employees in Security department?
(a) 10 (b) 20 (c) 30
(d) 40 (e) 50

**59.** In Security department, 40% are female employees then find total male employees working in Security department?
(a) 16 (b) 40 (c) 32
(d) 8 (e) 24

**60.** Ratio between total number of male and female employees in HR department is 2 : 3. Find total number of female employees working in HR department?
(a) 32 (b) 48 (c) 64
(d) 40 (e) 56

**Directions (61-70):** What value should come in place of question mark (?) in the following questions?

**61.** $?^2 = 4^2 + 8^2 - 31$
(a) 6 (b) 7 (c) 8
(d) 9 (e) 10

**62.** $13 \times 6 + ? \times 4 = 18 \times 7$
(a) 6 (b) 8 (c) 10
(d) 12 (e) 14

**63.** 40% *of* ? = 25% *of* 320 + 75% *of* 160
(a) 500 (b) 400 (c) 300
(d) 200 (e) 100

**64.** $11^2 + 6^2 = ? + 37$
(a) 130 (b) 110 (c) 120
(d) 140 (e) 150

**65.** $\frac{360}{?} = 12 \times 6 - 3^3$
(a) 9 (b) 5 (c) 6
(d) 7 (e) 8

**66.** $\sqrt{225} + \sqrt{441} = ?^2$
(a) 3 (b) 4 (c) 5
(d) 6 (e) 8

**67.** $16 \times 8 - ? = 2^6$
(a) 64 (b) 32 (c) 128
(d) 192 (e) 96

**68.** $16 \times 54 \div 36 + 6 = ?$
(a) $\frac{144}{7}$ (b) 30 (c) 20
(d) 24 (e) 16

**69.** $? = \sqrt{6 \times 3 \times 5 + 50\% \text{ of } 620}$
(a) 14 (b) 16 (c) 18
(d) 10 (e) 20

**70.** $6^2 = \frac{18 \times 8 - ? \times 2}{3}$
(a) 36 (b) 27 (c) 18
(d) 9 (e) 54

**Direction (71-75): -** Table given below shows marks obtained by four students in four different subjects in an exam. Study the data carefully and answer the following questions

| Subjects / Students | English | Hindi | Science | Maths |
|---|---|---|---|---|
| **Paul** | 65 | 60 | 80 | 65 |
| **Aditya** | 75 | 75 | 60 | 75 |
| **Neeraj** | 85 | 55 | 95 | 85 |
| **Sandy** | 60 | 60 | 65 | 60 |

**71.** Marks scored by Sandy in English and Maths together is what percent of the Marks scored by Aditya and Neeraj in English together?
(a) 25% (b) 50% (c) 75%
(d) 100% (e) 125%

**72.** Find the ratio of total marks scored by all four students together in Hindi to total marks scored by all four students together in Science?
(a) 5 : 6 (b) 57 : 50 (c) 1 : 1
(d) 20 : 19 (e) 6 : 5

**73.** Total marks scored by Paul are how much more/less than total marks scored by Neeraj?
(a) 70 (b) 60 (c) 40
(d) 50 (e) 80

**74.** Find the average of the marks scored by Aditya in English, Hindi and Science together?
(a) 65 (b) 85 (c) 80
(d) 75 (e) 70

**75.** If maximum marks for each subject are 100 then find what percentage of total marks is obtained by Sandy?
(a) 64.25% (b) 61.25% (c) 67.25%
(d) 70.25% (e) 73.25%

**76.** An article was sold at a discount of 20% at Rs. 1020. If the article was sold at discount of Rs. 199 in place of 20% discount then find the selling price.
(a) Rs. 1066 (b) Rs. 1076 (c) Rs. 1086
(d) Rs. 1096 (e) Rs. 1094

**77.** The total age of A, B and C four years hence will be 98 years. Find the age of C four years hence if the present age of A and B is 32 years and 23 years respectively.
(a) 31 yr. (b) 32 yr. (c) 35 yr.
(d) 37 yr. (e) 33 yr.

**78.** A invests Rs. 12,000 for X months while B invests Rs. 16,000 for 9 months in a scheme. The profit share of B is Rs. 12,000 out of total profit Rs. 21,000. Then find the value of X ?
(a) 6 months (b) 9 months (c) 8 months
(d) 7 months (e) 10 months

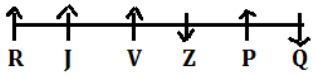
**79.** A mixture of milk and water contains 60% milk and remaining water. How much water should be added (in percentage) in mixture to reverse the proportion of milk and water?
(a) 25% (b) 37.5% (c) 62.5%
(d) 75% (e) 50%

**80.** The simple interest on a certain sum for 2 years at 8% per annum is Rs. 225 less than the compound interest on the same sum for 2 years at 10% per annum. The sum is:
(a) Rs. 3200 (b) Rs. 4200 (c) Rs. 4000
(d) Rs. 3600 (e) Rs. 4500

# Mock 14 : Solutions

## REASONING ABILITY

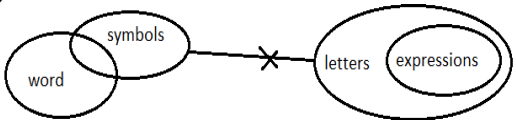
**Direction (1-5):**



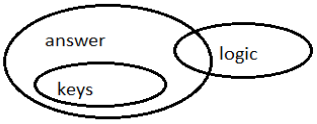

**1. (d)** **2. (a)** **3. (e)**
**4. (b)** **5. (d)**

**Directions (6-8):**

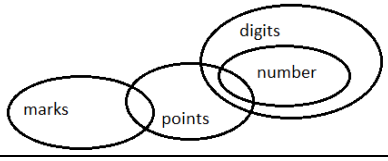
**6. (d);**




**7. (d);**




**8. (e);**




**Direction (9-13):**

| Boxes |
|---|
| S |
| N |
| P |
| Q |
| R |
| O |
| M |

**9. (a)** **10. (d)** **11. (a)**
**12. (b)** **13. (b)**

**Directions (14-18):**

| Word | Code |
|---|---|
| Places | ra |
| Order | gb |
| New | bv |
| To | cq |
| Things | po |
| For | fc |
| In | ik |
| Arrange | mn |
| Unknown/country | de/lf |

**14. (a)** **15. (a)** **16. (b)**

**17. (d)** **18. (b)**

**Direction (19-23):**

| Months | Persons |
|---|---|
| January | C |
| April | A |
| May | T |
| August | R |
| September | Q |
| December | Y |

**19. (d)** **20. (d)** **21. (b)**

**22. (a)** **23. (c)**

**24. (b)**

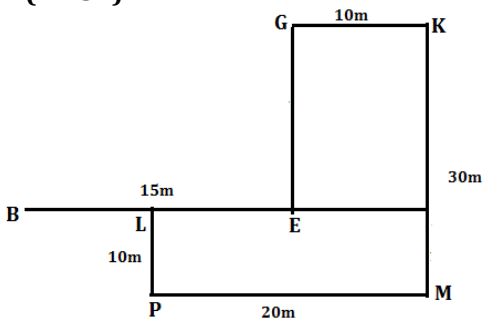
A(+) = P(-)
|
R(-) — T(+) = H(-)

**25. (a)**

4 6 7 5 2 9 8 3
| |
2 3 4 5 6 7 8 9

**26. (b);** LATE, LEAT

**Direction (27-31):**




**27. (a)** **28. (d)** **29. (a)**

**30. (d)** **31. (e)**

**32. (b);** **33. (e);**

**34. (c);** 184,982

**35. (d);** 735,135,353

**36. (b);**

**Directions (37-40):**

R > C > P (Rs. 3000) > B > Q (Rs.2000) > A

**37. (a);** **38. (c);** **39. (b);**

**40. (c);**

## QUANTITATIVE APTITUDE

**41. (c);** Let the speed of stream be $x$ km/hr
Then,
Speed of upstream = $x \times \frac{600}{100} = 18$
$\Rightarrow x = 3$km/hr
Speed of boat in still water = 18 + 3 = 21 km/hr
Distance covered in 3 hours in downstream = (21 + 3) × 3 = 72 km

**42. (a);** $(A + B)(A - B) = 252$
$\Rightarrow 42 \times (A - B) = 252$ $[A + B = 42\ given]$
$\Rightarrow (A - B) = 6$ ...(i)
And $A + B = 42$ ...(ii)
Solve (i) and (ii), we get
$B = 18$

**43. (d);** Let the time taken by A and B be $5x$ days and $3x$ days respectively.
$\Rightarrow 5x = 40$ days
$\Rightarrow x = 8$ days
B's time = 3 × 8 = 24 days
Time taken by both together to complete the work
$= \frac{40 \times 24}{40 + 24}$ $[use\ \frac{a \times b}{a + b}$ for two persons]
= 15 days.

**44. (b);** Speed of train = 72 km/hr
$= 72 \times \frac{5}{18} = 20$ m/s
Length of train = 18 × 20 = 360 m
Length of (train + platform)
= 20 × 33 = 660 m
∴ length of platform = 660 m – 360 m
= 300 m

**45. (e);** ATQ,
$2\pi r = 66$ cm
$\Rightarrow 2 \times \frac{22}{7} \times r = 66$ cm
$\Rightarrow r = \frac{66 \times 7}{44} = \frac{21}{2}$ cm
Side of a square = $\frac{21}{2 \times 2} = \frac{21}{4}$ cm
∴ Area of square = $(\text{side})^2 = \left(\frac{21}{4}\right)^2$
$= \frac{441}{16} \approx 28\ cm^2$

**46. (d);** $\sqrt{1444} \div 19 + 328 = ? \times 22$
$\Rightarrow 2 + 328 = ? \times 22$
$\Rightarrow ? = \frac{330}{22} = 15$

**47. (b);** 30% of 880 = ? + 111
$\Rightarrow \frac{30 \times 880}{100} = ? + 111$
$\Rightarrow ?$ = 264 – 111 = 153.

**48. (a);** $(?)^2 + 256 = \frac{50\times800}{100}$
$(?)^2 + 256 = 400$
$\Rightarrow (?)^2 = 144$
$\Rightarrow ? = 12$

**49. (e);** $12 + ? = 256$
$\Rightarrow ? = 244$

**50. (d);** $\frac{75\times?}{100} = (18)^2$
$\Rightarrow \frac{75\times?}{100} = 324$
$\Rightarrow ? = \frac{324\times100}{75} = 432.$

**51. (d);**

100 | 119 | 136 | 149 | 160 | 167 | 172
+19 | +17 | +13 | +11 | +7 | +5

**52. (b);**

1.5 | 2.5 | 7 | 24 | 100 | 505 | 3036
×1+1 | ×2+2 | ×3+3 | ×4+4 | ×5+5 | ×6+6

**53. (d);**

160 | 80 | 80 | 120 | 240 | 600 | 1800
×0.5 | ×1 | ×1.5 | ×2 | ×2.5 | ×3

**54. (a);**

5040 | 2520 | 840 | 210 | 42 | 7 | 1
÷2 | ÷3 | ÷4 | ÷5 | ÷6 | ÷7

**55. (c);**

16 | 17 | 26 | 151 | 200 | 929 | 1050
+1 | +9 | +125 | +49 | +729 | +121
$1^3$ | $3^2$ | $5^3$ | $7^2$ | $9^3$ | $11^2$

**Solution (56-60):** Let total employees in company be 100x
ATQ,
$\frac{25}{100} \times 100x = 90$
$\Rightarrow$ Total employees in company = $100x = 360$
Employees working in HR department
$= \frac{2}{9} \times 360 = 80$
Employees working in Sales department
$= \frac{125}{100} \times 80 = 100$
Remaining employees = $360 - 90 - 80 - 100 = 90$
Employees working in Security department
$= \frac{4}{9} \times 90 = 40$
Employees working in Housing department
$= \frac{5}{9} \times 90 = 50$

| Sales | Finance | HR | Security | Housing | Total |
|---|---|---|---|---|---|
| 100 | 90 | 80 | 40 | 50 | 360 |

**56. (d);** Required % = $\frac{80-40}{40} \times 100 = \frac{40}{40} \times 100$
$= 100\%$

**57. (c);** Required average = $\frac{100+90+50}{3} = \frac{240}{3} = 80$

**58. (a);** Required difference = $50 - 40 = 10$

**59. (e);** Total number of male employees working in Security department = $\frac{60}{100} \times 40 = 24$

**60. (b);** Total number of female employees working in HR department = $\frac{3}{5} \times 80 = 48$

**61. (b);** $?^2 = 4^2 + 8^2 - 31$
$?^2 = 16 + 64 - 31 = 80 - 31 = 49$
$? = 7$

**62. (d);** $13 \times 6 + ? \times 4 = 18 \times 7$
$78 + ? \times 4 = 126$
$? = \frac{126-78}{4} = 12$

**63. (a);** $40\%\ of\ ? = 25\%\ of\ 320 + 75\%\ of\ 160$
$\frac{2}{5} \times ? = \frac{25}{100} \times 320 + \frac{75}{100} \times 160$
$\frac{2}{5} \times ? = 80 + 120$
$? = 200 \times \frac{5}{2} = 500$

**64. (c);** $11^2 + 6^2 = ? + 37$
$121 + 36 - 37 = ?$
$? = 120$

**65. (e);** $\frac{360}{?} = 12 \times 6 - 3^3$
$\frac{360}{?} = 72 - 27$
$? = \frac{360}{45} = 8$

**66. (d);** $\sqrt{225} + \sqrt{441} = ?^2$
$15 + 21 = ?^2$
$?^2 = 36$
$? = 6$

**67. (a);** $16 \times 8 - ? = 2^6$
$128 - 64 = ?$
$? = 64$

**68. (b);** $16 \times 54 \div 36 + 6 = ?$
$? = 16 \times \frac{54}{36} + 6 = 30$

**69. (e);** $? = \sqrt{6 \times 3 \times 5 + 50\%\ of\ 620}$
$? = \sqrt{90 + 310} = \sqrt{400} = 20$

**70. (c);** $6^2 = \frac{18\times8-?\times2}{3}$
$36 \times 3 = 144 - ? \times 2$
$? \times 2 = 144 - 108$
$? = \frac{36}{2} = 18$

**71. (c);** Marks scored by Sandy in English and Maths together = 60 + 60 = 120
Marks scored by Aditya and Neeraj in English together = 75 + 85 = 160
Required % = $\frac{120}{160} \times 100 = 75\%$

**72. (a);** Required ratio = $\frac{60+75+55+60}{80+60+95+65} = \frac{250}{300} = \frac{5}{6}$

**73. (d);** Total marks scored by Paul = 65 + 60 + 80 + 65 = 270
Total marks scored by Neeraj = 85 + 55 + 95 + 85 = 320
Required difference = 320 − 270 = 50

**74. (e);** Required average = $\frac{75+75+60}{3} = 70$

**75. (b);** $Required\ \% = \frac{60+60+65+60}{400} \times 100 = 61.25\%$

**76. (b);** MP of article = $\frac{1020}{80} \times 100$ = Rs. 1275
Selling price = 1275 – 199 = Rs. 1076

**77. (c);** Sum of present age of A, B and C
= 98 – 4 × 3
= 98 – 12
= 86 yr.
Present age of C = 86 – (32 + 23) = 31 yr.
Age of C four years hence = 31 + 4 = 35 yr.

**78. (b);** Profit share ratio of

| $A$ | : | $B$ |
|---|---|---|
| $12000 \times x$ | | $16000 \times 9$ |
| $x$ | : | 12 |

ATQ,
$\frac{x}{12} = \frac{9000}{12000}$
$\Rightarrow x = 9$ months.

**79. (e);** Let, total quantity = 100$\ell$
Quantity of milk = 60 $\ell$
And quantity of water = 40 $\ell$
ATQ,
$\frac{40}{100} = \frac{60}{100+x}$
2 (100 + x) = 5 × 60
200 + 2x = 300
2x = 100
x = 50 $\ell$
$Water\ added\ in\ \% = \frac{50}{100} \times 100 = 50\%$

**80. (e);** $Let\ the\ sum\ be\ Rs.P.$
$P\left[\frac{11}{10} \times \frac{11}{10} - 1\right] - \frac{P \times 2 \times 8}{100} = 225$
$\Rightarrow P\left[\frac{21}{100}\right] - \frac{16P}{100} = 225$
$\Rightarrow P = \frac{225 \times 100}{5}$
$\Rightarrow P = Rs.4500$

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# Mock 15

# IBPS RRB Clerk Prelims 2017

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements(s). These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** A < B >N = M, B ≤ V, M > R
**Conclusions: I.** B > R **II.** V > A

**2.** **Statements:** D <E >F = G > H = I ≤ J
**Conclusions: I.** F > I **II.** J ≥ E

**3.** **Statements:** M < N < O > P, N<E
**Conclusions: I.** E < M **II.** E>O

**4.** **Statements:** C ≥ D< E = F ≥ G, C < W
**Conclusions: I.** E =G **II.** G< E

**5.** **Statements:** R < T < S < P > Q, R> X
**Conclusions: I.** S < Q **II.** X < S

**Direction (6-10):** Study the following information carefully and answer the question given below-
Eight people viz. G, H, I, J, K, L, M and N lives in a Building on different floors from top to bottom (such as ground floor numbered as 1 and top is numbered as 8) but not necessarily in the same order.
There is a gap of three floors between J and L and both of them lives on odd number of floor. N lives just above H, who lives on even numbered floor. I lives on floor number 6.Only one person lives between L and M. J lives above I. Three persons live between K and H.

**6.** Who among the following lives on ground floor?
(a) N (b) J (c) K
(d) M (e) None of these

**7.** Who among the following lives immediately below L?
(a) K (b) I (c) G
(d) H (e) None of these

**8.** How many persons lives between I and H?
(a) One (b) Three (c) Fives
(d) Two (e) None of these

**9.** Who among the following lives on Top floor?
(a) N (b) J (c) K
(d) M (e) None of these

**10.** Which of the following combination is false?
(a) J-7 (b) L-3 (c) G-2
(d) H-4 (e) N-1

**11.** In a row of children facing North, Rajan is twelfth from the right end and is fifth to the right of Satyarthi who is tenth from the left end. How many total number of children are there in the row?
(a) 29 (b) 28 (c) 26
(d) 27 (e) None of these

**12.** Raj leaves his home and goes straight 20 meters, then turns right and goes 10 meters. He turns left and goes 30 meters and finally turns right and starts walking. If he is now moving in the north direction, then in which direction did he start his walking?
(a) East (b) West (c) North
(d) South (e) None of these

**Directions (13-17):** In each of the questions given below, a group of digits/letter is given followed by four combinations of symbols numbered (a), (b), (c) and (d). You have to find out which of the four combinations correctly represents the group of digits/letters based on the symbol codes and the conditions given below. If none of the four combinations represents the group of digits correctly, give (e) ie 'None of these' as the answer.

| Digit | Z | L | F | 1 | I | 5 | 7 | A | E | B | 2 | X | 6 | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | @ | ! | $ | ^ | µ | Δ | Å | & | > | ≠ | < | ® | £ | ∞ |

Condition for coding the group elements:
(i) If the first letter is Vowel and the last digit is divisible by 2, then both are to be coded as +.
(ii) If the first as well as the last digit is odd, then both are to be coded by the code of the first digit.
(iii) If the first letter is consonant and the last digit is odd number, then the code of first and last elements are to be interchanged.

**13.** WX6ZF1
(a) ^®$@£∞ (b) ^@$∞<! (c) ^®£@$∞
(d) ∞®@>!< (e) None of these

**14.** FE1XI6
(a) ∞^@<!£ (b) $<^^£@ (c) $>^®µ£
(d) $<^@^£ (e) None of these

**15.** 5I2IA1
(a) Δ!<μ&Δ (b) Δ!&^<μ (c) Δ!<μ^&
(d) μ&Δ!<^ (e) None of these

**16.** E2ZA6
(a) &>!^@ (b) @<@&! (c) @&<@&
(d) +<@&+ (e) None of these

**17.** IZ2W2
(a) @≠^$& (b) +@<∞+ (c) <∞μ@≠
(d) @≠>!^ (e) None of these

**Directions (18-22):** Read the following information carefully and answer the questions given below.
A, B, C, D, E, F, G and H are eight members standing in a row (not necessarily in the same order) facing north.
C and B have as many members between them as G and C have between them. D, who is 4th from the extreme left end, is 2nd to the left of E. G is 3rd place away from one of the extreme end. Neither B nor C sits any extreme end. F sits immediate right of A.

**18.** How many persons sit between G and B?
(a) One (b) Three (c) Two
(d) Four (e) None of these

**19.** Who among the following persons sits at extreme ends?
(a) A, G (b) B, C (c) F, H
(d) H, A (e) None of these

**20.** Who sits second to the right of E?
(a) B (b) H (c) G
(d) C (e) None of these

**21.** Who sits third to the left of G?
(a) A (b) None (c) F
(d) E (e) B

**22.** Who sits immediate left of C?
(a) A (b) H (c) C
(d) D (e) None of these

**23.** Find the odd one out?
(a) ACB (b) DFE (c) GIH
(d) JLK (e) MNO

**Directions (24-28):** Study the following number sequence and answer the questions following it.
**9 3 2 4 5 7 9 5 8 1 5 0 6 4 2 9 8 2 6 3 5 9 8 2 1 5 4 3 2 1**

**24.** How many odd numbers are there in the numeric series which are immediately preceded by a number, which is a whole square?
(a) One
(b) Two
(c) Three
(d) More than three
(e) None of these

**25.** If all the odd numbers are dropped from the series, which number will be eighth to the left of eleventh number from the left end?
(a) 2 (b) 8 (c) 6
(d) 4 (e) None of these

**26.** If 1 is subtracted from all odd numbers and 2 is subtracted from all even numbers in the given number series, then which number will be sixteenth from the right end?
(a) 0 (b) 2 (c) 3
(d) 8 (e) 6

**27.** If the position of the 1st and the 16th numbers, the 2nd and the 17th numbers, and so on up to the 15th and the 30th numbers, are interchanged, which number will be 7th to the right of 19th number from the right end?
(a) 5 (b) 9 (c) 8
(d) 4 (e) None of these

**28.** How many total even numbers which is immediately preceded by a 'whole cube' or 'immediately preceded by a whole square' in the above sequence?
(a) Four (b) Five (c) Three
(d) Six (e) None of these

**Directions (29–33):** In each question below are given some statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows/follow from the given statements, disregarding commonly known facts. Give answer
(a)If only conclusion I follows.
(b)If only conclusion II follows.
(c) If either conclusion I or II follows.
(d)If neither conclusion I nor II follows.
(e)If both conclusions I and II follow.

**29. Statements:** All shirts are skirts.
No skirt is top. All tops are kurta.
**Conclusions: I.** All shirts are kurta
**II.** Some kurta are skirts.

**30. Statements:** Some chocolate are chips.
Some chips are jelly.
All jelly are whoppers.
**Conclusions:** **I.** Some jelly are chips.
**II.** All chocolate being whoppers is a possibility

**31. Statements:** Some frooti are Maaza.
No Maaza is slice.
All slice are fanta.
**Conclusions:** **I.** Some frooti are definitely not slice.
**II.** Some fanta are definitely not Maaza.

**32. Statements:** All carbon are oxygen.
All Nitrogen are carbon.
Some oxygen are Sulphur.
**Conclusions** **I.** All Nitrogen being Sulphur is a possibility.
**II.** All Nitrogen are not oxygen.

**33. Statements:** All September are October.
No October is November.
No November is December.
**Conclusions:** **I.** Some September are not Novembers
**II.** No October is December.

**Directions (34-38):** Following questions are based on the five words given below, Study the following words and answer the following questions.
**NOW SAD WAF RAT CAT**

(The new words formed after performing the mentioned operations may not necessarily be a meaningful English word.)

**34.** If the given words are arranged in the order as they appear in a dictionary from left to right, which of the following will be the fourth from the left end?
(a) WAF (b) NOW (c) SAD
(d) CAT (e) RAT

**35.** How many letters are there in the English alphabetical series between the second letter of the word which is second from the right end and the third letter of the word which is second from the left end?
(a) Two (b) Three (c) Four
(d) Five (e) None of these

**36.** If the third alphabet in each of the words is changed to the previous alphabet in the English alphabetical order, how many words thus formed will be without any vowels?
(a) None (b) One (c) Two
(d) Three (e) More than three

**37.** If the position of the first and the third alphabet of each of the words are interchanged, which of the following will form a meaningful word in the new arrangement?
(a) NOW (b) SAD (c) RAT
(d) WAF (e) Both (a) and (c)

**38.** If in each of the given words, each of the consonants is changed to its previous letter and each vowel is changed to its next letter in the English alphabetical series, then how many words thus formed will at least one vowel appear?
(a) None (b) One (c) Two
(d) Three (e) None of these

**39.** If in the number 9737132710, positions of the first and the second digits are interchanged, positions of the third and fourth digits are interchanged and so on till the positions of $9^{th}$ and $10^{th}$ digits are interchanged, then which digit will be 6th from the left end?
(a) 7 (b) 1 (c) 3
(d) 9 (e) None of these

**40.** How many pairs of letters are there in the word" WORSHIP" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

## QUANTITATIVE APTITUDE

**41.** The retail price of a water geyser is Rs. 1265. If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then the cost of the product is:
(a) Rs. 800 (b) Rs. 900 (c) Rs. 700
(d) Rs. 600 (e) None of these

**42.** A pipe can fill a cistern in 6 hrs. Due to a leak in its bottom, it is filled in 7 hrs. When the cistern is full, in how much time will it be emptied by the leak?
(a) 42 hrs (b) 40 hrs (c) 43 hrs
(d) 45 hrs (e) None of these

**43.** Ram travels a certain distance at 3 km/h and reaches 15 minutes late. If he travels at 4 km/h, he reaches 15 minutes earlier. The distance he has to travel is:
(a) 4.5 km (b) 6 km (c) 7.2 km
(d) 12 km (e) None of these

**44.** In a mixture of 45 litres, the ratio of milk and water is 3 : 2. How much water must be added to make the ratio 9 : 11?
(a) 10 litres (b) 15 litres (c) 17 litres
(d) 20 litres (e) None of these

**45.** A person can row with the stream at 8 Km per hour and against the stream at 6 Km an hour. The speed of the current is:
(a) 1 $Km/h$ (b) 2 $Km/h$ (c) 4 $Km/h$
(d) 5 $Km/h$ (e) None of these

**46.** A father's age is three times the sum of the ages of his two children, but 20 years hence his age will be equal to the sum of their ages. Then, the father's age is:
(a) 30 years (b) 40 years (c) 35 years
(d) 45 years (e) None of these

**47.** A sum was put at simple interest at a certain rate for 3 years. Had it been put at 1% higher rate, it would have fetched Rs. 5100 more. The sum is:
(a) Rs. 170000 (b) Rs. 150000 (c) Rs. 125000
(d) Rs. 120000 (e) None of these

**48.** From among 36 teachers in a school, one principal and one vice-principal are to be appointed. In how many ways can this be done?
(a) 1260 (b) 1250 (c) 1240
(d) 1800 (e) None of these

**49.** A card is drawn at random from a well-shuffled pack of 52 cards. What is the probability of getting a two of hearts or a two diamonds?
(a) $\frac{3}{26}$ (b) $\frac{2}{17}$ (c) $\frac{1}{26}$
(d) $\frac{4}{13}$ (e) None of these

**50.** A sum is invested for 3 years at compound interest at 5%, 10% and 20% respectively. In three years, if the sum amounts to Rs. 16,632, then find the sum.
(a) Rs. 11000 (b) Rs. 12000 (c) Rs. 13000
(d) Rs. 14000 (e) None of these

**Directions (51-55):** Table shows the mobile phones sold on different days by different sellers. Read the table carefully and answer the questions.

| Days→ / Mobiles Phones Sellers | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| P | 40 | 45 | 48 | 28 | 50 | 24 | 20 |
| Q | 90 | 92 | 27 | 12 | 16 | 98 | 26 |
| R | 80 | 36 | 30 | 13 | 28 | 62 | 47 |
| S | 60 | 46 | 12 | 64 | 52 | 34 | 76 |
| T | 48 | 18 | 58 | 69 | 70 | 10 | 15 |

**51.** Find the difference of mobile phones sold by P and R together on Monday to the mobile phones sold by S and T on Wednesday ?
(a) 60 (b) 50 (c) 80
(d) 20 (e) None of these

**52.** Find the ratio of mobile phone sold by Q on Tuesday and Saturday together to the mobile phone sold by R on Thursday and Sunday together?
(a) 7 : 19 (b)19 : 5 (c)19 : 6
(d) 2 : 5 (e) None of these

**53.** Mobile phones sold by P and S together on Wednesday is what percent of mobile phone sold by T on Sunday ?
(a) 400% (b) 200% (c) 100%
(d) 50% (e) None of these

**54.** What is the average of mobile phone sold by Q on Wednesday, T on Sunday and S on Monday ?
(a) 24 (b) 36 (c) 30
(d) 28 (e) None of these

**55.** The mobiles sold by P on Thursday are of two types i.e. Windows phone and Android phone in ratio 3 : 4. Find the number of Windows phones sold by P on Thursday?
(a) 14 (b) 24 (c) 16
(d) 12 (e) None of these

**Directions (Q.56-65):** What should come in place of question mark (?) in following simplification problems?

**56.** 45% *of* 600+?% *of* 480 = 390
(a) 20 (b) 25 (c) 30
(d) 40 (e) None of these

**57.** $4\frac{2}{3} + 7\frac{1}{6} - 5\frac{2}{9} = ?$
(a) $6\frac{2}{3}$ (b) $6\frac{2}{9}$ (c) $6\frac{11}{18}$
(d) $6\frac{7}{18}$ (e) None of these

**58.** 65% *of* 240+ ?% *of* 150 = 210
(a) 45 (b) 46 (c) 32
(d) 36 (e) None of these

**59.** $\frac{2}{3}$ *of* $1\frac{2}{5}$ of 75% of 540 = ?
(a) 378 (b) 756 (c) 252
(d) 332 (e) None of these

**60.** 555.05 + 55.50 + 5.55 + 5 + 0.55 = ?
(a) 621.65 (b) 655.75 (c) 634.85
(d) 647.35 (e) None of these

**61.** 1425 + 8560 + 1680 ÷ 200 = ?
(a) 58.325 (b) 9973.4 (c) 56.425
(d) 9939.4 (e) None of these

**62.** ? % of 800 = 293 – 22% of 750
(a) 14 (b) 18 (c) 12
(d) 16 (e) 20

**63.** 25% of 250 + $\sqrt{?}$ = 119
(a) 4225 (b) 3025 (c) 2025
(d) 5625 (e) None of these

**64.** $4\frac{5}{6} - 5\frac{5}{9} = ? - 2\frac{1}{3} + \frac{11}{18}$
(a) $\frac{3}{4}$ (b) $2\frac{1}{18}$ (c) $1\frac{7}{9}$
(d) $1\frac{11}{18}$ (e) None of these

**65.** [30% *of* {(80% *of* 850) ÷ 34}] = ?
(a) 5 (b) 4 (c) 6
(d) 8 (e) 9

**66.** The sides of a triangle are in the ratio of $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$. If the perimeter is 52 cm, then the length of the smallest side is:
(a) 9 cm (b) 10 cm (c) 11 cm
(d) 12 cm (e) None of these

**67.** If A's salary is 25% higher than B's salary, then how much per cent is B's salary lower than A's?
(a) 15% (b) 20% (c) 25%
(d) $33\frac{1}{3}$% (e) None of these

**68.** Ravi sells an article at a gain of $12\frac{1}{2}$%. If he had sold it at Rs. 22.50 more, he would have gained 25% The cost price of the article is:
(a) Rs. 162 (b) Rs. 140 (c) Rs. 196
(d) Rs. 180 (e) None of these

**69.** A certain job was assigned to a group of men to do it in 20 days. But 12 men did not turn up for the job and the remaining men did the job in 32 days. The original number of men in the group was:
(a) 32 (b) 34 (c) 36
(d) 40 (e) None of these

**70.** A vessel contains liquid P and Q in the ratio 5 : 3. If 16 litres of the mixture are removed and the same quantity of liquid Q is added, the ratio become 3 : 5. What quantity does the vessel hold?
(a) 35 litres (b) 45 litres (c) 40 litres
(d) 50 litres (e) None of these

**Directions (Q.71-75):** What should come in place of question mark (?) in following simplification problems?

**71.** 50% *of* 250 + $\sqrt{?}$ = 165
(a) 1700 (b) 1600 (c) 1800
(d) 2000 (e) None of these

**72.** 140% *of* 56 + 56% *of* 140 = ?
(a) 78.4 (b) 158.6 (c) 156.6
(d) 87.4 (e) None of these

**73.** $1\frac{1}{4} + 1\frac{5}{9} \times 1\frac{5}{8} \div 6\frac{1}{2} = ?$
(a) 17 (b) 27 (c) 42
(d) 18 (e) None of these

**74.** 999.09 + 99.90 + 9.99 + 9 + 0.99 =?
(a) 1118.97 (b) 1128.97 (c) 1218.97
(d) 1139.97 (e) None of these

**75.** 20% *of* [{(220% *of* 40) − 10}]% *of* 500 = ?
(a) 58 (b) 68 (c) 98
(d) 78 (e) None of these

**Directions (Q.76-80):** What should come in place of question mark (?) in following number series ?

**76.** 5, 8, 12, 18, 27, ?
(a) 39 (b) 40 (c) 41
(d) 42 (e) 43

**77.** 2, 10, 30, 68, 130, ?
(a) 210 (b) 215 (c) 222
(d) 228 (e) 235

**78.** 142, 133, 115, 88, ?
(a) 50 (b) 53 (c) 55
(d) 51 (e) 52

**79.** 3, 8, 18, 38, 78, ?
(a) 158 (b) 154 (c) 150
(d) 162 (e) 166

**80.** 6, 3, 3, 6, 24, ?
(a) 184 (b) 186 (c) 188
(d) 190 (e) 192

# Mock 15 : Solutions

## REASONING ABILITY

**1. (e);** I. B > R (True) II. V > A (True)

**2. (a);** I. F > I (True) II. J ≥ E (False)

**3. (d);** I. E < M (False) II. E>O (False)

**4. (c);** I. E =G (False) II. G< E (False)

**5. (b);** I. S < Q (False) II. X < S (True)

**Direction (6-10):**

| Floors | Persons |
|---|---|
| 8 | K |
| 7 | J |
| 6 | I |
| 5 | N |
| 4 | H |
| 3 | L |
| 2 | G |
| 1 | M |

**6. (d);** **7. (c);** **8. (a);**

**9. (c);** **10. (e);**

**11. (c);** Sathyarthi's position from left end = 10th
Sathyarthi's position from right end = 17th
Total number of children in the row
= 10 + 17 – 1 = 26

**12. (b);** Raj started walking towards west.

**13. (c);** By using condition (iii) the code of WX6ZF1 will be ^®£@$∞.

**14. (c);** The code of FE1XI6 will be $>^®µ£.

**15. (a);** By using condition (ii) the code of 5L2IA1 will be Δ!<µ&Δ.

**16. (d);** By using condition (i) the code of E2ZA6 will be +<@&+.

**17. (b);** By using condition (i) the code of IZ2W2 will be +@<∞+.

**Direction (18-22):**


**18. (b);** **19. (d);** **20. (b);**

**21. (b);** **22. (d);**

**23. (e);**

| 1 3 2 | 4 6 5 | 7 9 8 | 10 12 11 | 13 14 15 |
|---|---|---|---|---|
| A C B | D F E | G I H | J L K | M N O |

So, the odd one out will be MNO.

**24. (d);** More than three

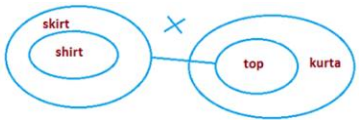
**25. (b);** 8

**26. (a);** 0

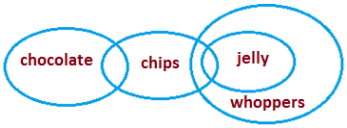
**27. (d);** 4

**28. (b);** Five

**29. (d);**

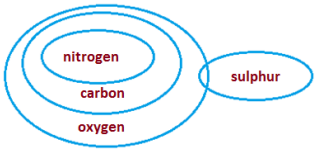



**30. (e);**




**31. (e);**


**32. (a);**




**33. (a);**


**34. (c);** SAD

**35. (a);** TWO

**36. (a);** None

**37. (e);** WON, TAR

**38. (b);** One

**39. (b);** 1

**40. (d);** Three- RS, HI, and PS

## QUANTITATIVE APTITUDE

**41. (a);** Cost price = $\frac{100}{110}\times\frac{100}{115}\times\frac{100}{125}\times 1265$=Rs. 800

**42. (a);** In one hour, $\frac{1}{6}$ of the cistern can be filled

In one hour, only $\frac{1}{7}$ of the cistern can be filled due to leak in its bottom

∴ In one hour $\frac{1}{6}-\frac{1}{7}=\frac{1}{42}$ of the cistern is empty

∴ The whole cistern will be emptied in 42 hrs

**43. (b);** Let D be the required distance

So, $\frac{D}{3}-\frac{D}{4}=\frac{15+15}{60}$

Or, D = 6 km

**44. (b);** Let, M = 3K, W = 2K
∴ 3K + 2K = 45 ⇒ K = 9
⇒ Milk = 27 litres and water = 18 litres
Now suppose x litres of water is added to the mixture such that
$\frac{27}{18+x}=\frac{9}{11}\Rightarrow 162+9x=297$
$\Rightarrow 9x=135\Rightarrow x=15$

**45. (a);** Let the speed of the current be x Km/h and speed of the person in still water be y km/h.
∴ y + x = 8
y – x = 6
⇒ y = 7, x = 1
∴ Speed of the current = 1 Km/h.

**46. (a);** Let the father's age be x years and age of his children be a and b years

$\therefore (a+b) = \frac{x}{3}$

And $(a+b) + 20 + 20 = x + 20$

$\Rightarrow \frac{x}{3} + 20 = x$

$\Rightarrow x = 30$ years

**47. (a);** Simple interest for 1 year $= \frac{5100}{3} = Rs\ 1700$

1% of sum = 1700

$\therefore$ sum $= \frac{1700\times100}{1} = Rs\ 170000$

**48. (a);** One principal can be appointed in 36 days

One vice-principal appointed in remaining 35 ways

$\therefore$ Total no. of ways = 36 × 35 = 1260.

**49. (b);** $\therefore$ Required probability

$= \frac{^{13}C_2 + {}^{13}C_2}{^{52}C_2}$

$= \frac{78+78}{1326} = \frac{156}{1326} = \frac{2}{17}$

**Alternately,**

Required probability

$= \frac{13}{52}\times\frac{12}{51} + \frac{13}{52}\times\frac{12}{51}$

$= 2\times\frac{13}{52}\times\frac{12}{51} = \frac{2}{17}$

**50. (b);** Let, P be the sum.

$\therefore 16632 = P\left(1+\frac{5}{100}\right)\left(1+\frac{10}{100}\right)\left(1+\frac{20}{100}\right)$

Or, $16632 = P\times\frac{21}{20}\times\frac{11}{10}\times\frac{6}{5}$

Or, P = Rs.12,000

**51. (b);** Required difference = (40 + 80) – (12 + 58)

= 120 – 70 = 50

**52. (c);** $Required\ ratio = \frac{92+98}{13+47} = \frac{190}{60} = 19:6.$

**53. (a);** $Required\ percentage = \frac{48+12}{15}\times100 = \frac{60}{15}\times100 = 400\%$

**54. (e);** $Average = \frac{27+15+60}{3} = \frac{102}{3} = 34.$

**55. (d);** Windows phones sold by P on Thursday

$= \frac{3}{7}\times28 = 12$

**56. (b);** $\frac{45}{100}\ of\ 600 + \frac{?}{100} of\ 480 = 390$

$\Rightarrow 270 + 4.8\times? = 390$

$\therefore ? = \frac{390-270}{4.8} = 25$

**57. (c);** $? = \frac{14}{3} + \frac{43}{6} - \frac{47}{9} = \frac{84+129-94}{18} = \frac{119}{18} = 6\frac{11}{18}$

**58. (d);** $\frac{65}{100}\ of\ 240 + \frac{?}{100}\ of\ 150 = 210$

$\Rightarrow 156 + 1.5\times? = 210$

$\therefore ? = \frac{210-156}{1.5} = 36$

**59. (a);** $? = \frac{2}{3}\ of\ \frac{7}{5}\ of\ \frac{75}{100}\ of\ 540 = 7\times54 = 378$

**60. (a);** $? = 555.05 + 55.50 + 5.55 + 5 + 0.55$

$= 621.65$

**61. (e);** $? = 1425 + 8560 + 1680 \div 200$

$= 1425 + 8560 + \frac{1680}{200}$

$= 9985 + 8.4 = 9993.4$

**62. (d);** $\frac{800\times?}{100} = 293 - \frac{750\times22}{100}$

$\Rightarrow 8\times? = 293 - 165 = 128$

$\Rightarrow ? = \frac{128}{8} = 16$

**63. (b);** $250\times\frac{25.6}{100} + \sqrt{?} = 119$

$\Rightarrow 64 + \sqrt{?} = 119$

$\Rightarrow \sqrt{?} = 119 - 64 = 55$

$\Rightarrow ? = 55\times55 = 3025$

**64. (e);** $4 + \frac{5}{6} - 5 - \frac{5}{9} = ? - 2 - \frac{1}{3} + \frac{11}{18}$

$\Rightarrow ? = 4 - 5 + 2 + \left(\frac{5}{6} - \frac{5}{9} + \frac{1}{3} - \frac{11}{18}\right)$

$\Rightarrow 1 + \left(\frac{15-10+6-11}{18}\right) = 1 + 0 = 1$

**65. (c);** $? = \left[\frac{30}{100}\times\left\{\left(\frac{80}{100}\times850\right)\div34\right\}\right]$

$= \left[\frac{30}{100}\times\{680\div34\}\right]$

$= \left[\frac{30}{100}\times20\right] = 6$

**66. (d);** Sides of a triangle are in ratio $\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$, i.e., 6 : 4 : 3.

Let the sides be 6K, 4K and 3K, respectively.

$\therefore$ 13K = 52 $\Rightarrow$ K = 4

$\therefore$ Sides of the triangle are 24 cm, 16 cm and 12 cm, respectively.

**67. (b);** A = B + 25% of B

$\Rightarrow A = B + \frac{B}{4} = \frac{5B}{4}$

$\Rightarrow B = \frac{4}{5}A = A - \frac{1}{5}A = A - 20\%\ of\ A$

**68. (d);** $12\frac{1}{2}\% = Rs\ 22.50$

$\Rightarrow$ C.P. = Rs 180.

**69. (a);** Suppose x = original number of men in the group

$\therefore$ (x- 12) men did the job in 32 days

$\therefore$ 20x = 32(x – 12)

i.e., x = 32

**70. (c);** Let, the quantity of liquid P and Q be 5x and 3x litres respectively.

Quantity of P removed $= \frac{5}{5+3}\times16 = 10$ litres

Quantity of Q removed $= \frac{3}{5+3}\times16 = 6$ litres

Now, $\frac{5x-10}{3x-6+16} = \frac{3}{5}$

$\Rightarrow 25x - 50 = 9x + 30$

$\Rightarrow 16x = 80 \Rightarrow x = 5$

$\therefore$ Quantity that vessel hold = 8 ×5 = 40 litres

**71. (b);** $\frac{50}{100} of\ 250 + \sqrt{?} = 165$

$\Rightarrow 125 + \sqrt{?} = 165$

$\Rightarrow \sqrt{?} = 40$

$\therefore ? = (40)^2 = 1600$

**72. (e);** $\frac{140}{100} of\ 56 + \frac{56}{100} of\ 140$

$= 78.4 + 78.4 = 156.8$

**73. (e);** $? = 1\frac{1}{4} + 1\frac{5}{9} \times 1\frac{5}{8} \div 6\frac{1}{2} = \frac{5}{4} + \frac{14}{9} \times \frac{13}{8} \div \frac{13}{2}$

$= \frac{5}{4} + \frac{14}{9} \times \frac{13}{8} \times \frac{2}{13}$

$= \frac{5}{4} + \frac{7}{18} = \frac{45+14}{36} = \frac{59}{36} = 1\frac{23}{36}$

**74. (a);** $999.09 + 99.90 + 9.99 + 9 + 0.99$

$= 1118.97$

**75. (d);** $\frac{20}{100} \times \left[\left\{\left(\frac{220}{100} \times 40\right) - 10\right\}\right]\% \ of\ 500 = ?$

$\frac{1}{5} \times [\{88 - 10\}]\% \ of\ 500 = ?$

$\frac{1}{5} \times \frac{78}{100} \times 500 = ?$

$? = 78$

**76. (b);**

5 8 12 18 27 [40]

+3 +4 +6 +9 +13

+1 +2 +3 +4

**77. (c);**

2 10 30 68 130 [222]

+8 +20 +38 +62 +92

+12 +18 +24 +30

**78. (e);**

142 133 115 88 [52]

−9 −18 −27 −36

**79. (a);**

3 8 18 38 78 [158]

+5 +10 +20 +40 +80

**80. (e);**

6 3 3 6 24 [192]

×0.5 ×1 ×2 ×4 ×8

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## REASONING ABILITY

**Directions (1-5):** Study the following information carefully to answer these questions.
Eight friends A, B, C, D E, F G and H are sitting around a circle facing the centre. A sits third to the left of B, while second to the right of F. D does not sit next to A or B. C and G always sit next to each other. H never sits next to D and C does not sit next to B.

**1.** Which of the following pairs sits between H and E?
(a) F, D (b) H, B (c) C, G
(d) E, G (e) None of these

**2.** Starting from A's position, if all the eight were arranged in alphabetical order in clockwise direction the seating position of how many members (excluding A) not change?
(a) None (b) one (c) Two
(d) Three (e) None of these

**3.** Which of the following pairs has only one person sitting between them, if the counting is done in clockwise direction?
(a) A, B (b) C, D (c) F, E
(d) G, H (e) None of these

**4.** Who sits to the immediate right of E?
(a) A (b) D (c) F
(d) H (e) None of these

**5.** What is the position of B with respect to C?
(a) Second to the left (b) Third to the right
(c) Third to the left (d) Can't be determined
(e) None of these

**Directions (6–10):** Study the following information carefully and answer the questions given below.
Give answer-
(a) If only conclusion I is true
(b) If only conclusion II is true
(c) If either conclusion I or conclusion II is true
(d) If neither conclusion I nor conclusion II is true
(e) If both conclusions I and II are true

**6.** **Statements**
$H = W \leq R > F$
**Conclusions**
I. $R = H$
II. $R > H$

**7.** **Statements**
$M < T > K = D$
**Conclusions**
I. $D < T$ II. $K < M$

**8.** **Statements**
$R \leq N \geq F > B$
**Conclusions**
I. $F = R$ II. $B < N$

**9.** **Statements**
$H > W < M \geq K$
**Conclusions**
I. $K < W$ II. $H > M$

**10.** **Statements**
$R \geq T = M > D$
**Conclusions**
I. $D < T$ II. $R \geq M$

**Directions (11-15):** In each of the following below is given a group of letters followed by four combinations of digits/symbols. You have to find out which of the combinations correctly represents the group of letters based on the following coding system and mark the number of that combination as the answer. If none of the four combinations correctly represents the group of letters, mark (e), i.e. 'None of these', as the answer-

| Letter | T | G | E | L | P | I | C | B | R | A | Q | M | U | H | J |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Digit/Symbol | © | # | % | 9 | 7 | 3 | * | $ | 1 | 8 | 2 | 6 | 4 | @ | 5 |

**Conditions:**
(i) If both the first and the last letter of the group are vowels, their codes are to be interchanged.
(ii) If the first letter is a consonant and the last letter is a vowel, both are to be coded as the code for the consonant.

**11.** ERHBMT
(a) %1@$6© (b) %1$@6© (c) ©1$@6©
(d) @%1$6© (e) None of these

**12.** PQGALE
(a) 72#89% (b) 72#897 (c) 72%#97
(d) 27#892 (e) None of these

**13.** EMTAHA
(a) 8©68@8 (b) 36©#83 (c) 86©8@3
(d) 86©8@% (e) None of these

**14.** BQRLHA
(a) 8219@$ (b) $219@8 (c) $219@$
(d) 82198@ (e) None of these

**15.** RGMALB
(a) 1#6891 (b) $#6891 (c) 16#89$
(d) $#689$ (e) None of these

**Directions (16-20):** In each question below are two/three statements followed by two conclusions I and II. You have to take the two/three given statements to be true even if they seem to be at given conclusions logically follows from the given statements disregarding commonly known facts.
Give answer-
(a) If only Conclusion I follows
(b) If only Conclusion II follows
(c) If either Conclusion I or II follows
(d) If neither Conclusion I nor II follows
(e)If both Conclusions I and II follow

**16.** **Statements:**
No tea is coffee.
No sweet is tea.
**Conclusions:**
I. No coffee is sweet.
II. All sweets are coffee.

**17.** **Statements:**
All medals are awards
All rewards are medals
**Conclusions:**
I. All rewards are awards.
II. All awards are medals.

**18.** **Statements:**
Some leaves are plants.
All bushes are plants.
**Conclusions:**
I. At least some leaves are bushes.
II. Some leaves are definitely not bushes.

**19.** **Statements:**
All bottles are mugs.
No cup is a mug.
**Conclusions:**
I. No bottle is a cup.
II. At least some mugs are bottles.

**20.** **Statements:** All windows are doors.
All entrances are windows.
No gate is a door.
**Conclusions:**
I. At least some windows are gates
II. No gate is an entrance

**Directions (21-25):** Study the following information carefully and answer the questions given below:
A, B, C, D, E, F and G are sitting in a straight line facing north, but not necessarily in the same order. There is only one person between F and C. E sits between A and D. There are only two persons between E and G. F sits on the immediate left of A, who sits in the middle of the row.

**21.** How many persons are there between E and F?
(a) One (b) Two
(c) Three (d) Can't be determined
(e) None of these

**22.** Who among the following sit at the extreme ends of the row?
(a) D, F (b) G, C
(c) B, C (d) Can't be determined
(e) None of these

**23.** Who among the following sits on the immediate right of D?
(a) G (b) E (c) F
(d) B (e) None of these

**24.** Who among the following sits third to the right of A?
(a) C (b) G (c) B
(d) E (e) None of these

**25.** Which of the following statements is true with regard to B?
(a) B is second to the right of A.
(b) B is fourth to the left of G.
(c) B sits at the extreme right end of the row.
(d) B sits at the extreme left end of the row.
(e) None of these

**26.** The positions of how many digits in the number 59164823 will remain unchanged after the digits are rearranged in descending order within the number?
(a) None (b) One (c) Two
(d) Three (e) More than three

**27.** What should come next in the following letter series based on English alphabet?
CEA IKG OQM ?
(a) STW (b) WUS (c) SWU
(d) UWS (e) None of these

**28.** In a row of 40 children facing North, E is eighth to the right of V. If V is 18th from the right end of the row, how far is E from the left end of the row?
(a) 32nd (b) 10th (c) 31st
(d) 29th (e) None of these

**Direction (29-33):** Following questions are based on the five three digit numbers given below
**853 581 747 474 398**

**29.** If all the digits in each of the numbers are arranged in descending order within the number, which of the following will form the lowest in the new arrangement of numbers?
(a) 853 (b) 581 (c) 747
(d) 398 (e) 474

**30.** If all the numbers are arranged in ascending order from left to right, which of the following will be the sum of all the three digits of the number which is exactly in the middle of the new arrangement?
(a) 17 (b) 15 (c) 14
(d) 13 (e) 19

**31.** What will be the resultant of third digit of the lowest number is multiplied with the second digit of the highest number?
(a) 27 (b) 40 (c) 20
(d) 45 (e) 19

**32.** If the positions of the second and the third digits of each of the numbers are interchanged, how many even numbers will be formed?
(a) None (b) One (c) Two
(d) Three (e) Four

**33.** If one is added to the first digit of each of the numbers, how many numbers thus formed will be divisible by three?
(a) None (b) One (c) Two
(d) Three (e) Four

**34.** In a certain code language JANUARY is written as ZSBTOBK. How is OCTOBER written in that code language?
(a) SFCPUDP (b) SFCNUDP (c) SCFNDUP
(d) FSCNUDP (e) None of these

**Direction (35-37):** Study the following information carefully to answer the given questions:
B is sister of A. A is father of G. H is the only son of F. F is only son-in-law of A. G is the mother of H.

**35.** If C is the husband of B, then how is A related to C?
(a) Father (b) Brother-in-law
(c) Mother (d) Brother
(e) None of these

**36.** How is G related to B?
(a) Brother (b) Niece (c) Sister
(d) Nephew (e) None of these

**37.** How is A related to H?
(a) Uncle
(b) Father
(c) Paternal grandfather
(d) Maternal grandfather
(e) None of these

**Directions (38-39):** Study the following information carefully to answer the questions.
A vehicle starts from point P and run 10 km towards North. It takes a right turn and runs 15 km. Now it runs 6 km after taking a left turn. Finally, it takes a left turn, runs 15 km and stops at point Q.

**38.** How far is point Q with respect to point P?
(a) 16 km (b) 25 km (c) 4 km
(d) 10 km (e) None of these

**39.** Towards which direction was the vehicle moving before it stopped at point Q?
(a) North (b) East (c) South
(d) West (e) North – West

**40.** In a row of 34 students, W is fifth after X from the front and X is 20th from the back. What is the position of W from the front?
(a) 20 (b) 25 (c) 30
(d) 22 (e) None of these

## QUANTITATIVE APTITUDE

**Directions (41-45):** What will come in place of question mark (?) in the following questions?

**41.** 12 , 13 , 17 , 26, 42 , ?
(a) 67 (b)58 (c) 59
(d) 75 (e) none of these

**42.** 1, 2, 8, 48, 384 ?
(a) 3440 (b) 3840 (c) 3820
(d) 3550 (e) none of these

**43.** 157, 150, 136 ,115, 87 , ?
(a) 50 (b) 51 (c) 52
(d) 54 (e) none of these

**44.** 41472, 5184 , 576, 72, 8, ?
(a) 0 (b) 9 (c) 1
(d) 8 (e) none of these

**45.** 8 ,4, 4 ,6 ,12, ?
(a) 30 (b) 34 (c) 38
(d) 42 (e) none of these

**Directions (46-60):** What will come in place of question mark (?) in the following questions?

**46.** $\frac{3}{9} \times 2286 + \frac{2}{11} \times 1397 = ?$
(a) 916 (b) 1016 (c) 1216
(d) 1026 (e) 1256

**47.** $7802 + 132 - 8963 + 1326 = ? \times 33$
(a) 6 (b) 12 (c) 21
(d) 9 (e) 14

**48.** 21.9% of 650 = ? + 23.12
(a) 121.23 (b) 109.23 (c) 119.32
(d) 129.23 (e) 119.23

**49.** $6666 \div 66 \div 0.25 = ?$
(a) 101 (b) 404 (c) 304
(d) 40.4 (e) None of these

**50.** $\sqrt{?} + 18 = \sqrt{2704}$
(a) 1256 (b) 1156 (c) 1296
(d) 1024 (e) 1466

**51.** $2\frac{1}{7} + 4\frac{3}{5} - 3\frac{1}{7} + 5\frac{1}{10} = ?$
(a) $9\frac{7}{10}$ (b) $7\frac{7}{10}$ (c) $8\frac{7}{10}$
(d) $8\frac{4}{70}$ (e) None of these

**52.** $164 \times 43 - 6070 = ?$
(a) 682 (b) 792 (c) 882
(d) 1082 (e) 982

**53.** 14.5% of 740 – ?% of 320 = 87.3
(a) 6.75 (b) 6.25 (c) 12.5
(d) 14.75 (e) 8.25

**54.** $(27)^3 \times 3^4 \div (81)^2 = 3^?$
(a) 2 (b) 5 (c) 4
(d) 3 (e) None of these

**55.** $\frac{3}{7}of\ 329 + \frac{4}{11}of\ 2530 = \sqrt{?} + 894$
(a) 28899 (b) 29899 (c) 27789
(d) 27889 (e) None of these

**56.** 4376 + 3209 – 1784 + 97 = 3125 + ?
(a) 2713 (b) 2743 (c) 2773
(d) 2793 (e) 2737

**57.** $\sqrt{?} + 14 = \sqrt{2601}$
(a) 1521 (b) 1369 (c) 1225
(d) 961 (e) 1296

**58.** 85% of 420 + ?% of 1080 = 735
(a) 25 (b) 30 (c) 35
(d) 40 (e) 45

**59.** $\frac{7}{3}of\frac{5}{4}of\frac{1}{9}of\ 3024 = ?$
(a) 920 (b) 940 (c) 960
(d) 980 (e) 840

**60.** 30% of 1225 – 64% of 555 = ?
(a) 10.7 (b) 12.3 (c) 13.4
(d) 17.5 (e) None of these

**Directions (61-65):** Study the following table and answer the questions given below. Number of Tourist who visit different cities by different modes of transport.

| Cities | Vehicle | | | | |
|---|---|---|---|---|---|
| | Car | Train | Bus | Bike | By Air |
| Delhi | 192 | 188 | 172 | 191 | 174 |
| Mumbai | 180 | 166 | 178 | 187 | 182 |
| Chandigarh | 156 | 194 | 163 | 181 | 148 |
| Dehradun | 132 | 185 | 142 | 170 | 148 |
| Masuri | 149 | 159 | 155 | 149 | 183 |
| Jaipur | 168 | 163 | 158 | 142 | 174 |

**61.** What are the average number of tourists who comes by Train?
(a) 190.5 (b) 188·5 (c) 175.83
(d) 137·5 (e) None of these

**62.** What is the difference between the total number of tourists who went to Mumbai and Masuri by all vehicle?
(a) 78 (b) 98 (c) 88
(d) 83 (e) None of these

**63.** What is the percent of tourist who went to Dehradun by train to the tourist who went to Chandigarh by Air?
(a) 125 (b) 145 (c) 137
(d)160 (e) None of these

**64.** What is the difference between the average number of tourist who went by Air to the average number of tourist who went by Bus?
(a) 7.58 (b) 9.97 (c) 6.83
(d) 2.30 (e) None of these

**65.** What is the respective ratio of the number of tourist went to Delhi by Car and who went to Mumbai by air?
(a) 35 : 83 (b) 45 : 71 (c) 96 : 91
(d) 32 : 7 (e) None of these

**66.** If the wheel of a bicycle makes 560 revolutions in travelling 1.1 km, what is its radius? (use π=22/7)
(a) 31.25 cm (b) 37.75 cm (c) 35.15 cm
(d) 11.25 cm (e) none of these

**67.** Elena's age after 15 years will be 5 times her age 5 years back, What is the present age of Elena?
(a) 10 (b) 37 (c) 35
(d) 11 (e) none of these

**68.** A man purchased a cow for Rs. 3000 and sold it the same day for Rs. 3600, allowing the buyer a credit of 2 years. If the rate of interest be 10% per annum, then the man has a gain of:
(a) 5% (b) 0% (c) 20%
(d) 10% (e) none of these

**69.** A man takes 3 hours 45 minutes to row a boat 15 km downstream of a river and 2 hours 30 minutes to cover a distance of 5 km upstream. Find the speed of the current.
(a) 1kmph (b) 3 kmph (c) 5 kmph
(d) 2 kmph (e) none of these

**70.** A cistern 6 m long and 4 m wide contains water up to a height of 1 m 25 cm. Find the total area of the wet surface.
(a) 42 m sqaure (b) 49 m sqaure
(c) 52 m sqaure (d) 64 m square
(e) none of these

**71.** In terms of percentage profit, which among following the best transaction.
(a) C.P. 36, Profit 17 (b) C.P. 50, Profit 24
(c) C.P. 40, Profit 19 (d) C.P. 60, Profit 29
(e) C.P. 30, Profit 11

**72.** The milk and water in two vessels A and B are in the ratio 4:3 and 2:3 respectively. In what ratio the liquids in both the vessels be mixed to obtain a new mixture in vessel C consisting half milk and half water?
(a) 8 : 3 (b) 7 : 5 (c) 4 : 3
(d) 2 : 3 (e) none of these

**73.** The average price of 10 books is Rs.12 while the average price of 8 of these books is Rs.11.75. Of the remaining two books, if the price of one book is 60% more than the price of the other, what is the price of each of these two books?
(a) Rs. 5, Rs.7.50 (b) Rs. 8, Rs. 12
(c) Rs. 10, Rs. 16 (d) Rs. 12, Rs. 14
(e) None of these

**74.** A fort has provisions for 60 days. If after 15 days 500 men strengthen them and the food lasts 40 days longer, how many men are there in the fort?
(a) 3500 (b) 4000 (c) 6000
(d) 8000 (e) None of these

**75.** If a commission of 10% is given by a truck dealer to a person on mark price of Truck then dealer gains 20%. If the commission is increased to 15% the percentage gain of dealer is ?
(a) 40/3 (b) 10 (c) 20
(d) 15 (e) None of these

**76.** If a cartoon containing a dozen of mirrors is dropped, which of the following cannot be ratio of broken mirrors to unbroken mirrors.
(a) 7:5 (b) 3:1 (c) 3:2
(d) 2:1 (e) can't be determine

**77.** A bag contains Rs 216 in the form of 1 Rs ,50 paisa &25 paisa coins in the ratio of 2:3:4.the numbers of 50 paisa coins is?
(a) 140 (b) 175 (c) 184
(d) 160 (e) 144

**78.** A is twice as fast as B & B is trice as fast as C. The journey covered by C in 42 min. Will be covered by B in ?
(a) 14 min (b) 4 min (c) 5 min
(d) 8 min (e) 6 min

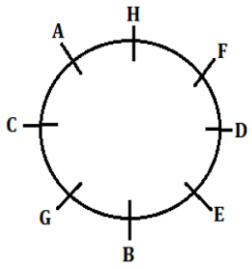
**79.** The CP of two dozen mangoes is Rs 32 , after selling 18 mangoes at 12 Rs per dozen ,the shopkeeper reduced the rate as Rs 4 per dozen. Then find the loss percentage ?
(a) 15 (b) 20 (c) 25
(d) 37.5 (e) None of these

**80.** How many kilograms of sugar costing Rs. 9 per kg must be mixed with 27kg of sugar costing Rs.7 per kg so that there may be gain of 10% by selling the mixture at Rs.9.24 per kg?
(a) 60 kg (b) 63 kg (c) 50 kg
(d) 77 kg (e) none of these

# Mock 16 : Solutions

## REASONING ABILITY

**Directions (1–5):**




1. **(a);**
2. **(d);**
3. **(c);**
4. **(b);**
5. **(e);**

**Directions (6–10):**

6. **(c);** **I.** R ≥ W = H(False)
**II.** R ≥ W = H(False)

7. **(a);** **I.** D = K < T(True)
**II.** K < T > M(False)

8. **(b);** **I.** F ≤ N ≥ R(False)
**II.** B < F ≤ N(True)

9. **(d);** **I.** K ≤ M > W(False)
**II.** H > Q < M(False)

10. **(e);** **I.** D < M = T(True)
**II.** R ≥ T = M(True)

**Direction (11-15):**

11. **(a);** %1@$6©

12. **(b);** 72#897

13. **(d);** 86©8@%

14. **(c);** $219@$

15. **(e);** 1#689$

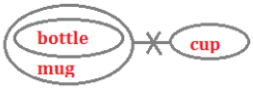
**Directions (16-20):**

16. (d);

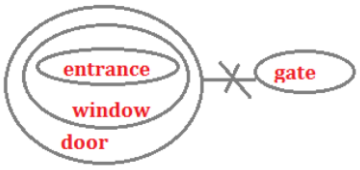

17. (a);


18. (c);


19. (e);




20. (b);




**Directions (21-25):**


21. (a);

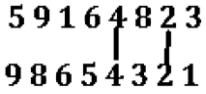
22. (c);

23. (d);

24. (c);

25. (c);

26. (c);




27. (d); UWS

28. (c); V is 18th from the left and E is 8th to the right of V so E is 30+1=31st from the left.

**Direction (29-33):**

29. (e); 474

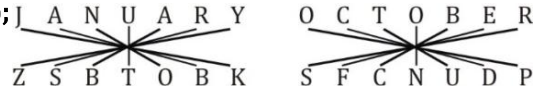
30. (c); (5+8+1) = 14

31. (b); 8*5=40

32. (c); Two

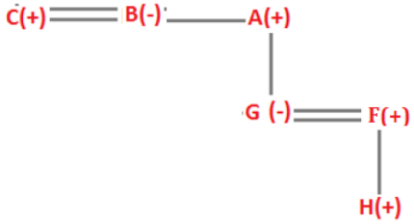
33. (c); Two

34. (b);

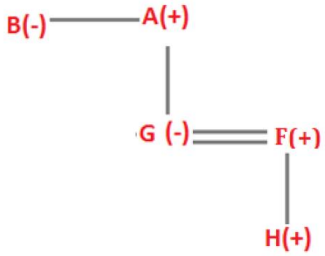



**Direction (35-37):**

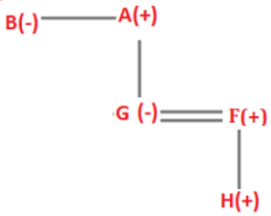
35. (b);



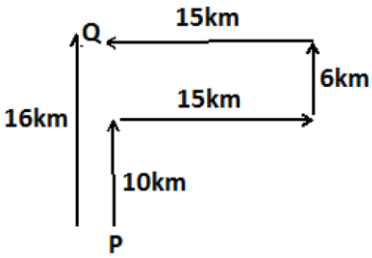

36. (b);




37. (d);




**Directions (38-39):**




38. (a);

39. (d);

40. (a); X is 20th from the back.
The position of w from the back is (20-5) = 15th
Hence the position of W from the front is (34-15+1) = 20th

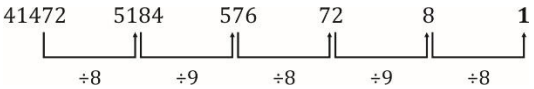
# QUANTITATIVE APTITUDE

**41. (a);** The pattern is $+1^2,+2^2+3^2$.....42 + 25 = 67

**42. (b);** The pattern is ×2,×4,×6,×8 ... ... ...384 × 10 = 3840

**43. (c);** The pattern is −7, −14, −21, −28 ... ... 87 − 35 = 52

**44. (c);**




**45. (a);** The pattern is ×0.5, ×1, ×1.5, ×2 ... ... 12×2.5 = 30

**46. (b);** 762 + 254 = 1016

**47. (d);** $9260 - 8963 = ? \times 33 \Rightarrow ? = \frac{297}{33} = 9$

**48. (e);** $142.35 = ? + 23.12 \Rightarrow ? = 119.23$

**49. (b);** $6666 \times \frac{1}{66} \times \frac{1}{0.25} = ? \quad ? = 404$

**50. (b);** $\sqrt{?} = 52 - 18$
$? = 1156$

**51. (c);** $(2 + 4 + 5 - 3) + \left(\frac{1}{7} + \frac{3}{5} + \frac{1}{10} - \frac{1}{7}\right)$
$= 8 + \frac{10+42+7-10}{70}$
$= 8 + \frac{49}{70} = 8\frac{49}{70} = 8\frac{7}{10}$

**52. (e);** 7052 − 6070 = ?
? = 982

**53. (b);** $107.3 - 87.3 = \frac{?}{100} \times 320$
$? = \frac{20 \times 100}{320} = 6.25$

**54. (b);** $\frac{(3^3)^3 \times 3^4}{(3^4)^2} = 3^?$
$? = 9 + 4 - 8 = 5$

**55. (d);** $141 + 920 = \sqrt{?} + 894$
$\sqrt{?} = 167 \Rightarrow ? = 27889$

**56. (c);** ?= 7682 − 4909 = 2773

**57. (b);** $\sqrt{?} = \sqrt{2601} - 14 = 51 - 14 = 37$
? = 1369

**58. (c);** $\frac{85}{100} \times 420 + \frac{?}{100} \times 1080 = 735$
$\Rightarrow ? = 35$

**59. (d);** 980

**60. (b);** ? = 367.5 − 355.2 = 12.3

**61. (c);** Average number of tourists which go by train
$= \frac{188+166+194+185+159+163}{6} = 175.83$

**62. (b);** Total tourist of Mumbai = 893
Total tourist of Masuri = 795
Difference = 98

**63. (a);** Required percentage $= \frac{185}{148} \times 100 = 125\%$

**64. (c);** Average of tourists who go by air = 168.16
Average of tourists who go by bus = 161.33
Required difference = 6.83

**65. (c);** Required ratio = 192 : 182 = 96 : 91

**66. (a);** Perimeter $= \frac{1.1 \times 1000}{560} m$
$2 \times \frac{22}{7} \times r = \frac{1.1 \times 100}{56}$
$r = \frac{110 \times 7}{56 \times 22 \times 2} = \frac{5}{16} m = 31.25$ cm

**67. (a);** Let Elena's age = x
x + 15 = 5 (x − 5)
x = 10 years

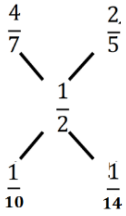
**68. (b);** Man's interest for 2 years $= \frac{3000 \times 2 \times 10}{100} = 600$
∴ After two years, the man will pay = 3000 + 600 = 3600 Rs.
So then is 0% gain

**69. (a);** Let downstream speed = x
Upstream speed = y
$\frac{15}{x} = 3\frac{45}{60} \Rightarrow \frac{15}{x} = \frac{15}{4} \Rightarrow x = 4$
$\frac{5}{y} = 2\frac{30}{60} \Rightarrow \frac{5}{y} = \frac{5}{2} \Rightarrow y = 2$
∴ Speed of current = 1 kmph

**70. (b);** Total Surface Area of wet surface
= 2 (l + b) × h + lb
= 2 (6 + 4) 1.25 + 6 × 4
= 20 × 1.25 + 24
= 25 + 24 = 49 m square

**71. (d);** Clearly from the options
Ans- option (d)

**72. (b);**




∴ Required Ratio $= \frac{14}{10} = 7 : 5$

**73. (c);** Sum of price of the remaining two Books = 12 × 10 − 11.75 × 8 = 26
∴ Let cost of First book be x
$\therefore \ x + \frac{160x}{100} = 26$
$\frac{260x}{100} = 26$
x = 10
∴ Price of second book = 10 + 6 = 16

**74. (b);** Let No. of soldiers = x
$60 \times x = 15x + 40\,(x + 500)$
$60x = 15x + 40x + 20000$
$5x = 20000$
$x = 4000$

**75. (a);** Let S.P. = 100
∴ After commission, price = 90
$\therefore CP = \frac{100}{120} \times 90 = 75$
Now, commission = 15%
$\therefore$ gain % $= \frac{85-75}{75} \times 100$
$= \frac{4}{3} \times 10 \Rightarrow \frac{40}{3}\%$

**76. (c);** Mirrors are multiple of 12
So expect 3 : 2 all the other ratios can be divided by 12

**77. (e);** $2x + \frac{3x}{2} + \frac{4x}{4} = 216$
$\frac{8x+6x+4x}{4} = 216$
$\frac{18x}{4} = 216 \Rightarrow x = 48$
∴ No of 50 paise coin = $48 \times 3 = 144$

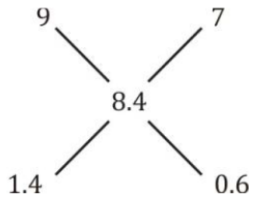
**78. (a);**

| $A$ | $B$ | $C$ |
|---|---|---|
| $6x$ | $3x$ | $x$ |

Ratio of their speeds = 6 : 3 : 1
Ratio of their time $= \frac{1}{6} : \frac{1}{3} : \frac{1}{1} = 1 : 2 : 6$
$\therefore$ Time taken by B $= \frac{42}{6} \times 2 = 14$ min

**79. (d);** Total CP = 32
Total SP = 12 + 6 + 2 = 20
$\therefore$ Loss percentage $= \frac{12}{32} \times 100 = 37.5\%$

**80. (b);** Mean price $= \frac{10}{110} \times 9.24$
$= 10 \times 0.84 = 8.4$




Ratio $= \frac{1.4}{0.6} = \frac{7}{3}$
$\therefore$ Required quantity $= \frac{27}{3} \times 7$
$= 63$ kg

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# Mock 17

# IBPS RRB Clerk Prelims

## REASONING ABILITY

**Directions (1-5):** Study the following information carefully to answer the given questions.

Seven persons J, K, L, M, N, O and P were born in different months of same year starting from January to July. Each person stays on different floors of a same building. The lowermost floor is numbered 1 and topmost is numbered 7.

P stays on fourth floor and born in April. Two person lives between P and the person who was born in March. O who was born in February lives immediately above J. Neither M nor K was born in March and May and none of them lives on third floor. L was not born in May. Four persons live between O and the person who was born in March. M lives above K. The person born in May lives below the person born in July who does not live on topmost floor. The person living on second floor was born in January but does not live immediately above or below J.

**1.** Who among the following was born in June?
(a) J (b) O (c) L
(d) N (e) None of these

**2.** How many persons live between J and N?
(a) One (b) Two (c) Three
(d) Four (e) None

**3.** N is younger to how many persons?
(a) One (b) Two (c) Three
(d) Four (e) Five

**4.** Who among the following person live on the bottom most floor?
(a) M
(b) The one who was born in July
(c) L
(d) The one who was born in May
(e) None of these

**5.** Which of the following pairs lives above P?
(a) M, N (b) O, L (c) N, K
(d) O, J (e) M, K

**Directions (6-8):** Study the following information and answer the given questions.

In a family of eight members there are three married couples. O is the mother of K. T is the brother of O. L is the father of T. M has three children and one of them is P. S is sister-in-law of O. N is brother-in-law of P, who is unmarried. P is aunt of K.

**6.** How is K related to N?
(a) Niece (b) Nephew (c) Son
(d) Daughter (e) Cannot be determined

**7.** How is P related to L?
(a) Daughter
(b) Mother
(c) Sister
(d) Daughter-in-law
(e) None of these

**8.** How many male members are there in the family?
(a) Two (b) Three (c) Four
(d) Five (e) Either (b) or (c)

**9.** How many pairs of letters are there in the word "**SEASON**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**10.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "**CONVERSATION**" then which of the following will be fifth to the right of tenth from the right end?
(a) N (b) O (c) R
(d) S (e) None of these

**Directions (11-12):** Study the following information carefully and answer the questions given below:
Mohit walks 5 km towards the North, takes a right turn and walks 5 km. He now takes a left turn and walks 5 km. He finally takes another left turn and walks 10 km.

**11.** Towards which of the following directions Mohit is walking now?
(a) East (b) South (c) North
(d) West (e) None of these

**12.** If he started waking in West direction instead of North. Towards which direction will he be walking in end?
(a) East (b) South (c) North
(d) West (e) None of these

**Directions (13-15):** Study the following information carefully and answer the questions given below:

Six friends viz. S, T, U, V, W and X are sitting around a circular table. Some of them are facing center and some are facing opposite to the center. One person sits between U and W. V sits second to the left of W, who faces outside. Only one person sits between T and X, who does not sit to the immediate right of U. S sits to the immediate right of V, who faces outside. U and S face same direction. S faces opposite direction of W. T and X face opposite direction. X faces same direction as W

**13.** Who among the following sits opposite to X?
(a) V (b) S (c) T
(d) W (e) None of these

**14.** How many persons face outside?
(a) One (b) Two (c) Three
(d) Four (e) Cannot be determined

**15.** Who among the following sits second to the left of S?
(a) T (b) U (c) X
(d) V (e) W

**Directions (16-20):** Study the information and answer the following questions:

Nine persons N, P, R, M, T, O, U, V and W are sitting in a row some are facing north and some are facing south (but not necessarily in the same manner).
(Note: Facing the same direction means if one is facing north then the other also faces north and vice versa. Facing opposite direction means if one is facing north then the other faces south and vice versa).
U sits sixth to the right of O and neither of them sits at any end of the row. Two persons sit between U and P, who faces south. R sits second to the left of P. W is an immediate neighbor of R. Persons sitting at the end faces opposite direction. M is not an immediate neighbor of O. Two persons sit between V and the one who sits at the end. N sits to the immediate left of V. T and R faces south. W and N face same direction as V. U faces south. Not more than four persons face south.

**16.** Who among the following sits to the immediate left of T?
(a) O (b) N (c) M
(d) V (e) No one

**17.** How many persons sit between M and V?
(a) None (b) One (c) Two
(d) Three (e) More than three

**18.** What is the position of N with respect to M?
(a) Second to the right
(b) Second to the left
(c) Sixth to the right
(d) Sixth to the left
(e) None of these

**19.** Who among the following sits at the extreme end of the row?
(a) M (b) R (c) V
(d) T (e) Both (d) and (a)

**20.** How many persons face north?
(a) Three (b) Two (c) Five
(d) Four (e) Cannot be determined

**Directions (21-25):** In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.
Mark answer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21. Statements:** $X \geq V = T > U \geq W < Y$
**Conclusions I.** $X > Y$ **II.** $V > W$

**22. Statements:** $M < N = O \geq P > Q$; $R \geq P$
**Conclusions I.** $M < R$ **II.** $R \geq N$

**23. Statements:** $Q = V \leq W = P > T$; $S = R \geq P$
**Conclusions I.** $S < V$ **II.** $R = V$

**24. Statements:** $F > G = H \leq I > J \geq L$
**Conclusions I.** $F > J$ **II.** $L \leq H$

**25. Statements:** $A \leq B < C = D > E$; $F \geq D$
**Conclusions I.** $F > B$ **II.** $A < D$

**Directions (26-28):** Study the following information carefully and answer the questions given below:
Five different Conferences viz. S, Y, T, O and R were to be held in five different month viz. January, February, April, June and August of the same year starting from January. O was held in the month having least days. Conference R was held immediately after O. One conference was held between R and T. Conference S was held before R.

**26.** On which of the following month conference S was held?
(a) January (b) February (c) April
(d) August (e) None of these

**27.** Which conference was held on June?
(a) O (b) T (c) Y
(d) R (e) None of these

**28.** How many conferences were held between O and T?
(a) None (b) One (c) Two
(d) Three (e) None of these

**29.** In a row of 45 students facing north, Annie is 25th from the left end. Twenty students sit between Annie and Sam. What is the position of Sam from the left end?
(a) 45th (b) 40th (c) 3rd
(d) 4th (e) Cannot be determined

**30.** If K means '–', J means '×', T means '÷' and S means '+' then
6 S 9 T 3 J 5 K 1 = ?
(a) 0 (b) 24 (c) 20
(d) 18 (e) None of these

**Directions (31-35):** These questions are based on the following set of numbers.
**673 845 327 690 408 175**

**31.** If all the digits in each number are arranged in descending order within the number, then which of the following will form the second highest in the new arrangement?
(a) 673 (b) 845 (c) 327
(d) 690 (e) 175

**32.** If '2' is added to second digit of all the given numbers, then the resultant of how many numbers will not be divisible by 3?
(a) One (b) Two (c) Three
(d) Four (e) More than four

**33.** What will be the difference between the third digit of the lowest number and second digit of the highest number?
(a) 6 (b) 3 (c) 0
(d) 8 (e) 1

**34.** If all the digits in each number are arranged in ascending order within the number, then which of the following will form the second lowest in the new arrangement?
(a) 673 (b) 408 (c) 327
(d) 690 (e) 175

**35.** Which of the following will be the sum of the second digit of the highest number and second digit of the second lowest number?
(a) 10 (b) 9 (c) 8
(d) 6 (e) None of these

**Directions (36-40):** Study the given information carefully to answer the given questions.
In a certain code language,
'clerk results out' is written as 'soh bok mup',
'PO admit card out' is written as 'con kon mup buh',
'mains exam results clerk' is written as 'soh bok log goh' and
' PO clerk pre exam' is written as 'goh sor soh kon'.

**36.** What is the code for 'pre' in the given code language?
(a) mup
(b) log
(c) sor
(d) Other than those given as options
(e) goh

**37.** In the given code language, what does the code 'con' stand for?
(a) PO
(b) Either 'PO' or 'card'
(c) admit
(d) exam
(e) Either 'admit' or 'card'

**38.** What may be the code for 'date clerk' in the given code language?
(a) kon soh (b) soh nop (c) bok mup
(d) goh nop (e) log xom

**39.** What is the code for 'mup' in the given code language?
(a) PO (b) mains (c) admit
(d) clerk (e) out

**40.** If 'from card' is coded as 'yun buh' in the given code language, then what can be the code for 'admit from'?
(a) con yun (b) yun goh (c) sor kon
(d) con bok (e) yun bok

## QUANTITATIVE APTITUDE

**41.** The average age of Megha and Ritu is 18 years. Six years hence, Megha's age will be two times of Ritu's age. Find present age of Megha.
(a) 24 years (b) 26 years (c) 10 years
(d) 32 years (e) 18 years

**42.** Compound interest and simple interest on a certain sum for two years are Rs. 1100 and Rs. 1000 respectively. If rate of interest for both S.I. and C.I is 20% p.a., then find the sum.
(a) Rs. 2500 (b) Rs. 2000 (c) Rs.3000
(d) Rs. 1800 (e) Rs. 2200

**43.** If average of five consecutive odd numbers is 33, then the least odd number is:
(a) 27 (b) 31 (c) 29
(d) 23 (e) 33

**44.** Ramesh invests certain sum into two schemes A & B in the ratio of 2 : 3 for 3 years. Scheme A and B offered S.I. at the rate of 10% and 8% per annum respectively. If total S.I. obtained from both schemes after 3 years was Rs. 3300, then find amount invested by Ramesh in scheme A was?
(a) Rs. 5000 (b) Rs. 6000 (c) Rs. 7500
(d) Rs. 8000 (e) Rs. 2500

**45.** Rahul got 76 marks in physics out of 100, 88 in Math out of 100, 96 in chemistry out of 120 and 114 in Geography out of 120. Find his overall percentage marks in all the four subjects?
(a) 76% (b) 85% (c) 75%
(d) 69% (e) 89%

**46.** A train crosses a man, who is running in the same direction of train at the speed of 2m/sec. in 10 seconds. The same train crosses a tunnel in 54 seconds. If speed of train is 72 km/h then what is the length of tunnel?
(a) 850 m (b) 800 m (c) 900 m
(d) 750 m (e) 650 m

**47.** Raghav can beat Suresh by 100m in a race of 1 km and they run at speed of 10m/sec and 8 m/sec respectively. If Suresh increases his speed by 7m/sec then by how much time he will beat Raghav in the same race of 1km?
(a) 43 sec (b) 36 sec (c) $\frac{110}{3}$ sec
(d) $\frac{100}{3}$ sec (e) $\frac{70}{3}$ sec

**48.** Neeraj and Arun started a business by making investment in the ratio of 3 : 5. After four months, Arun withdraws one fifth of his initial investment. If total annual profit was Rs. 880, find profit share of Neeraj.
(a) Rs. 480 (b) Rs. 360 (c) Rs. 420
(d) Rs. 520 (e) Rs. 320

**49.** In how many different ways the letters of word 'DANGER' can be arranged?
(a) 5040 (b) 640 (c) 720
(d)120 (e) 520

**50.** Find the probability of selecting 2 green balls out of 4 green and 3 red balls.
(a) 6/7 (b) 4/7 (c) 3/7
(d) 2/7 (e) 1/7

**Directions (51-55):** What will come in place of (?) in the following number series?

**51.** 3, 4, 10, 33, ?, 685
(a) 140 (b) 136 (c) 154
(d) 156 (e) 144

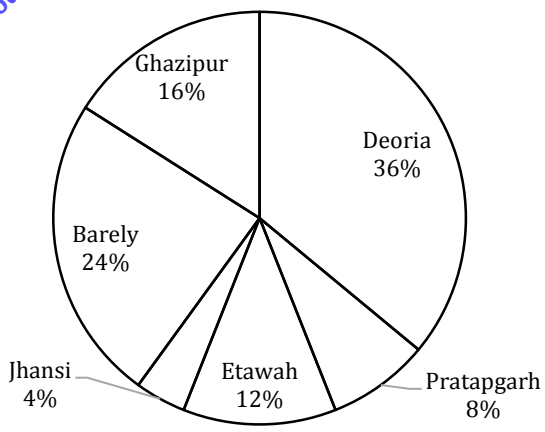
**52.** 8, 4, 6, 15, ?, 236.25
(a) 46.5 (b) 48.5 (c) 50.5
(d) 52.5 (e) 54.5

**53.** 13, 31, 52, 79, 115, ?
(a) 163 (b) 153 (c) 160
(d) 167 (e) 175

**54.** 119, 167, 287, 359, ?, 839
(a) 523 (b) 627 (c) 623
(d) 527 (e) 529

**55.** 4, 7, 13, 25, 49, ?
(a) 79 (b) 97 (c) 93
(d) 89 (e) 127

**Direction (56-60):** The following pie chart shows the percentage distribution of candidates who were selected in UPSI exam from six different district of UP. Study the graph carefully to answer the following questions.
Total selected candidates = 45,000




**56.** What is the difference between no. of candidates selected in UPSI exam from Ghazipur and Etawah?
(a) 1850 (b)1600 (c) 1800
(d) 1500 (e) 1700

**57.** Find the average no. of candidates who were selected in UPSI exam from Barely, Pratapgarh and Jhansi together.
(a) 5400 (b) 4500 (c) 5200
(d) 5600 (e) 4800

**58.** Total no. of candidates selected from Deoria is how much percent more than that of from Barely?
(a) 48% (b) 45% (c) 40%
(d) 50% (e) 55%

**59.** Out of total selected candidates from Etawah, 20% candidates are females. Then find total candidates who are males who are selected from Etawah?
(a) 4, 420 (b) 4,320 (c) 5,320
(d) 3,320 (e) 4,230

**60.** Total candidates selected from Pratapgarh is what percent of that from Barely?
(a) $33\frac{1}{3}\%$ (b) $22\frac{1}{2}\%$ (c) 43%
(d) 31% (e) $27\frac{1}{3}\%$

**Directions (61-70):** What will come in the place of question (?) mark:

**61.** $3\frac{2}{3}$ of $2\frac{2}{11}$ of 130 –40% of 350 =?
(a) 850 (b) 900 (c) 960
(d) 1000 (e) 1050

**62.** 23% of 600 + 33% of 800 = ? + 53% of 400
(a) 170 (b)180 (c) 190
(d) 210 (e) 150

**63.** $2\frac{1}{2} + 4\frac{3}{4} - 3\frac{2}{3} = ? - 3\frac{5}{6}$
(a) $5\frac{3}{4}$ (b) $6\frac{5}{12}$ (c) $5\frac{7}{12}$
(d) $7\frac{5}{12}$ (e) $8\frac{4}{7}$

**64.** 777 ÷ 700 + 5555 ÷ 5000 – 3333 ÷ 3300 =?
(a) 1.0211 (b) 2.111 (c) 1.211
(d) 0.211 (e) 2.011

**65.** 2341 + 4451 + 6329 – 8431 = ?
(a) 4690 (b) 4960 (c) 4860
(d) 4790 (e) 4520

**66.** 43% of 500 + 250% of 60 = ? + 150% of 80
(a) 145 (b) 425 (c) 245
(d) 345 (e) 225

**67.** ? of $\frac{3}{5}$ of $\frac{4}{7}$ of $\frac{15}{16}$ of 84 = 90% of 360
(a) 14 (b)12 (c) 16
(d) 18 (e) 10

**68.** 341.35 + 639. 65 + 456.80 =? + 746.80
(a) 491 (b) 591 (c) 961
(d) 691 (e) 791

**69.** 8430 ÷ 3 × 5 + 16% of 450 = ? + 24% of 225
(a) 12,068 (b) 14,068 (c) 16,064
(d) 14,680 (e) 16,068

**70.** $\sqrt[3]{1331} + \sqrt{841} + \sqrt{1296} = ? + \sqrt[3]{1728}$
(a) 60 (b) 46 (c) 64
(d) 72 (e) 54

**71.** The ratio between length and breadth of a rectangular field is 3 : 2. If perimeter of field is 250. Find the area of rectangular field.
(a) 3750 sq. unit
(b) 3570 sq. unit
(c) 3650 sq. unit
(d) 3250 sq. unit
(e) 3950 sq. unit

**72.** A boat can cover upstream distance between two points in 6 hours and same distance downstream in 4 hours. If speed of boat in still water is 8 km/h, then find speed of stream.
(a) 2 km/h (b) 1.6 km/h (c) 3.2 km/h
(d) 4.8 km/h (e) 3.8 km/h

**73.** Two trains X and Y cross each other in 48 sec, when both are running in same direction. If length of train X is 160 m and speed of train X and train Y are 54 km/h and 72 km/h respectively then find the length of train Y.
(a) 160 m (b) 120 m (c) 80 m
(d) 100 m (e) 95 m

**74.** In a 64 litre mixture of milk and water the ratio of water to milk is 3 : 5. If x litre water is mixed in this mixture, so the ratio of water to milk becomes 5 : 8. Find the value of x.
(a) 6 $l$ (b) 4 $l$ (c) 2 $l$
(d) 1 $l$ (e) 5 $l$

**75.** A is 20% more efficient than B who complete the work alone in 20 days. A work first two days alone, then find in how many days remaining work will be completed if both work together?
(a) 6 days (b) 5 days (c) 9 days
(d) 8 days (e) 7 days

**Direction (76-80):** What will come in the place of question (?) mark:

**76.** ? % of 450 – 54% of 350 = 64% of 450
(a) 206 (b) 106 (c) 110
(d)112 (e) 93

**77.** $3\frac{1}{2} + 6\frac{3}{5} + 4\frac{3}{6} = ? + 7\frac{4}{6}$
(a) $6\frac{14}{15}$ (b) $8\frac{14}{15}$ (c) $5\frac{3}{7}$
(d) $8\frac{5}{8}$ (e) $9\frac{14}{15}$

**78.** 10.8% of 250 + 21.6% of 550 = 10% of ?
(a) 1258 (b) 1485 (c) 1458
(d) 1658 (e) 1548

**79.** $984 \div 3 \times 5 + 3861 \div 11 - \frac{4}{5}$ of 1050 =?
(a) 1051 (b) 1511 (c) 1115
(d)1151 (e) 951

**80.** 2346 ÷ 300 + 54342 ÷ 3000 – 432 ÷ 30 =?
(a) 9.534 (b) 11.534 (c) 8.34
(d) 12.34 (e) 11.34

# Mock 17 : Solutions

## REASONING ABILITY

**Directions (1-5):**
P stays on fourth floor and born in April. Two person lives between P and the person who was born in March. O who was born in February lives immediate above J. Neither M nor K was born in March and May and none of them lives on third floor. Four persons live between O and the person who was born in March. By above conditions, there will be two possibilities----

| Case-1 | | |
|---|---|---|
| **FLOORS** | **PERSONS** | **MONTH** |
| **7** | | |
| **6** | O | February |
| **5** | J | |
| **4** | P | April |
| **3** | ~~M, J~~ | |
| **2** | | |
| **1** | ~~M, J~~ | March |

| Case-2 | | |
|---|---|---|
| **FLOORS** | **PERSONS** | **MONTH** |
| **7** | ~~M, J~~ | March |
| **6** | | |
| **5** | | |
| **4** | P | April |
| **3** | ~~M, J~~ | |
| **2** | O | February |
| **1** | J | |

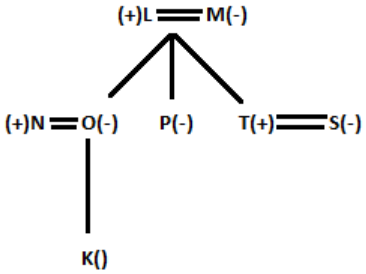
The person living on second floor was born in January but does not live immediate above or below J. By this condition Case-2 will be cancelled. M lives above K. The person who was born in May lives below the person who was born in July, who does not live on topmost floor. L was not born in May. Final arrangement will be---

| FLOORS | PERSONS | MONTH |
|---|---|---|
| 7 | M | June |
| 6 | O | February |
| 5 | J | July |
| 4 | P | April |
| 3 | N | May |
| 2 | K | January |
| 1 | L | March |

**1. (e); 2. (a); 3. (d)**

**4. (c); 5. (d);**

**Directions (6-8):**



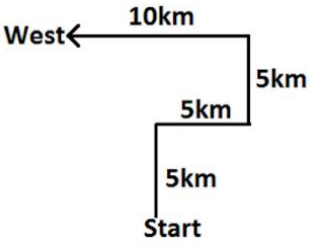

**6. (e); 7. (a); 8. (e);**

**9. (c);**

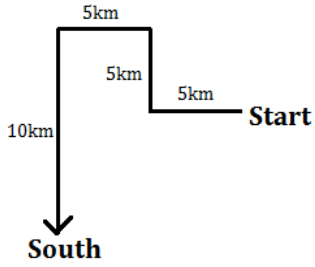

**10. (b);**

**Directions (11-12):**

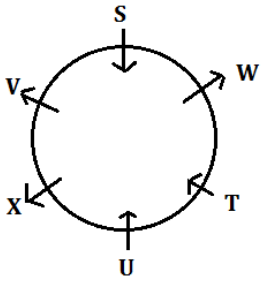
**11. (d);**




**12. (b);**




**Directions (13-15):**

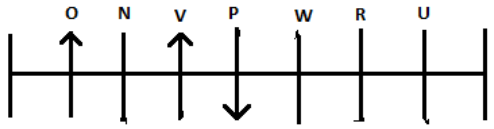



**13. (d); 14. (c); 15. (a);**

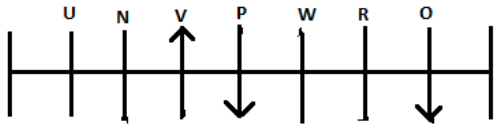
**Directions (16-20):**

U sits sixth to the right of O and neither of them sits at any end of the row. Two persons sit between U and P, who faces south. R sits second to the left of P. W is an immediate neighbor of R. Two persons sit between V and the one who sits at the end. N sits to the immediate left of V. There are two possible cases

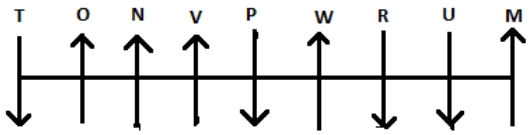
**Case I**




**Case II**




Now, M is not an immediate neighbor of O. T and R faces south. W and N face same direction as V. U faces south. Not more than four persons face south. So final arrangement will be




**16. (a); 7. (e); 18. (d);**

**19. (e); 20. (c);**

**Directions (21-25):**

**21. (b); I.** X > Y (False) **II.** V > W (True)

**22. (d); I.** M < R (False) **II.** R ≥ N (False)

**23. (d); I.** S < V (False) **II.** R = V (False)

**24. (d); I.** F > J (False) **II.** L ≤ H (False)

**25. (e); I.** F > B (True) **II.** A < D (True)

**Directions (26-28):**

| Month | Conference |
|---|---|
| January | S |
| February | O |
| April | R |
| June | Y |
| August | T |

**26. (a)** **27. (c)** **28. (c)**

**29. (d)**

**30. (c); (6 + 9 ÷ 3 × 5 – 1) = 20**

**Directions (31-35):**

**31. (b);** **32. (d);** **33. (e);**

**34. (d);** **35. (d);**

**Directions (36-40):**

| Word | Code |
|---|---|
| Clerk | Soh |
| PO | Kon |
| Mains | Log |
| Pre | Sor |
| Exam | Goh |
| Results | Bok |
| Admit/card | Con/buh |
| Out | mup |

**36. (c)** **37. (e)** **38. (b)**

**39. (e)** **40. (a)**

## QUANTITATIVE APTITUDE

**41. (b);** Let Megha's age = x years
Ritu's age = y years
∴ x + y = 36 ...(i)
And,
x + 6 = 2(y + 6)
⇒ x – 2y = 6 ...(ii)
Solving eq. (i) and (ii), we get
x = 26 years, y = 10 years

**42. (a);** Let sum is Rs. P
∴ C.I. – S.I. (for two years) = $\frac{PR^2}{100^2}$
⇒ $\frac{P(20)^2}{100^2}$ = 1100 – 1000 ⇒ P = Rs. 2500

**43. (c);** Let odd numbers are x – 4, x – 2, x, x + 2, x + 4
∴ $\frac{x-4+x-2+x+x+2+x+4}{5}$ = 33 ⇒ x = 33
∴ least odd number = 33 – 4 = 29

**44. (a);** Let sum invested in scheme A = 2x Rs.
Sum invested in scheme B = 3x Rs.
ATQ,
$\frac{2x\times10\times3}{100}+\frac{3x\times8\times3}{100}$ = 3300
⇒ 132x = 3300 × 100
⇒ x = 2500 Rs
∴ Required Sum = Rs. 5,000

**45. (b);** Total marks obtained by Rahul in all the four subjects = 76 + 88 + 96 + 114 = 374
Total maximum marks = 100 + 100 + 120 + 120 = 440
∴ Required percentage = $\frac{374}{440}\times 100$ = 85 %

**46. (c);** Speed of man = 2 m/sec
Speed of train = $72\times\frac{5}{18}$ = 20 m/sec
∴ Length of train = (20 – 2) × 10 = 180 m
∴ Length of tunnel = 54 × 20 – 180 = 900 m

**47. (d);** Required time = $\frac{1000}{10}-\frac{1000}{(8+7)}$
= $\frac{1000}{30}$ sec = $\frac{100}{3}$ sec

**48. (b);** Lets Neeraj and Arun invested Rs. 3x and Rs. 5x respectively
Ratio of profit of Neeraj and Arun
= 3x × 12 : (5x × 4 + 4x × 8)
= 36x : 52x ⇒ = 9 : 13
∴ Profit share of Neeraj = $\frac{9}{22}\times 880$ = Rs. 360

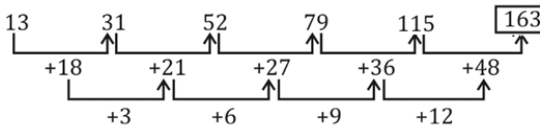
**49. (c);** Required no. of ways = 6! = 720

**50. (d);** Required probability = $\frac{{}^4C_2}{{}^7C_2}=\frac{4\times3}{7\times6}=\frac{2}{7}$

**51. (b);** Pattern of Series is
3 × 1 + 1 = 4
4 × 2 + 2 = 10
10 × 3 + 3 = 33
33 × 4 + 4 = 136
136 × 5 + 5 = 685

**52. (d);** Pattern of series –
8 × 0.5 = 4
4 × 1.5 = 6
6 × 2.5 = 15
15 × 3.5 = 52.5

**53. (a);** Pattern is




**54. (d);** Pattern Series is
$11^2 - 2 = 121 - 2 = 119$
$13^2 - 2 = 169 - 2 = 167$
$17^2 - 2 = 289 - 2 = 287$
$19^2 - 2 = 361 - 2 = 359$
$23^2 - 2 = 529 - 2 = \boxed{527}$
$29^2 - 2 = 841 - 2 = 839$

**55. (b);** Series is
$4 \times 2 - 1 = 7$
$7 \times 2 - 1 = 13$
$13 \times 2 - 1 = 25$
$25 \times 2 - 1 = 49$
$49 \times 2 - 1 = \boxed{97}$

**56. (c);** Required difference $= \frac{(16-12)}{100} \times 45000 = 1800$

**57. (a);** Required average $= \frac{1}{3} \times (24 + 8 + 4) \times 450 = 5400$

**58. (d);** Required percentage $= \frac{36-24}{24} \times 100 = 50\%$

**59. (b);** No. of candidates who are males who are selected from Etawah
$= \frac{12}{100} \times \frac{80}{100} \times 45000 = 4{,}320$

**60. (a);** Required percentage $= \frac{8}{24} \times 100 = 33\frac{1}{3}\%$

**61. (b);** $? = \frac{11}{3} \times \frac{24}{11} \times 130 - \frac{40}{100} \times 350$
$= 1040 - 140$
$= 900$

**62. (c);** $? = 23 \times 6 + 33 \times 8 - 53 \times 4$
$= 138 + 264 - 212 = 190$

**63. (d);** $? = (2 + 4 - 3 + 3) + \left(\frac{1}{2} + \frac{3}{4} - \frac{2}{3} + \frac{5}{6}\right)$
$= 6 + \frac{17}{12} = 7\frac{5}{12}$

**64. (c);** $? = 1.11 + 1.111 - 1.01$
$= 1.211$

**65. (a);** $? = 13121 - 8431 = 4690$

**66. (c);** $? = 43 \times 5 + 25 \times 6 - 15 \times 8$
$= 365 - 120 = 245$

**67. (b);** $? \times \frac{3}{5} \times \frac{4}{7} \times \frac{15}{16} \times 84 = \frac{90}{100} \times 360$
$\Rightarrow ? \times 27 = 36 \times 9$
$\Rightarrow ? = 12$

**68. (d);** $? = 1437.8 - 746.8 = 691$

**69. (b);** $? + \frac{24}{100} \times 225 = \frac{8430}{3} \times 5 + \frac{16}{100} \times 450$
$? + 54 = 14050 + 72 \Rightarrow ? = 14{,}068$

**70. (c);** $? = 11 + 29 + 36 - 12 = 64$

**71. (a);** Let length of field $= 3x$
breadth of field $= 2x$
ATQ,
$2(3x + 2x) = 250$
$\Rightarrow x = 25$
$\therefore$ Required area $= 75 \times 50 = 3750$ sq. unit

**72. (b);** Let speed of stream $= s$ km/hr
$\therefore (8 - s) \times 6 = (8 + s) \times 4$
$\Rightarrow 48 - 6s = 32 + 4s$
$\Rightarrow s = 1.6$ km/hr

**73. (c);** Speed of train X (in m/sec) $= 54 \times \frac{5}{18} = 15$ m/s
Speed of train Y (in m/sec) $= 72 \times \frac{5}{18} = 20$ m/s
ATQ,
Let length of train Y = y meters
$\frac{(160+y)}{(20-15)} = 48$
$\Rightarrow y = 80$ m

**74. (d);** Initial quantity of water in mixture $= \frac{3}{8} \times 64 = 24\ell$
Initial quantity of milk in mixture $= \frac{5}{8} \times 64 = 40\ell$
ATQ,
$\frac{24+x}{40} = \frac{5}{8}$
$\Rightarrow 24 + x = 25 \Rightarrow \Rightarrow x = 1\ell$

**75. (d);** A : B = 120 : 100
$= 6 : 5$
Total work $= 120 \times 5 = 100$
Remaining work $= 100 - 6 \times 2 = 88$
Required days $= \frac{88}{(6+5)} = 8$ days

**76. (b);** $\frac{?}{100} \times 450 = \frac{54}{100} \times 350 + \frac{64}{100} \times 450$
$\Rightarrow 4.5 \times ? = 189 + 288$
$\Rightarrow ? = \frac{477}{4.5} \Rightarrow ? = 106$

**77. (a);** $? = (3 + 6 + 4 - 7) + \left(\frac{1}{2} + \frac{3}{5} + \frac{3}{6} - \frac{4}{6}\right)$
$= 6 + \left(\frac{1}{2} + \frac{3}{5} + \frac{1}{2} - \frac{2}{3}\right)$
$= 7 - \frac{1}{15} = 6\frac{14}{15}$

**78. (c);** $\frac{10}{100} \times ? = \frac{10.8}{100} \times 250 + \frac{21.6}{100} \times 550$
$\frac{?}{10} = 27 + 118.8$
$\Rightarrow ? = 1458$

**79. (d);** $? = 328 \times 5 + 351 - 4 \times 210$
$= 1640 + 351 - 840 = 1151$

**80. (b);** $? = 7.82 + 18.114 - 14.4 = 11.534$

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# Mock 18

# IBPS RRB Clerk Prelims

## REASONING ABILITY

**Directions (1-4):** Study the following sequence and answer the given questions.

There are six girls A, B, D, N, R and S. Each one of them likes different chocolates viz. Temptation, Silk, Toblerone, Snickers, Bournville and M&M. Temptation and Toblerone are not liked by B and D. A does not like M&M. Bournville is liked by N. A does not like Temptation. Neither S nor R likes M&M and Snickers. Toblerone is not liked by R. Temptation is not liked by S. D does not like M&M. Neither B nor D likes Snickers. Toblerone is not liked by A.

**1.** Who among the following likes 'Toblerone' and 'Temptation' respectively?
(a) S, R (b) D, N (c) B, A
(d) R, B (e) None of these

**2.** 'A' likes which chocolate ?
(a) Silk (b) Toblerone (c) Snickers
(d) Temptation (e) None of these

**3.** 'Silk' is liked by who among the following?
(a) B (b) N (c) R
(d) S (e) None of these

**4.** B likes which chocolate?
(a) Silk
(b) Temptation
(c) Toblerone
(d) M&M
(e) None of these

**5.** If F means '–', H means '×', G means '÷ ' and E means '+' then
30 G 3 H 4 F 17 E 2 = ?
(a) 5 (b) 25 (c) 32
(d) 11 (e) None of these

**Directions (6-10):** Study the following sequence and answer the given questions.
**7 D * 8 Y E 5 A $ @ G S 4 5 R ^ 0 % W 1 O K & M 3 9 U # T Q 2 ! H**

**6.** Which of the following element is 7th to the left of the one which is 21st from the left end of the given arrangement?
(a) R (b) 4 (c) 5
(d) ^ (e) None of these

**7.** If all the digits are dropped from the series, which element will be tenth from the right end of the new arrangement?
(a) & (b) K (c) O
(d) W (e) None of these

**8.** How many such symbols are there in the given series which are immediately preceded by a number and immediately followed by a consonant?
(a) None (b) One (c) Two
(d) Three (e) Four

**9.** How many such vowels are there in the given series which are immediately preceded by number and immediately followed by symbol?
(a) One (b) Two (c) Three
(d) More than three (e) None of these

**10.** What should come in place of question mark (?) in the following series based on the above arrangement?
8E5 @S4 ^%W ?
(a) &9U (b) K&3 (c) &39
(d) KM9 (e) KM3

**Directions (11-15):** Study the following information carefully and answer the questions given below:

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input: Student 19 Teacher 8 Marks 23 School 44 Notebook 5**
Step I: Notebook Student 19 Teacher 8 Marks 23 School 5 44
Step II: School Notebook Student 19 Teacher 8 Marks 5 44 23
Step III: Teacher School Notebook Student 8 Marks 5 44 23 19
Step IV: Marks Teacher School Notebook Student 5 44 23 19 8
Step V: Student Marks Teacher School Notebook 44 23 19 8 5

Step V is the last step of the above arrangement. As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.

**Input: Work 27 Workers 18 Manager 39 Report 3 Office 9**

**11.** Which of the following element is seventh from the right end in Step II?
(a)Manager (b)18 (c)Workers
(d)Work (e) None of these

**12.** Which of the following element is third from the left end in step III?
(a) Office (b)Work (c)27
(d) Report (e)None of these

**13.** Which of the following element is exactly between 'Workers' and 'Report' in Step IV of the given input?
(a) Office (b) Manager (c) Work
(d) 39 (e) None of these

**14.** Which element is second to the right of 'Work' in step V?
(a) 39 (b) 27 (c) 9
(d) Manager (e) None of these

**15.** Which element is fourth to the left of '9' in step II?
(a) Workers (b)18 (c) Manager
(d) 39 (e) None of these

**Directions (16-20):** Study the following information carefully and answer the questions given below:
There are Ten friends E, F, G, H, I, J, K, L, M and N sitting around a circular table facing center.
M sits third to the right of E.G sits fourth to the right of M. There are as many persons sit between M and F as between J and M. I is not an immediate neighbor of F. Only one person sits between G and H.I sits fourth to the left of H. Neither J nor F is an immediate neighbor of N. Only two persons sit between I and L, who is not an immediate neighbor of M. K sits second to the left of L.

**16.** Who among the following sits third to the left of F?
(a) K (b) G (c) I
(d) E (e) N

**17.** Who among the following sits exactly between I and H counting from right of I?
(a) J (b) M (c) F
(d) K (e) E

**18.** Who among the following sits immediate right of J?
(a) I (b) N (c) L
(d) M (e) None of these

**19.** Who among the following sits second to the right of G?
(a) N (b) L (c) E
(d) K (e) H

**20.** What is the position of F with respect to K?
(a) third to the right
(b)second to the left
(c) fifth to the left
(d) seventh to the right
(e) immediate right

**Directions (21-25):** In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions.
Mark answer as
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21.** **Statements:** $X > Y \geq Z = L \geq M > N$
**Conclusions** **I.** $X > N$ **II.** $Y \geq M$

**22.** **Statements:** $A \leq B = C \geq D > E \leq F$
**Conclusions** **I.** $B > E$ **II.** $A \leq F$

**23.** **Statements:** $J = K > L \geq M = N \leq O > P$
**Conclusions** **I.** $J > O$ **II.** $K > P$

**24.** **Statements:** $S > T \geq M \leq O = U$ ; $P = N < M$
**Conclusions** **I.** $S > P$ **II.** $N < U$

**25.** **Statements:** $G = J > H \leq I = K$ ; $M = L > I$ ; $J \geq S$
**Conclusions** **I.** $I \geq S$ **II.** $M > H$

**Directions (26-30):** Study the given information carefully to answer the given questions.

There are seven persons in a family J, K, L, P, R, S and U. Each one of them is in different profession viz. Doctor, Manager, Lawyer, Businessman, Teacher, Banker and Cricketer. Only three females are there in the family.

K is the mother of U, who is a doctor. R is the daughter-in-law of J who is a businessman. S has two children. L is brother-in-law of P, who has no child. S is mother-in-law of L who is a cricketer. Sister-in-law of R is a manager. The one who is the teacher is a grandparent. P is child of S. The one who is a businessman is the maternal grandfather of doctor. J has only one son. The one who is a banker is a male. L and R does not have any siblings.

**26.** Who among the following is a Manager?
(a) L (b) R (c) P
(d) K (e) None of these

**27.** How P is related to U?
(a)Aunt (b)Uncle (c)Father
(d)Mother (e)None of these

**28.** How is U related to the one who is a teacher?
(a) Daughter (b) Son (c) Grandson
(d) Grandfather (e) Cannot be determined

**29.** R is in which profession?
(a) Banker (b) Manager (c) Teacher
(d) Doctor (e) Lawyer

**30.** How is J related to the one who is a lawyer?
(a)Father (b)Grandfather (c)Father-in-law
(d)Brother-in-law (e)None of these

**Directions (31-32):** Study the following information carefully and answer the questions given below

There are 52 students in a class each of them has different ranks. Rank of Shikha from top is 23th and rank of Deepak from bottom is 24th

**32.** How many students got rank between Shikha and Deepak?
(a) 3 (b) 4 (c) 5
(d) 6 (e)None of these

**32.** Rank of Shivani lies exactly between Shikha and Deepak, then what is her rank from bottom?
(a)23rd (b)24th (c)25th
(d)27th (e)None of these

**33.** How many pairs of letters are there in the word" QUESTION" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

**Directions (34-35):** Study the given information carefully to answer the given questions.

There are six persons i.e. P, Q, R, S, T and U of different heights. Q is taller than R but smaller than P. T is taller than Q, but not the tallest. Only three persons are smaller than U. U is smaller than P. S is smaller than Q, but not the smallest. The one who is second tallest is 178 cm.

**34.** Who among the following is third smallest?
(a)T (b)Q (c) S
(d) R (e)None of these

35. If height of S is 167 cm then what can be the possible height of U?
(a) 177 cm (b) 165 cm (c) 160 cm
(d) 182 cm (e) 163 cm

**Directions (36-40):** Study the given information carefully to answer the given questions.

In a certain code language,
'Bank job is good' is written as 'lan suh kal nas'
'Good job in PSU' is written as 'lan bun suh kus'
'Bank is a PSU' is written as 'nas kus kal ron'
'Each job is worthy' is written as 'jol nas moc lan'

**36.** What is the code for 'PSU' in the given code language?
(a) lan
(b) kus
(c) nas
(d) Other than those given as options
(e) suh

**37.** In the given code language, what does the code 'suh' stand for?
(a) good (b) PSU (c) in
(d) job (e) Bank

**38.** What may be the code for 'bank job' in the given code language?
(a) lan bun (b) ron kal (c) suh nas
(d) kal lan (e) None of these

**39.** What is the code for 'moc' in the given code language?
(a) each (b) in (c) worthy
(d) a (e) either (a) or (c)

**40.** If 'person is worthy' is coded as 'moc bog nas' in the given code language, then what is the code for 'each person'?
(a) kal lan (b) nas bog (c) bog lan
(d) jol bog (e) suh bog

## QUANTITATIVE APTITUDE

**41.** A and B can complete a work alone in 18 days and 24 days respectively. If B started work alone and after 3 days A also joined then in how many days whole work will be completed.
(a) 6 days (b) 12 days (c) 8 days
(d) 10 days (e) 15 days

**42.** A sum on simple interest becomes $\frac{7}{2}$ times of itself in ten years, find the rate of interest.
(a) 20% (b) 16% (c) 30%
(d) 25% (e) 12%

**43.** A bag contains 5 blue balls and 7 red balls, if 2 balls are drawn at random. What is the probability that at least 1 ball is red.
(a) $\frac{28}{33}$ (b) $\frac{17}{66}$ (c) $\frac{23}{33}$
(d) $\frac{47}{66}$ (e) None of these

**44.** A train P running with speed 54 kmph crosses a man in 30 sec. In how much time it can cross a 180 m long platform.
(a) 51 sec (b) 45 sec (c) 42 sec
(d) 39 sec (e) 58 sec

**45.** The ratio of milk and water in a vessel is 5 : 8. If 6 liter of milk added in it ratio of milk to water becomes 7 : 8. Find the initial quantity of mixture in the vessel.
(a) 28 liter (b) 39 liter (c) 42 liter
(d) 24 liter (e) 36 liter

**Direction (46-50):** What will come at the place of question (?) marks:

**46.** 56 % of 350 + 48 % of 550 – 15 × 2.4 = ?
(a)385 (b)424 (c)456
(d)362 (e)348

**47.** $(64)^{0.5} \times (32)^{1.4}$ - ? % of 15 = $(28)^2$
(a)18 (b)35 (c)16
(d)24 (e)21

**48.** $?\times 6\frac{3}{11} \times 2\frac{9}{23} = 18\ \%\ of\ 1500$
(a)13 (b)40 (c)25
(d)11 (e)18

**49.** $\frac{576}{18} + (32)^2 +$ ? % of 960 = $(36)^2$
(a)15 (b)25 (c)35
(d)44 (e)60

**50.** $11.2 \times 15 + 6.4 \times 7.5 = (?)^3$
(a) 15 (b) 21 (c) 3
(d) 6 (e) 9

**Direction (51-55):** Given below the table shows total number of room booked in five different hotels on five days of a week. Read the table carefully and answer the questions:

| Hotels | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Oberai | 360 | 280 | 560 | 520 | 480 |
| Lodhi | 260 | 275 | 225 | 215 | 305 |
| Taj | 640 | 480 | 290 | 375 | 275 |
| Grand | 280 | 250 | 300 | 720 | 220 |
| Eros | 155 | 145 | 265 | 275 | 315 |

**51.** Total rooms booked in 'Oberai' on Tuesday & Thursday together is what percent less than total rooms booked in 'Grand' on Monday & Thursday?
(a)25% (b)20% (c)16%
(d)34% (e)48%

**52.** Find difference between total number of rooms booked in 'Oberai', 'Lodhi' & 'Taj' on Monday together and total number of rooms booked in 'Taj' , 'Grand'& 'Eros' on Thursday together?
(a)140 (b)210 (c)70
(d)110 (e)135

**53.** Find ratio between total rooms booked in 'Eros' on Wednesday & Thursday together to total rooms booked in 'Lodhi' on Thursday & Friday together?
(a)27: 26 (b)19: 17 (c)29: 32
(d)53 :49 (e)24: 23

**54.** Find sum of average numbers of room booked in 'Eros' on Monday, Wednesday & Friday and average number of rooms booked in 'Grand' on Monday & Friday?
(a)580 (b)380 (c)495
(d)460 (e)535

**55.** Find percentage increase in rooms booked on Friday in 'Oberai' over total rooms booked on Monday in same Hotel?
(a)46% (b)$66\frac{2}{3}\%$ (c)$37\frac{1}{2}\%$
(d)28% (e)$33\frac{1}{3}\%$

**Direction (56-60):** What will come at the place of question (?) marks in given number series:

**56.** 22, 146, 209, 235, ?, 242
(a) 236 (b) 256 (c) 250
(d) 252 (e) 242

**57.** 28, 92, 124, 140, 148, ?
(a) 156 (b) 150 (c) 152
(d) 160 (e) 162

**58.** 81, 1412, 2141, 2484, 2609, ?
(a) 2650 (b) 2636 (c) 2753
(d) 2860 (e) 2640

**59.** 3, 7, 22, 89, ?, 2677
(a) 446 (b) 442 (c) 440
(d) 430 (e) 426

**60.** 25, 41, 257, 321, 1321, ?
(a) 1440 (b) 1465 (c) 1360
(d) 1355 (e) 1420

**61.** Ratio of present age of Mohit and Ankit is 3 : 4. If ratio of their ages after 6 years becomes 4 : 5. Then find the difference of present age of Mohit and Ankit.
(a) 2 years (b) 8 years (c) 6 years
(d) 4 years (e) 5 years

**62.** A boat can travel with the speed of 17 kmph in upstream. If the speed of river is 3 kmph, then find the speed of boat in downstream in the same river.
(a) 23 kmph (b) 20 kmph (c) 25 kmph
(d) 19 kmph (e) 21 kmph

**63.** Radius of a circular ring is 21 cm. If this ring is folded in square form, then find the length of diagonal of square.
(a) 25 cm (b) $33\sqrt{2}$ cm (c) 28 cm
(d) $35\sqrt{3}$ cm (e) $32\sqrt{3}$ cm

**64.** Average of ages of 5 persons A, B, C, D, E is 37 years. If the average age of A and B is 34 years and average of C and D is 40 years then find the age of E.
(a) 34 years (b) 41 years (c) 43 years
(d) 35 years (e) 37 years

**65.** A started a business with investment Rs. 5000 and after 6 month of starting the business B also joined with capital 8000. At the end of year annual profit of business was Rs. 7200. Find the profit share of B.
(a) Rs. 3200 (b) Rs. 4000 (c) Rs. 2800
(d) Rs. 3600 (e) Rs. 5000

**Direction (66-75):** What will come at the place of question (?) marks:

**66.** $\frac{318\times48}{12\times?}+12.8\times5-(3)^3=(14)^2$
(a)13 (b)8 (c)9
(d)17 (e)22

**67.** $6\frac{3}{5}+3\frac{4}{5}-4\frac{4}{5}+?=8\frac{7}{10}$
(a)-22 (b)19 (c)$5\frac{1}{2}$
(d) $3\frac{1}{10}$ (e)$5\frac{3}{4}$

**68.** $526+344-532-\sqrt{?}=(18)^2$
(a)196 (b)144 (c)225
(d)240 (e)186

**69.** $55\%\text{ of }540+33\frac{1}{3}\%\ of\ 183+\sqrt{?}=(19)^2$
(a)2 (b)17 (c)25
(d)5 (e)9

**70.** $75+34-23+?=17\times6$
(a)16 (b)12 (c)19
(d)23 (e)10

**71.** $4\frac{7}{12}+6\frac{5}{6}-8\frac{3}{4}=?+1\frac{2}{3}$
(a) 2 (b) 1 (c) 3
(d) 4 (e) 5

**72.** $25.4\times8+49.7\times4+?=(22)^2$
(a) 80 (b) 84 (c) 78
(d) 82 (e) 75

**73.** $645+456-987-\sqrt{?}=(3)^4$
(a)1024 (b) 256 (c) 729
(d) 931 (e) 1089

**74.** $810-756+?=10.5\%\text{ of }1050$
(a) 49.25 (b) 68.25 (c) 56.25
(d) 48.25 (e) 55.25

**75.** $333\div3+752\div16+?=32\times20$
(a) 482 (b) 692 (c) 548
(d) 456 (e) 582

**76.** If the rate of interest is 20% p.a. then find the compound interest earned on Rs. 2000 in $1\frac{1}{2}$ years. If interest is charged half yearly.
(a) Rs. 500 (b) Rs. 961 (c) Rs. 662
(d) Rs. 463 (e) Rs. 460

**77.** In an exam Noureen scored 222 marks and failed by 8% marks. In the same exam Pallavi scored 204 marks and failed by 11% marks. Find the passing marks of the exam.
(a) 240 (b) 360 (c) 300
(d) 270 (e) 180

**78.** A 570 m long train can cross a pole in 38 sec. In how much time it can cross a 660 m long platform.
(a) 82 sec (b) 64 sec (c) 90 sec
(d) 120 sec (e) 72 sec

**79.** A tank can be filled by two tap P and Q individually in 12 and 15 hours respectively. In how uch time it can be filled if both tap are opened together.
(a) $4\frac{2}{3}$ hours (b) $6\frac{2}{3}$ hours (c) $6\frac{1}{2}$ hours
(d) 8 hours (e) $8\frac{3}{5}$ hours

**80.** In how many ways can the letters of word 'NOUVEAU' can be arranged.
(a) 1840 (b) 1260 (c) 5040
(d) 2520 (e) 2240

# Mock 18 : Solutions

## REASONING ABILITY

**Directions (1-4):**
Temptation and Toblerone are not liked by B and D. A does not like M&M. A does not like Temptation. Neither S nor R likes M&M and Snickers. Toblerone is not liked by R. Temptation is not liked by S. D does not like M&M. Neither B nor D likes Snickers. Toblerone is not liked by A.
By the given conditions-----

| Girls / Chocolates | A | B | D | R | S |
|---|---|---|---|---|---|
| Temptation | X | X | X | | X |
| Toblerone | X | X | X | X | |
| Snickers | | X | X | X | X |
| M&M | X | | X | X | X |

Bournville is liked by N. Since A, B, R, N and S are placed in their respective columns, therefore D likes silk.
So, Final arrangement will be---

| Girls | Chocolates |
|---|---|
| D | Silk |
| R | Temptation |
| N | Bournville |
| S | Toblerone |
| A | Snickers |
| B | M&M |

**1. (a); 2. (c); 3. (e);**

**4. (d);**

**5. (b);** $(30 \div 3 \times 4 - 17 + 2) = 25$

**Directions (6-10):**

**6. (c);**

**7. (c);**

**8. (c);** Two i.e. **0%W 2!H**

**9. (b);** Two i.e. **5A$ 9U#**

**10. (e);**

**Directions (11-15):**
In the arrangement words are arranged along with a number in each step. As for words, they are arranged in alphabetical order of the last letter of each word on the left end while the numbers are arranged in decreasing order on the right end.

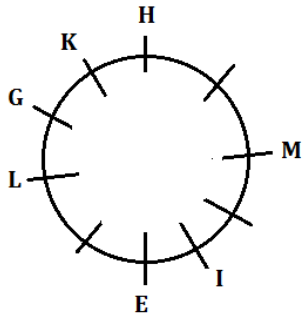
**Input: Work 27 Workers 18 Manager 39 Report 3 Office 9**
Step I: Office Work 27 Workers 18 Manager Report 3 9 39
Step II: Work Office Workers 18 Manager Report 3 9 39 27
Step III: Manager Work Office Workers Report 3 9 39 27 18
Step IV: Workers Manager Work Office Report 3 39 27 18 9
Step V: Report Workers Manager Work Office 39 27 18 9 3

**11. (b); 12. (a); 13. (c);**

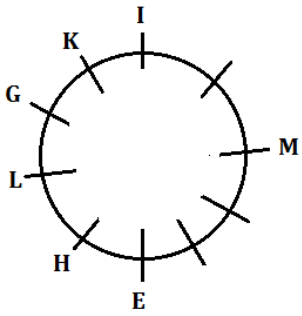
**14. (a); 15. (b);**

**Directions(16-20):**
M sits third to the right of E.G sits fourth to the right of M. Only one person sits between G and H.I sits fourth to the left of H. Only two persons sit between I and L, who is not an immediate neighbor of M. K sits second to the left of L.
So according to position of H, there will be two possibilities---

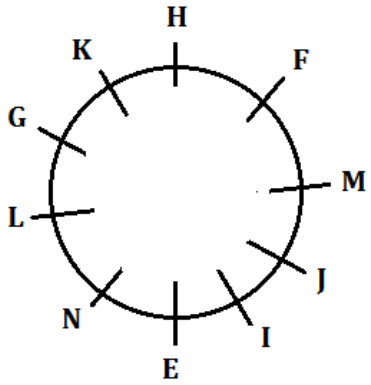
Case 1




Case 2




There are as many persons sit between M and F as between J and M. Neither J nor F is an immediate neighbor of N. By this condition case-2 will be cancelled, Also I is not an immediate neighbor of F.
We got the final arrangement----




**16. (c); 17. (b); 18. (d);**

**19. (a); 20. (b);**

**Directions (21-25):**

**21. (e);** **I.** X > N (True) **II.** Y ≥ M (True)

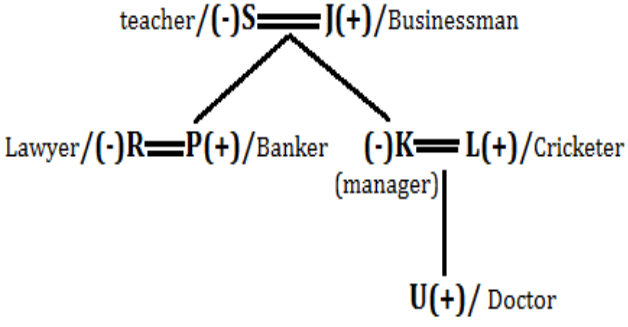
**22. (a);** **I.** B > E (True) **II.** A ≤ F (False)

**23. (d);** **I.** J > O (False) **II.** K > P (False)

**24. (e);** **I.** S > P (True) **II.** N < U (True)

**25. (b);** **I.** I ≥ S (False) **II.** M > H (True)

**Directions (26-30):**



**26. (d); 27. (b); 28. (c);**

**29. (e); 30. (c);**

**Directions (31-32):**

**31. (c);** Rank of Deepak from top = (52-24 +1) = 29th
Therefore, there are five students between them.

**32. (d);** As rank of Shivani lies exactly between 23rd and 29th from top . Therefore her rank from top is 26th and from bottom is (52-26 +1) = 27th

**33. (d); Three**


**Directions (34-35):**

**P > T (178CM) > U > Q > S > R**

**34. (b);**

**35. (a);** P > T (178CM) > U > Q > S (167 cm) > R

**Directions (36-40):**

| WORD | CODE |
|---|---|
| Bank | Kal |
| Job | Lan |
| Is | Nas |
| Good | Suh |
| A | Ron |
| PSU | Kus |
| In | Bun |
| Each/worthy | Moc/jol |

**36. (b); 37. (a); 38. (d);**

**39. (e); 40. (d);**

## QUANTITATIVE APTITUDE

**41. (b);** 1 day work of A = $\frac{1}{18}$
1 day work of B = $\frac{1}{24}$
3 day's work of B = $\frac{3}{24}=\frac{1}{8}$
Remaining work = $1-\frac{1}{8}=\frac{7}{8}$
(A + B)'s 1 day work = $\frac{1}{18}+\frac{1}{24}=\frac{7}{72}$
Time required to complete $\frac{7}{8}$th work by A and B together = $\frac{7}{8}\div\frac{7}{72}=9$ day
Total time required to complete whole work
= 9 + 3 days = 12 days

**42. (d);** Let principle is Rs. x
So interest = $\frac{7x}{2}-x=\frac{5}{2}x$
Time = 10 year
$I=\frac{P\times T\times R}{100}$
$\frac{5}{2}x=\frac{x\times 10\times R}{100}$
R = 25%

**43. (a);** Required probability = $\frac{{}^5C_1\times{}^7C_1+{}^7C_2\times{}^5C_0}{{}^{12}C_2}$
$=\frac{35+21}{66}=\frac{56}{66}=\frac{28}{33}$

**44. (c);** Let length of train = x meter
$x=30\times 54\times\frac{5}{18}=450$ meter
Time required to cross the platform
$=\frac{450+180}{54\times\frac{5}{18}}=\frac{630}{15}=42$ sec

**45. (b);** Let initial quantity of water = 8x liter
So initial quantity of milk = 5x liter
ATQ,
$\frac{5x+6}{8x}=\frac{7}{8}\Rightarrow x=3$
So initial quantity of mixture = (5 + 8) × 3 = 39 liter

**46. (b);** $\frac{56}{100}\times 350+\frac{48}{100}\times 550-15\times 2.4=?$
$?=196+264-36=424$

**47. (c);** $\Rightarrow (64)^{\frac{1}{2}}\times(32)^{\frac{7}{5}}-\frac{?}{100}\times 15=28^2$
$\Rightarrow 8\times 128-784=15\times ?$
$?=16$

**48. (e);** $?\times\frac{69}{11}\times\frac{55}{23}=\frac{18}{100}\times 1500$
$?=\frac{18\times 1500\times 11\times 23}{69\times 55\times 100}$
$?=18$

**49. (b);** $?\%\text{ of }960=36^2-\frac{576}{18}-32^2$
$?\%\text{ of }960=1296-32-1024$
$?=\frac{240\times 100}{960}=25$

**50. (d);** $?^3=11.2\times 15+6.4\times 7.5$
$?^3=168+48$
$?=\sqrt[3]{216}=6$

**51. (b);** Total rooms booked in Oberai on Tuesday and Thursday = 280 + 520 = 800
Total rooms books in Grand on Monday and Thursday = 280 + 720 = 1000

Required percentage $= \frac{1000-800}{1000} \times 100 = 20\%$

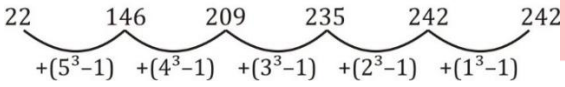
**52. (d);** Total rooms booked in Oberai, Lodhi and Taj on Monday
$= 360 + 260 + 640 = 1260$
Total rooms booked in Taj, Grand and Eros on Thursday
$= 375 + 720 + 275 = 1370$
Required difference $= 1370 - 1260 = 110$

**53. (a);** Total room booked in Eros on Wednesday and Thursday $= 265 + 275 = 540$
Total rooms booked in Lodhi on Thursday and Friday $= 215 + 305 = 520$
Required ratio $= 540 : 520$
$= 27 : 26$

**54. (c);** Average of room booked in Eros on Monday, Wednesday and Friday
$= \frac{155+265+315}{3} = 245$
Average of room booked in 'Grand' on Monday & Friday $= \frac{280+220}{2} = 250$
Required sum $= 245 + 250 = 495$

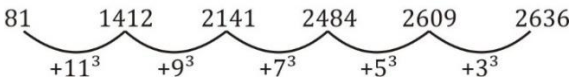
**55. (e);** Required percent $= \frac{480-360}{360} \times 100 = 33\frac{1}{3}\%$

**56. (e);**

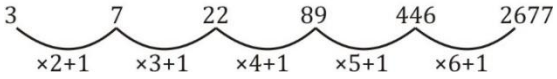



**57. (c);**

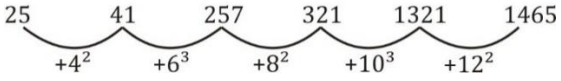

**58. (b);**




**59. (a);**




**60. (b);**




**61. (c);** Let present age of Mohit $= 3x$
So the present age of Ankit $= 4x$
ATQ,
$\frac{3x+6}{4x+6} = \frac{4}{5}$ $x = 6$
So difference of present age $= 4x - 3x$
$= (4 - 3) \times 6 = 6$ years

**62. (a);** Speed of boat in upstream $= 17$ kmph
Speed of river water $= 3$ kmph
So speed of boat in still water $= 17 + 3 = 20$ kmph
So speed of boat in downstream $= 20 + 3 = 23$ kmph

**63. (b);** Length of perimeter of circle $= 2\pi r$
$= 2 \times \frac{22}{7} \times 21$
$= 132$ cm
So side of square $= \frac{132}{4} = 33$ cm
$\therefore$ length of diagonal $= \sqrt{33^2 + 33^2}$
$= 33\sqrt{2}$ cm

**64. (e);** Sum of ages of 5 person A, B, C, D and E $= 37 \times 5$
$= 185$ years
Sum of ages of A and B $= 34 \times 2 = 68$ years
Sum of ages of C and D $= 40 \times 2 = 80$ years
So age of E $= 185 - 68 - 80$ years $= 37$ years

**65. (a);** Investment × time of A $= 5000 \times 12 = 60000$
Investment × time of B $= 8000 \times 6 = 48000$
So profit share ratio of A to B
A : B $= 60000 : 48000$
$= 5 : 4$
So profit of B $= \frac{4}{(5+4)} \times 7200 =$ Rs. 3200

**66. (b);** $\frac{318\times48}{?\times12} = 14^2 + 3^3 - 12.8 \times 5$
$\Rightarrow \frac{(318\times4)}{?} = 196 + 27 - 64$
$? = \frac{318\times4}{159} = 8$

**67. (d);** $? = 8 + \frac{7}{10} - 6 - \frac{3}{5} - 3 - \frac{4}{5} + 4 + \frac{4}{5}$
$= (8 - 6 - 3 + 4) + \left(\frac{7}{10} - \frac{3}{5} - \frac{4}{5} + \frac{4}{5}\right)$
$= (3) + \left(\frac{7-6-8+8}{10}\right)$
$= 3\frac{1}{10}$

**68. (a);** $\sqrt{?} = -18^2 + 526 + 344 - 532$
$\sqrt{?} = -324 + 870 - 532$
$\sqrt{?} = 14$
$? = 196$

**69. (e);** $\frac{55}{100} \times 540 + \frac{1}{3} \times 183 + \sqrt{?} = 361$
$\sqrt{?} = 361 - 297 - 61$
$\sqrt{?} = 3$
$? = 9$

**70. (a);** $? = 17 \times 6 - 75 - 34 + 23$
$? = 102 - 75 - 34 + 23$
$? = 16$

**71. (b);** $4\frac{7}{12} + 6\frac{5}{6} - 8\frac{3}{4} = ? + 1\frac{2}{3}$
$? = 4 + 6 - 8 - 1 + \left(\frac{7}{12} + \frac{5}{6} - \frac{3}{4} - \frac{2}{3}\right)$
$= 1 + \left(\frac{7+10-9-8}{12}\right)$
$= 1 + (0) = 1$

**72. (d);** $25.4 \times 8 + 49.7 \times 4 + ? = (22)^2$
$203.2 + 198.8 + ? = 484$
$? = 82$

**73. (e);** $645 + 456 - 987 - \sqrt{?} = (3)^4$
$114 - 81 = \sqrt{?}$
$? = 33^2$
$= 1089$

**74. (c);** $810 - 756 + ? = \frac{10.5}{100} \times 1050$
$54 + ? = 110.25$
$? = 56.25$

**75. (a);** $333 \div 3 + 752 \div 16 + ? = 32 \times 20$
$111 + 47 + ? = 640$
$? = 482$

**76. (c);** Principle = Rs. 2000

$\text{Amount} = 2000\left(1 + \frac{20}{2\times100}\right)^{\frac{3}{2}\times2}$

$= 2000\left(1 + \frac{1}{10}\right)^3$

= Rs. 2662

So interest = 2662-2000= Rs. 662

**77. (d);** Let the full marks of exam = x

ATQ

$222 + 8\%\text{ of } x = 204 + 11\%\text{ of } x$

$18 = 3\%\text{ of } x$

$x = 600$

So full marks = 600

So passing marks = 222 + 8% of 600 = 270 marks

**78 (a);** $\text{Speed of train} = \frac{\text{Length}}{\text{Time}}$

$\text{Speed} = \frac{570}{38} = 15\text{ m/sec}$

$\text{Time required in crossing} = \frac{570+660}{15} = 82\text{ sec}$

**79. (b);** Tank P can fill tank in 12 hours

So P's one hour work $= \frac{1}{12}$

Tank Q can fill tank in 15 hours

So Q's one hour work $= \frac{1}{15}$

(P + Q)'s one hour work $= \frac{1}{12} + \frac{1}{15} = \frac{9}{60}$

So both together can fill tank in $\frac{60}{9} = 6\frac{2}{3}$ hours

**80. (d);** The letter NOUVEAU has 7 letter

In these 7 letters V occurs twice

So no. of ways of arrangement $= \frac{7!}{2!} = 2520$

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## REASONING ABILITY

**Directions (1-5):** Study the following arrangement carefully and answer the following questions given below:

Six persons A, B, C, D, E and F are going on a holiday to different places in different months of the same year. The places are Guwahati, Delhi, Chennai, Bhopal, Shimla and Mumbai in the months are February, March, April, June, October, December, but not necessarily in the same order.

E is going to Guwahati. C is going in October. Only two persons are going between B and F, who is going to Shimla. B goes just before E. A is going before D. D or B is not going to Mumbai or Chennai. C is not going to Mumbai or Bhopal. A is not going to Chennai. The one who is going to Bhopal does not go just before E. The one who is going to Mumbai does not going in February.

**1.** Who among the following is going in March Month?
(a) A (b) B (c) C
(d) D (e) E

**2.** Who among the following is going to Bhopal?
(a) A (b) B (c) C
(d) D (e) None of these

**3.** A is going to which place?
(a) Delhi (b) Mumbai (c) Chennai
(d) Bhopal (e) None of these

**4.** Which among the following combination is correct?
(a) March-F (b) June-D (c) April-A
(d) February-E (e) None of these

**5.** How many person(s) going in between E and the one who is going to Mumbai?
(a) One (b) Two (c) Three
(d) Four (e) None

**Directions (6-10):** In each of the questions below. Some statements are given followed by conclusions/group of conclusions numbered I and II. You have to assume all the statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given two conclusions logically follows from the information given in the statements.
(a) If only conclusion I follows
(b) If only conclusion II follows
(c) If either I or II follows
(d) If neither I nor II follows
(e) If both I and II follow

**6.** **Statements:** Some date are clock. Some clock are time. No hour is date
**Conclusions: I.** Some Clock are hour
**II.** No hour is time

**7.** **Statements:** All yellow are blue. Some blue are red. All blue are green.
**Conclusions: I.** Some green can be red
**II.** All yellow are green

**8.** **Statements:** Some book are bell. All box are belt. Some bell are box.
**Conclusions: I.** Some book are belt
**II.** Some book are not belt.

**9.** **Statements:** Some road are sea. No road is track. No runway is track.
**Conclusions: I.** Some sea are not track
**II.** Some road are not runway

**10.** **Statements:** All hand are leg. No hand is mouth. All body is mouth.
Conclusions: **I.** Some leg are body
II. Some leg are not body.

**Directions (11-15):** Study the following arrangement carefully and answer the following questions given below:
**8 # ^ G 7 ^ L U $ W T 4 B % R ? F H * I 2 D 1 M P 5 @ Q 8 E 9 O 6**

**11.** Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not belong to that group?
(a) DP5 (b) #7^ (c) FI2
(d) PQ8 (e) QE9

**12.** How many such alphabets are there in the above arrangement each of which is immediately preceded by a symbol and immediately followed by a number?
(a) None (b) One (c) Two
(d) Three (e) More than three

**13.** Which of the following element is the seventh to the left of the sixth from the right end of the above arrangement?
(a) ^ (b) R (c) D
(d) * (e) 2

**14.** Which of the following is exactly between the element which is ninth from the right end and the one which is eleventh from the left end of the above arrangement?
(a) * (b) H (c) I
(d) 2 (e) #

**15.** If all the symbols are dropped from the above arrangement, which among the following will be the ninth to the left of P?
(a) U (b) W (c) 4
(d) T (e) B

**Directions (16-20):** Study the following arrangement carefully and answer the following questions given below:

There are Eight persons A, B,C, D, E, F, G and H going for a vacation on 19th or 28th of the following month i.e. March, June , August , November but not necessarily in the same order. Only one person is going on each date. A goes on 28th of the month which is having 31 days. D goes immediately before H. Two people go in between A and H. F goes on the day immediate before G. B goes on 19th of the month which is having 31 days and three people are going in between B and G. No one goes after C.

**16.** Who among the following goes on 19th of August?
(a) B (b) F (c) H
(d) G (e) E

**17.** E goes on which date?
(a) 19 March (b) 28 June (c) 19 November
(d) 28 August (e) None of these

**18.** How many persons go on holiday between E and H?
(a) three (b) two (c) one
(d) four (e) Five

**19.** Who among the following goes on 28th June?
(a) B (b) A (c) D
(d) E (e) F

**20.** Who among the following go to holiday in between G and H?
(a) A (b) F (c) B
(d) None of these (e) E

**Directions (21-25):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**21.** **Statements:** J>X≤ O ≤ R =M> V > L
Conclusions: **I.** M< J **II.** X> V

**22.** **Statements:** A ≤N≤ C = O≤W≥J= E
**Conclusions:** **I.** W< A **II.** W= E

**23.** **Statements:** U≥ I =V> B ≥R> E < O
**Conclusions:** **I.** U>R **II.** V> E

**24.** **Statements:** L= O ≥ P ≤A≤ D= R ≥B
**Conclusions:** **I.** P≤R **II.** B≤L

**25.** **Statements:** J < Y > O ≥ Z ≥ E = U ≥ T
**Conclusions:** **I.** U < Y **II.** T ≤ J

**26.** In a class, there are 45 students, Rahul is at 23rd rank from bottom and there are eleven students between Saurabh and Rahul. Saurabh is above Rahul . Now, what is the rank of Saurabh from top?
(a) 10 (b) 11 (c) 13
(d) 12 (e) 15

**Directions (27-28):** Study the following arrangement carefully and answer the following questions given below:

In a family of seven members X is brother of Z who is paternal grandmother of G. E is sister of G and daughter of J who is mother-in-law of K. J has two children and only one daughter. K is daughter-in-law of L.

**27.** How is E related to L?
(a) Sister
(b) Daughter
(c) Daughter-in-law
(d) Niece
(e) None of these

**28.** What is the relation of L with X?
(a) Nephew (b) Brother (c) Cousin
(d) Father (e) None of these

**29.** In a certain code 'ROAM' is written as '5913' and 'DONE' is written as '4962'. How is 'RANDOM' written in that code?
(a) 514639 (b) 564193 (c) 516493
(d) 546193 (e) 516913

**30.** A man walks 10 m straight turns right and walks 5 m again walks 20 m after turning right and stops there facing South. What is his direction when he starts walking?
(a) South (b) West (c) North
(d) East (e) Cannot be determined

**Directions (31-35):** Study the given information carefully to answer the given questions.

Eight persons A1, A2, A3, A4, A5, A6, A7 and A8 sitting around a circular table facing center, but not necessarily in the same order.

Two persons sit between A3 and A6. A4 sits to the immediate right of A6. A1, who is an immediate neighbor of A3, sits third to the left of A2. A3 does not sit opposite to A2. A7 is neither an immediate neighbor of A2 nor A1. A8 sits to the immediate right of A7.

**31.** Who among the following sits third to the left of one who sits second to the right of A4?
(a) A3 (b) A6 (c) A1
(d) A5 (e) A7

**32.** Which statement among the following is true about A2?
(a) A7 sits opposite to A2
(b) A6 sits immediate left of A2
(c) A3 sits second to the left of A2
(d) Only two persons sit between A2 and A4
(e) None is true

**33.** Who sits opposite to A8?
(a) A1 (b) A3 (c) A5
(d) A2 (e) None of these

**34.** Who among the following sits exactly between A1 and A5 when counted from the right of A1?
(a) A6 (b) A2 (c) A3
(d) A4 (e) A7

**35.** Who among the following sits second to the right of A1?
(a) A8 (b) A2 (c) A3
(d) A4 (e) A5

**Directions (36-40):** Study the given information carefully to answer the given questions.

In a certain code language,
'teachers to check exams' is written as 'es fr jd pt',
'check done in night' is written as 'ch dh mo fr',
'done to allot persons' is written as 'jd dv ch gi' and
'allot chairman in check' is written as 'mo gi fr ox'.

**36.** What is the code for 'night' in the given code language?
(a) mo
(b) ox
(c) ch
(d) Other than those given as options
(e) dh

**37.** In the given code language, what does the code 'pt' stand for?
(a) allot
(b) Either 'exams' or 'teachers'
(c) night
(d) check
(e) Either 'for' or 'persons'

**38.** What may be the code for 'check call' in the given code language?
(a) dv iq (b) iq gi (c) iq fr
(d) gi es (e) fr dv

**39.** What is the code for 'to' in the given code language?
(a) mo (b) fr (c) gi
(d) dv (e) jd

**40.** If 'allot new persons' is coded as 'dv wzgi' in the given code language, then what is the code for 'new chairman done'?
(a) wz ch es (b) ch wz ox (c) ox mo wz
(d) fr es wz (e) ch ox fr

## QUANTITATIVE APTITUDE

**41.** Simple interest on a certain sum at the rate of $16\frac{2}{3}\%$ per annum for three years is Rs. 1250. Find the sum.
(a) Rs. 3,000 (b) Rs. 2,500 (c) Rs. 2,400
(d) Rs. 4,000 (e) Rs. 5,000

**42.** A fraction becomes $\frac{5}{3}$ when 20% of numerator is added to its numerator and 30% of denominator is subtracted from its denominator. Find the fraction.
(a) $\frac{35}{36}$ (b) $\frac{36}{25}$ (c) $\frac{33}{35}$
(d) $\frac{27}{35}$ (e) $\frac{35}{33}$

**43.** Rajjo borrows Rs. 6300 from PNB on compound intrest at the rate of $33\frac{1}{3}\%$ p.a. for two years. Find the total interest given by Rajjo to the bank after 2 years
(a) Rs.4,100 (b) Rs.3,900 (c) Rs.4,900
(d) Rs.4,600 (e) Rs. 4,500

**44.** Raheem spends 36% of his monthly income on daily spendings, 40% on house rent and children fee together and rest amount he saves for future needs. If his total savings be Rs. 14,400. Find his total monthly income.
(a) Rs. 45,000 (b) Rs. 40,000 (c) Rs. 48,000
(d) Rs. 60,000 (e) Rs. 55,000

**45.** The population a city after three years will be 21,600. If rate of increase of population per year be 20% then find the present population of the city.
(a) 12,500 (b) 16,500 (c) 14,500
(d) 10,500 (e) 11,600

**Directions (46-50):** In the following questions two quantities are given for each question. Compare the numeric value of both the quantities and answers accordingly

**46.** Ram invested Rs80000 for a year and Shyam invested Rs72000 For 8 months.
**Quantity I :** If total profit at the end of year is Rs11400 then the share of Ram.
**Quantity II :** Rs. 1420
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established

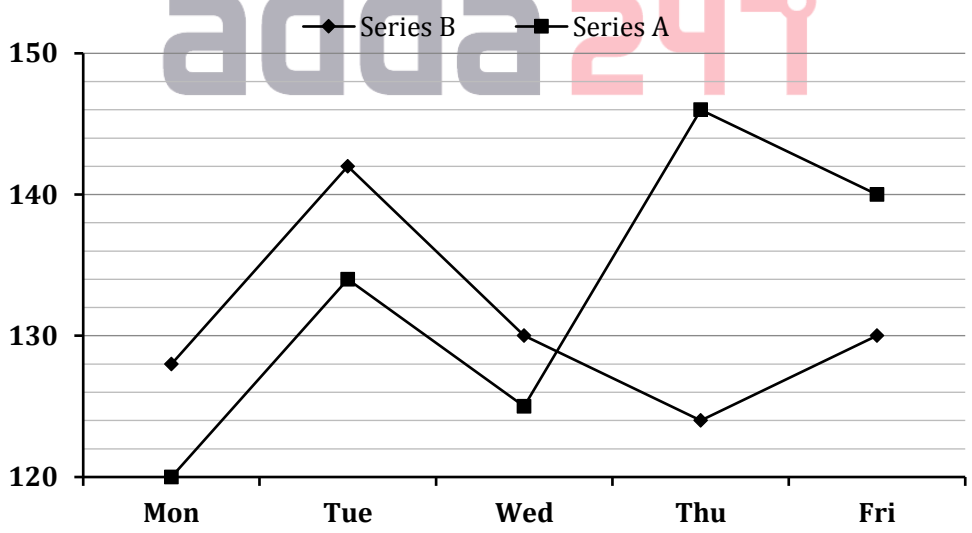
**47.** 24 men can do a work in 20 days and 36 women can do the same work in 24 days
**Quantity I :** Time taken by 12 man to comfortable whale work
**Quantity II :** Time taken by 16 women to complete whole work.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established

**48.** Average age of A, B and C is 37 years and average age of A and B is 23 years
**Quantity I :** What is the age of C
**Quantity II :** 65 years
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established

**49.** A train of length 360 m is travelling at a speed of 54 km/sec
**Quantity I :** Find the time take by train do cross a pole
**Quantity II :** If its speed is increased by $16\frac{2}{3}\%$ then find the time is which it can cross a platform of length 130 m
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established

**50.** **Quantity I :** A sphere of diameter 13.4 cm is melted and cast into a right circular cone of height 26.8 cm. The radius of the base of the cone is ?
**Quantity II:** 5.95 cm.
(a) Quantity I > Quantity II
(b) Quantity II > Quantity I
(c) Quantity I ≥ Quantity II
(d) Quantity II ≥ Quantity I
(e) Quantity I = Quantity II or relation can't be established

**Directions (51-55):** Given below is the line graph which shows the numbers of shoes sold by two stores A and B is 5 different days of the week.




**51.** Find the difference between total shoes sold by both store on Monday and an Wednesday
(a) 10 (b) 8 (c) 9
(d) 7 (e) 5

**52.** Total shoes sold by store A on Tuesday and Friday together is what percent more or less than shoes sold by store B on Wednesday and Friday together.
(a) $5\frac{3}{13}\%$ (b) $5\frac{5}{7}\%$ (c) $5\frac{4}{13}\%$
(d) $5\frac{5}{13}\%$ (e) $5\frac{4}{7}\%$

**53.** What is the average of shoes sold by store A on Tuesday, Wednesday and Friday
(a) 131 (b) 133 (c) 132
(d) 130 (e) 138

**54.** What is the ratio of shoes sold by both stores on Thursday to shoes sold by both stores on Friday
(a) 4 : 5 (b) 2 : 3 (c) 1 : 1
(d) 3 : 2 (e) 5 : 4

**55.** What is number of ladies shoes sold by store A on Wednesday if ratio of shoes sold for gents to ladies is 2 : 3?
(a) 65 (b) 70 (c) 75
(d) 80 (e) 85

**Directions (56 - 60):** What will come in place of (?) in the following number series?

**56.** 4.7, 12.7, 28.7, 60.7, ?, 252.7
(a) 124.7 (b) 188.7 (c) 92.7
(d) 122.7 (e) 118.4

**57.** 1, 4, 14, 45, 139, ?
(a) 281 (b) 422 (c) 421
(d) 140 (e) 424

**58.** 5, 16, 32, 55, 87, ?
(a) 126 (b) 128 (c) 132
(d) 130 (e) 135

**59.** 440, 624, 840, 1088, 1368, ?
(a) 1520 (b) 1848 (c) 1680
(d) 2024 (e) 2400

**60.** 981, 961, 936, 906, 871, ?
(a) 824 (b) 813 (c) 826
(d) 831 (e) 821

**61.** Ratio between length of trains A and B is 3 : 5. Speed of train A is 72 km/h and that of train B is 54 km/h & they are running opposite to each other. If train A crosses train B in 16 seconds then find length of train B.
(a) 350 m (b) 250 m (c) 450 m
(d) 150 m (e) 320 m

**62.** Ramesh and Ramu enter into a partnership with their initial sum Rs. 36000 and Rs. 48000 respectively. After 6 months, a third person Keshav also joins them with his initial sum Rs. 24000. After a year if total profit is Rs. 6400 then find the profit share of Ramu.
(a) Rs. 3000 (b) Rs. 2300 (c) Rs. 3200
(d) Rs. 2800 (e) Rs. 3600

**63.** The sum of present age of P and Q is 54 years. After 4 years, ratio of their ages will be 2 : 3. Find the present age of P.
(a) 25.2 years (b) 24.6 years (c) 21.8 years
(d) 20.8 years (e) 22.6 years

**64.** In how many different ways the letters of the word 'GAGUAR' can be arranged?
(a) 220 (b) 180 (c) 60
(d) 120 (e) 160

**65.** A dice is thrown up find the probability of getting an odd no. on the upper face.
(a) 3/4 (b) 2/3 (c) 1/2
(d) 5/6 (e) 1/3

**Directions (66-70):** In the following questions there are two equations given. You have to solve both the equations and give answer:
(a) if x > y
(b) if x < y
(c) if x ≥ y
(d) if x ≤ y
(e) if x = y or relation between x and y cannot be established

**66.** **I.** $x^2 + 9x - 22 = 0$ **II.** $2y^2 - 7y + 6 = 0$
**67.** **I.** $2y^2 - 13y - 34 = 0$ **II.** $3x^2 - 11x - 20 = 0$
**68.** **I.** $x^4 = 256$ **II.** $y^2 - 16y + 64 = 0$
**69.** **I.** $x^2 - 46x + 528 = 0$ **II.** $y^2 - 48y + 572 = 0$
**70.** **I.** $2x + 3y = 4$ **II.** $4x + 5y = 6$

**Directions (71-80):** Simplify the following problems.

**71.** $(841 \div 29) + (34 \times 5) - (23 \times 5) = ?$
(a) 88 (b) 81 (c) 84
(d) 78 (e) 72

**72.** $?^2 = 40\%$ of $420 + 44\%$ of $200$
(a) 24 (b) 12 (c) 8
(d) 16 (e) 416

**73.** $343 + 243 + 512 = 20\%$ of ?
(a) 4590 (b) 5490 (c) 6490
(d) 6140 (e) 5290

**74.** $(0.3)^3 \times (0.09) \times (0.027) = (0.0081)^{?+2}$
(a) 0 (b) 1 (c) 2
(d) 3 (e) 4

**75.** $\sqrt[3]{1728} + \sqrt{784} + \sqrt{1296} = ? + \sqrt[3]{512}$
(a) 86 (b) 68 (c) 74
(d) 72 (e) 64

**76.** 13% of 400 + 17% of 500 =? + 44% of 625
(a) –138 (b) 138 (c) –136
(d) 136 (e) –134

**77.** 24% of 125 + 48% 150 =?
(a) 106 (b) 108 (c) 104
(d) 112 (e) 102

**78.** $2\frac{1}{3}$ of $4\frac{2}{7}$ of $3\frac{1}{3}$ of 81 =?
(a) 2900 (b) 2500 (c) 2700
(d) 2300 (e) 2400

**79.** $90 \times 70 \div 14 + 13 - 28 = ? - 30\%$ of $250$
(a) 410 (b) 510 (c) 610
(d) 710 (e) 530

**80.** $3\frac{1}{2} + 4\frac{3}{4} - 4\frac{3}{5} = ? - 5\frac{1}{2}$
(a) $9\frac{3}{20}$ (b) $6\frac{2}{5}$ (c) $11\frac{3}{20}$
(d) $12\frac{3}{20}$ (e) $9\frac{3}{10}$

# Mock 19 : Solutions

## REASONING ABILITY

**Directions (1-5):**
E is going to Guwahati. C is going in October. Only two persons are going between B and F, who is going to Shimla. B goes just before E. A is going before D. There are two possible cases---

| Case-1 | | |
|---|---|---|
| **Month** | **Person** | **Place** |
| February | B | |
| March | E | Guwahati |
| April | A | |
| June | F | Shimla |
| October | C | |
| December | D | |

| Case-2 | | |
|---|---|---|
| **Month** | **Person** | **Place** |
| February | A | |
| March | D | |
| April | B | |
| June | E | Guwahati |
| October | C | |
| December | F | Shimla |

D or B is not going to Mumbai or Chennai. C is not going to Mumbai or Bhopal. A is not going to Chennai. The one who is going to Bhopal not going just before E.The one who is going to Mumbai does not going in February. This will eliminate case-2. Final arrangement will be----

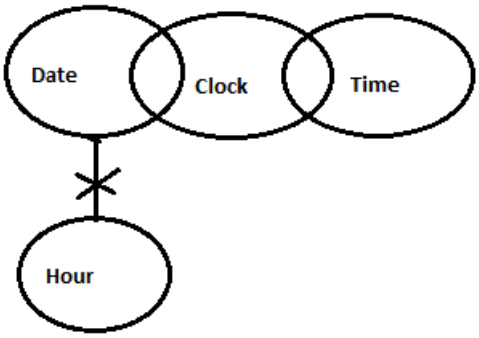
| Month | Person | Place |
|---|---|---|
| Feb | B | Delhi |
| March | E | Guwahati |
| April | A | Mumbai |
| June | F | Shimla |
| October | C | Chennai |
| December | D | **Bhopal** |

**1. (e);** **2. (d);** **3. (b);**

**4. (c);** **5. (e);**

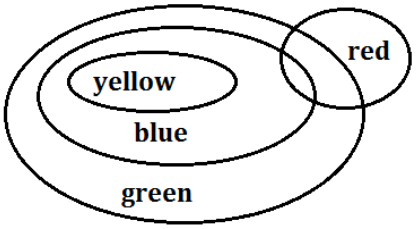
**Directions (6-10)**

**6. (d);**



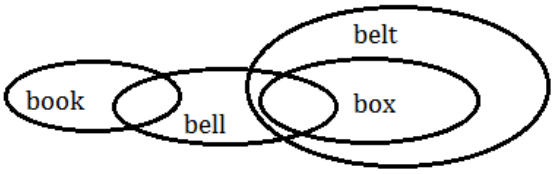

For-I False, as there is no relation between elements clock and hour.
For-II False, as there is no relation between elements time and hour.

**7. (b);**



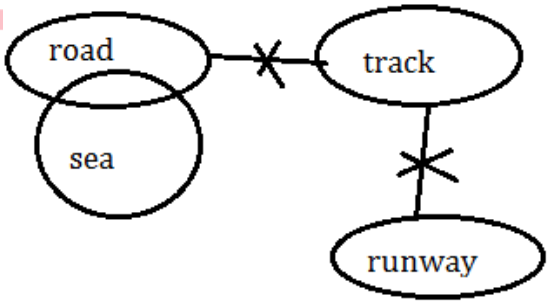

For-I False because from venn diagram it is a definite case. Hence possibility case will not hold true.
For-II True. Since all yellow are blue and all blue are green, All yellow are green can be concluded.

**8. (c);**



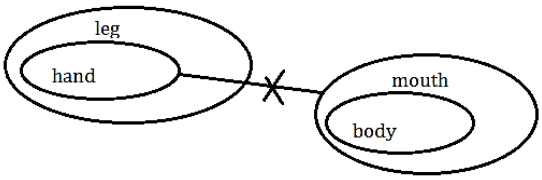

For-I False, as there is no direct relation between book and belt,
For-II False, as there is no direct relation between book and belt.
Since the subject and predicate in both the conclusions are same and it is the case of some and some not, therefore it will be either and or .

**9. (a);**




For-I True, as some sea are road and no road is track therefore, Some sea are not track.
For-II False, as there is no direct relation between road and runway.

**10. (b);**



For-I False, as there is no direct relation between leg and body.
For-II Since Some part of leg which is hand cannot be body. Therefore, conclusion II is true.

**Directions (11-15):**

**11. (e); 12. (d); 13. (e);**

**14. (b); 15. (e);**

**Directions (16-20):**

A goes on 28th of the month which is having 31 days. D goes immediately before H. Two people go in between A and H. B goes on 19th of the month which is having 31 days and three people are going in between B and G. No one goes after C. So, there are two possible cases----

**Case 1**

| | 19 | 28 |
|---|---|---|
| March (31) | B | A |
| June (30) | | D |
| August (31) | H | G |
| November (30) | | C |

**Case 2**

| | 19 | 28 |
|---|---|---|
| March (31) | B/G | D |
| June (30) | H | |
| August (31) | B/G | A |
| November (30) | | C |

F goes on the day immediate before G. By this condition case 2 will be cancelled and G goes on 19th of August.

| 0 | 19 | 28 |
|---|---|---|
| March (31) | B | D |
| June (30) | H | F |
| August (31) | G | A |
| November (30) | E | C |

**16. (d); 17. (c); 18. (a);**

**19. (e); 20. (b);**

**Directions (21-25):**

**21. (d); I.** M < J (False) **II.** X > V(False)

**22. (d); I.** W < A (False) **II.** W = E (False)

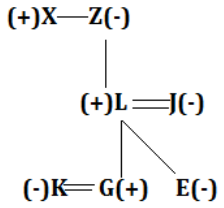
**23. (e); I.** U > R (True) **II.** V > E (True)

**24. (a); I.** P ≤ R (True) **II.** B ≤ L (False)

**25. (a); I.** U < Y (True) **II.** T ≤ J (False)

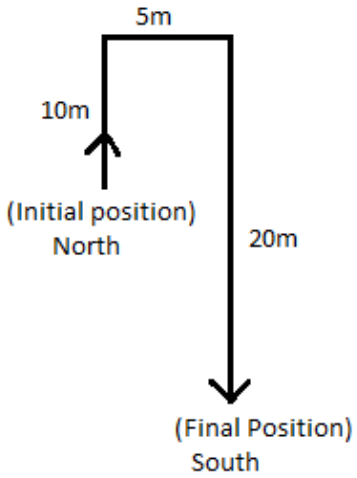
**26. (b);** Saurabh's rank from bottom = (23+12)=35
From top = (45-35+1) = 11

**Directions (27-28):**




**27. (b); 28. (a); 29. (c);**

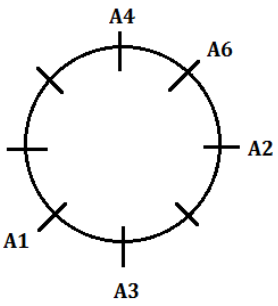
**30. (c);**



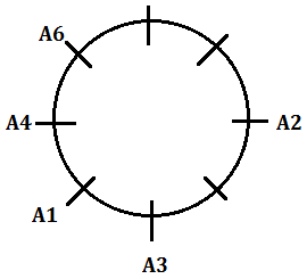

**Directions (31-35):**

Two persons sit between A3 and A6. A4 sits to the immediate right of A6. A1, who is an immediate neighbor of A3, sits third to the left of A2. A3 does not sit opposite to A2. So, there will be two possible cases----

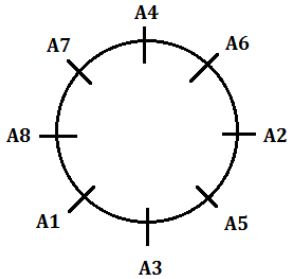
**Case-1**




**Case-2**




A7 is neither an immediate neighbor of A2 nor A1. A8 sits to the immediate right of A7.This will eliminate case 2. Final arrangement will be---




**31. (b); 32. (c); 33. (d);**
**34. (c); 35. (e);**

**Solutions (36-40):**

| Word | Code |
|---|---|
| check | Fr |
| done | Ch |
| In | Mo |
| To | Jd |
| Allot | Gi |

| | |
|---|---|
| Chairman | Ox |
| Night | Dh |
| Persons | Dv |
| Teacher/exam | Es/pt |

**36. (e); 37. (b); 38. (c);**

**39. (e); 40. (b);**

## QUANTITATIVE APTITUDE

**41. (b);** Let sum = Rs. P $\because 16\frac{2}{3}\% = \frac{50}{3}\%$

$\therefore 1250 = \frac{P\times3\times50}{100\times3}$

$\therefore$ P = 2,500

**42. (a);** Let fraction = $\frac{p}{q}$

ATQ, $\frac{p+\frac{20}{100}\times p}{q-\frac{30}{100}\times q} = \frac{5}{3}$

$\Rightarrow \frac{\frac{6p}{5}}{\frac{7q}{10}} = \frac{5}{3} \Rightarrow \frac{12p}{7q} = \frac{5}{3} \Rightarrow \frac{p}{q} = \frac{35}{36}$

**43. (c);** Required C.I. paid by Rajjo to PNB

$= 6300\left[\left(1+\frac{100}{300}\right)^2 - 1\right] = 6300 \times \frac{7}{9} = 4900$

**44. (d);** Savings of Raheem = 100 – (36 + 40) = 24%

ATQ, 24% → 14,400

$\Rightarrow 100\% \rightarrow \frac{14400}{24} \times 100$ = Rs. 60,000

**45. (a);** Let present population = P

$\therefore 21{,}600 = P\left(1+\frac{20}{100}\right)^3$

$\Rightarrow P = \frac{21{,}600\times125}{216} \Rightarrow P = 12{,}500$

**46. (a);** Ratio of Investment of Ram and Shyam

$= 10 \times 12 : 9 \times 8 = 5 : 3$

**Quantity I:**

Share of profit of Ram $= \frac{5}{8} \times 11400$

$= 1425\times 5$= Rs. 7125

**Quantity II:**

Rs 1420

So,

**Quantity I > Quality II**

**47. (b); Quantity I:**

Time take by 12men $24 \times \frac{20}{12} = 40$ day

**Quantity II:**

Time have by 16 women $= \frac{36\times24}{16}$ 48 day

**Quantity by II > Quantity I**

**48. (e); Quantity I**

Sum of age of all = 37× 3 = 46 years

Sum of C = (111-46) Years = 65 years

**Quantity II = Quantity I**

**49. (b); Quantity I:**

Time taken to cross the pale $= \frac{360}{54\times\frac{5}{18}}$ sec = 24 sec

**Quantity II:**

Increased speed $= \frac{7}{6} \times 54 = 63$km/hr

Required time $= 360 + \frac{130}{63\times\frac{5}{18}} = \frac{490}{7\times\frac{5}{2}}$

$= \frac{70\times2}{5} = 28$ sec

**Quantity II > Quantity I**

**50. (a); Quantity I:**

$\frac{4}{3}\times\pi\times6.7\times6.7\times6.7 = \frac{1}{3}\times\pi\times r^2\times26.8$

$\Rightarrow$ r = 6.7 cm

**Quantity II:**

5.95 cm

Quantity I > Quantity II

**51. (d);** Total shoes sold on Monday = 128 + 120 = 248

Total shoes sold on Wednesday = 130 + 125 = 255

Required difference = 255 – 248 = 7

**52. (d);** Total shoes sold by A on Tuesday and Friday = 134 + 140 = 274

Total shoes sold by B on Wednesday and Friday = 130 + 130 = 260

= Required percent = $274 - \frac{260}{260}\times100$

$= \frac{14}{260}\times100 = 5\frac{5}{13}\%$

**53. (b);** Required average $= \frac{134+125+140}{3} = \frac{399}{3} = 133$

**54. (c);** Required ratio = (146 +124) : 140 + 130

= 270 : 270 = 1 : 1

**55. (c);** Number of ladies shoes sold $= \frac{3}{5}\times125 = 75$

**56. (a);** Series is

4.7 + 8 = 12.7

12.7 + 16 = 28.7

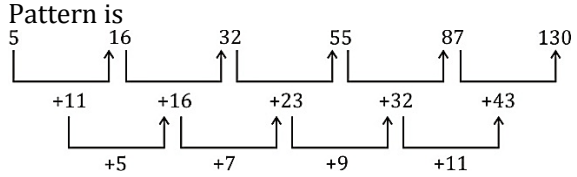
28.7 + 32 = 60.7

60.7 + 64 = 124.7

124.7 + 128 = 252.7

**57. (b);** Series is $1 \times 3 + 1 = 4$
$4 \times 3 + 2 = 14$
$14 \times 3 + 3 = 45$
$45 \times 3 + 4 = 139$
$139 \times 3 + 5 = 422$

**58. (d);** Pattern is




**59. (c);** Series is
$21^2 - 1 = 441 - 1 = 440$
$25^2 - 1 = 625 - 1 = 624$
$29^2 - 1 = 841 - 1 = 840$
$33^2 - 1 = 1089 - 1 = 1088$
$37^2 - 1 = 1369 - 1 = 1368$
$41^2 - 1 = 1681 - 1 = 1680$

**60. (d);** $981 - 20 = 961$
$961 - 25 = 936$
$936 - 30 = 906$
$906 - 35 = 871$
$871 - 40 = 831$

**61. (a);** Let length of train A = 3x
Length of train B = 5x
Speed of train A = $72 \times \frac{5}{18} = 20$ m/sec
Speed of train B = $54 \times \frac{5}{18} = 15$ m/sec
ATQ,
$\frac{8x}{20+15} = 16 \Rightarrow x = 70$
∴ Length of train B = $5 \times 70 = 350$ m

**62. (c);** (Profit of Ramesh) : (Profit of Ramu) : (Profit of Keshav)
$= 36000 \times 12 : 48000 \times 12 : 24000 \times 6$
$= 3 : 4 : 1$
∴ Profit of Ramu = $\frac{4}{8} \times 6400 =$ Rs. 3200

**63. (d);** Let the present age of P and Q is P years and Q years respectively
$P + Q = 54$ ... (i)
And, $\frac{P+4}{Q+4} = \frac{2}{3}$
$\Rightarrow 3P + 12 = 2Q + 8$
$\Rightarrow 3P - 2Q = -4$ ... (ii)
Solving equation (i) and (ii)
$(P + Q = 54) \times 2$
$3P - 2Q = -4$
$5P = 104 \Rightarrow P = 20.8$ years

**64. (b);** Total no. of ways = $\frac{6!}{2!\times 2!}(\because 2A \,\&\, 2G) = 180$

**65. (c);** Favourable cases = (1, 3, 5) = 3
Possible cases = 6
∴ Required probability = $\frac{3}{6} = \frac{1}{2}$

**66. (e);** **I.** $x^2 + 9x - 22 = 0$
$\Rightarrow x^2 + 11x - 2x - 22 = 0$
$\Rightarrow (x + 11)(x - 2) = 0$
$\Rightarrow x = -11, 2$
**II.** $2y^2 - 7y + 6 = 0$
$\Rightarrow 2y^2 - 4y - 3y + 6 = 0$
$\Rightarrow 2y(y-2) - 3(y-2) = 0$
$\Rightarrow (y-2)(2y-3) = 0$
$\Rightarrow y = 2, \frac{3}{2}$
No relation

**67. (e);** **I.** $2y^2 - 13y - 34 = 0$
$\Rightarrow 2y^2 - 17y + 4y - 34 = 0$
$\Rightarrow y(2y-17) + 2(2y-17) = 0$
$\Rightarrow (2y-17)(y+2) = 0$
$\Rightarrow y = \frac{17}{2}, -2$
**II.** $3x^2 - 11x - 20 = 0$
$\Rightarrow 3x^2 - 15x + 4x - 20 = 0$
$\Rightarrow 3x(x-5) + 4(x-5) = 0$
$\Rightarrow (x - 5)(3x + 4) = 0$
$\Rightarrow x = 5, \frac{-4}{3}$
No relation

**68. (b);** **I.** $x^4 = 256$
$\Rightarrow x = \pm 4$
**II.** $y^2 - 16y + 64 = 0$
$\Rightarrow (y - 8)^2 = 0 \Rightarrow y = 8$
$y > x$

**69. (e);** **I.** $x^2 - 46x + 528 = 0$
$\Rightarrow x^2 - 24x - 22x + 528 = 0$
$\Rightarrow (x-24)(x-22) = 0$
$\Rightarrow x = 24, 22$
**II.** $y^2 - 48y + 572 = 0$
$y^2 - 26y - 22y + 572 = 0$
$(y-26)(y-22) = 0$
$y = 26, 22$
No relation

**70. (b);** **I.** $2x + 3y = 4$
**II.** $4x + 5y = 6$
Solving eq. (I) and (II),
$(2x + 3y = 4) \times 2$
$4x + 5y = 6$
$y = 2$
Put $y = 2$ in eq. (I),
$2x + 6 = 4$
$\Rightarrow x = -1$
$y > x$

**71. (c);** $? = 29 + 170 - 115 = 84$

**72. (d);** $?^2 = \frac{40}{100} \times 420 + \frac{44}{100} \times 200$
$= 168 + 88 = 256 \Rightarrow ? = \pm 16$

**73. (b);** $\frac{20}{100} \times ? = 1098 \Rightarrow ? = 5490$

**74. (a);** $\frac{3^{4(?+2)}}{10^{4(?+2)}} = \frac{3^3 \times 3^2 \times 3^3}{10^3 \times 10^2 \times 10^3}$

$(0.3)^{4(?+2)} = \frac{3^8}{10^8} = (0.3)^8$

$\Rightarrow 4(? + 2) = 8 \Rightarrow ? = 0$

**75. (b);** $? = 12 + 28 + 36 - 8$

$= 76 - 8 = 68$

**76. (a);** $? = 13 \times 4 + 17 \times 5 - 44 \times \frac{625}{100}$

$= -138$

**77. (e);** $? = \frac{24}{100} \times 125 + \frac{48}{100} \times 150$

$= \frac{10200}{100} = 102$

**78. (c);** $? = \frac{7}{3} \times \frac{30}{7} \times \frac{10}{3} \times 81 = 2700$

**79. (b);** $? = 450 + 13 - 28 + 75 = 510$

**80. (a);** $? = (3 + 4 - 4 + 5) + (\frac{1}{2} + \frac{3}{4} - \frac{3}{5} + \frac{1}{2})$

$= 8 + \left(\frac{23}{20}\right) = 9\frac{3}{20}$

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## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

1. **Statements:** $M \geq V \geq I = O > E \leq T < H$
**Conclusions:** **I.** $E < M$ **II.** $O < H$

2. **Statements:** $W \leq A \leq C = H \leq M \leq U = L$
**Conclusions:** **I.** $L = A$ **II.** $A < L$

3. **Statements:** $T < I < P > L \geq E = X \geq Y$
**Conclusions:** **I.** $I > X$ **II.** $P > X$

4. **Statements:** $P > V \geq R = C \geq I < N = E$
**Conclusions:** **I.** $V > I$ **II.** $R < E$

5. **Statements:** $I > N = O \geq X = M \leq T \leq S$
**Conclusions:** **I.** $N > M$ **II.** $S \geq X$

**Directions (6-10):** These questions are based on the following set of numbers.
368 279 614 913 756

6. If all the digits in the number are rearranged in ascending order within itself, then which among the following will be the second lowest?
(a) 368 (b) 279 (c) 614
(d) 913 (e) 756

7. If in each number, the first and the third digits are interchanged, then which among the following number will be the highest?
(a) 368 (b) 279 (c) 614
(d) 913 (e) 756

8. What is the difference between the third digit of lowest number and first digit of the second highest number?
(a) 1 (b) 2 (c) 3
(d) 4 (e) None of these

9. If '2' is added to all the numbers, then which of the following will be the sum of the second and the third digit of the third highest number?
(a) 6 (b) 7 (c) 9
(d) 13 (e) 11

10. If in each number all the digits are arranged in descending order within itself, then what will be the difference between highest and the second highest number thus formed?
(a) 31 (b) 37 (c) 41
(d) 89 (e) 109

**Directions (11-15):** Study the information and answer the following questions:
Nine persons P, Q, R, S, T, U, V, W and X are sitting around a circular table facing inside (not necessarily in the same order).S sits second to the right of U. Only two persons sit between S and R. W is an immediate neighbor of T. Neither W nor T is an immediate neighbor of R or S. V sits third to the right of P. Only two persons sit between P and T. Q sits second to the left of R. Only one person sits between R and T.

11. Who among the following sits second to the left of V?
(a) Q (b) X (c) P
(d) S (e) None of these

12. Who among the following sits exactly between S and T when counted from left of S?
(a) P (b) W (c) U
(d) Q (e) R

13. Who sits fourth to the right of X?
(a) Q (b) S (c) P
(d) U (e) None of these

14. What is the position of W with respect of U?
(a) Immediate right
(b) Immediate left
(c) Second to the right
(d) Second to the left
(e) None of these

15. Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) R, X (b) Q, V (c) U, S
(d) T, W (e) V, R

**Directions (16-20):** Study the following information carefully to answer the given questions.
Six different sports viz. Cricket, Hockey, Football, Basketball, Volleyball and Badminton are to be organized on different days of the week starting from Monday to Sunday (but not necessarily in the same order). There will be no sport on one of the day of week.

More than two sports are organized between Badminton and Cricket and neither of them was on Monday. Basketball is organized on Thursday. Volleyball is organized immediately before Basketball. Football is not organized on one of the days after Hockey. There are as many sports between Basketball and Badminton as there are between Hockey and Volleyball. Sunday or Wednesday are not off days. Badminton is not organized after the off day.

**16.** Cricket was organized on which of the following day?
(a) Friday (b) Tuesday (c) Sunday
(d) Saturday (e) Monday

**17.** How many sports are organized between Volleyball and Cricket?
(a) Two (b) Three (c) Four
(d) Five (e) None of these

**18.** On which day no sport was organized?
(a) Tuesday (b) Friday (c) Monday
(d) Sunday (e) Saturday

**19.** Which of the following statement is true?
(a) Football was organized on Tuesday
(b) Badminton was organized on Saturday
(c) Hockey was organized before Basketball
(d) Football was organized before Badminton
(e) None of these

**20.** Hockey was organized on which day?
(a) Saturday (b) Friday (c) Tuesday
(d) Sunday (e) Monday

**Directions (21-23):** Study the following information and answer the given questions

Point P is 12m to the South of Point Q. Point R is 8m to the East of Point T. Point W is 5m to the West of Point P. Point V is 4m to the North of Point W. Point T lies exactly between Point P and Point Q.

**21.** What is the direction of Point V with respect to Point T?
(a) Northeast (b) Northwest (c) Southeast
(d) Southwest (e) Cannot be determined

**22.** What is the shortest distance between Point Q and Point V?
(a) $\sqrt{79}$m (b) $\sqrt{89}$m (c) $\sqrt{91}$m
(d) $\sqrt{98}$m (e) None of these

**23.** If Point U is 5m to the West of Point Q, then what is the shortest distance between Point U and Point P?
(a) 12m (b) 17m (c) 15m
(d) 13m (e) None of these

**Directions (24-26):** Study the following information and answer the given questions.
In a family of eight members A is the grandson of E. B is sister of A. D is mother of B. F is married to D. H is mother-in law of D. J is the brother of F. L is the father of J. E does not have a son.

**24.** How is L related to D?
(a) Father
(b) Uncle
(c) Father-in-law
(d) Brother-in-law
(e) Cannot be determined

**25.** How is E related to F?
(a) Father
(b) Mother
(c) Father-in-law
(d) Either (a) or (b)
(e) Cannot be determined

**26.** How is B related to J?
(a) Uncle (b) Aunt (c) Nephew
(d) Niece (e) Cannot be determined

**Directions (27-30):** Study the information and answer the following questions:

Six persons A, B, C, D, E, F, G and H are sitting around a circular table. Some are facing inside and some are facing outside (not necessarily in the same order).
(Note: Facing the same direction means if one is facing inside then the other also faces inside and vice versa. Facing opposite direction means if one is facing inside then the other faces outside and vice versa).
D sits third to the right of F. C sits second to the left of E. C is not an immediate neighbor of D. A sit second to the right of F. D faces outside. Immediate neighbors of E face opposite direction. A faces same direction as D. Not more than three people face outside. B does not sit to the immediate left of D.

**27.** Who among the following sit third to the left of E?
(a) F (b) D (c) A
(d) B (e) None of these

**28.** What is the position of A with respect to C?
(a) Third to the left
(b) Third to the right
(c) Immediate left
(d) Immediate right
(e) Cannot be determined

**29.** Who among the following faces B?
(a) F (b) C (c) D
(d) A (e) None of these

**30.** Who among the following does not face outside?
(a) D (b) A (c) F
(d) B (e) None of these

**Directions (31-35):** Study the following information carefully and answer the questions given below:
A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input: 3 core 7 begun 6 filter 5 posting 4 sum**
Step I: begun 5 3 core 7 6 filter posting 4 sum
Step II: core 4 begun 5 3 7 6 filter posting sum
Step III: filter 6 core 4 begun 5 3 7 posting sum
Step IV: posting 7 filter 6 core 4 begun 5 3 sum
Step V : sum 3 posting 7 filter 6 core 4 begun 5
Step V is the last step of the above arrangement. As per the rules followed in the steps given above, find out in each of the following questions the appropriate step for the given input.
**Input: 5 follow 8 actor 6 relation 2 complaint 9 to**

**31.** Which of the following element is seventh from the right end in Step II?
(a) actor (b) 5 (c) follow
(d) 9 (e) None of these

**32.** Which of the following element is third from the left end in step III?
(a) 6 (b) complaint (c) relation
(d) 5 (e) follow

**33.** Which of the following is Step IV of the given input?
(a) follow 6 complaint 9 actor 8 5 relation 2 to
(b) relation 8 follow 9 complaint 6 actor 5 2 to
(c) relation 8 follow 6 complaint 5 actor 9 2 to
(d) relation 8 follow 6 complaint 9 actor 5 2 to
(e) None of these

**34.** Which element is second to the right of 'follow' in step V?
(a) 8 (b) 9 (c) complaint
(d) relation (e) None of these

**35.** Which element is fourth to the left of 'complaint' in step I?
(a) 8 (b) follow (c) relation
(d) 6 (e) None of these

**36.** If "PURE" is coded as "4@$3", "SLUM" is coded as "72@9", then "PULSE" will be coded as ?
(a) @4279 (b) 4@27$ (c) 4@723
(d) 4@273 (e) None of these

**37.** How many pairs of letters are there in the word" **HOMECOMING**" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**38.** If all the alphabets are rearranged within itself as they appear in the English dictionary in the word "**MISSCOMMUNICATION**" then which of the following will be fourth to the right of eleventh from the right end?
(a) M (b) N (c) O
(d) C (e) None of these

**39.** In a row of 20 students, Pooja is $12^{th}$ from the left end and Seema is $14^{th}$ from the right end. All of them are facing North. How many students sit between them?
(a) One (b) Two (c) Three
(d) Four (e) Cannot be determined

**40.** If G means '–', H means '×', J means '÷' and K means '+' then
22 J 11 H 2 K 14 G 3 = ?
(a) 12 (b) 15 (c) 26
(d) 29 (e) None of these

## QUANTITATIVE APTITUDE

**41.** What will be the single discount equivalent to two successive discounts of 25% and 24%?
(a) 46% (b) 43% (c) 40%
(d) 33% (e) 49%

**42.** The average of five consecutive even numbers is 32. Find the difference between largest even number and least even number?
(a) 6 (b) 10 (c) 8
(d) 4 (e) 2

**43.** In a school there 60% boys and rest are girls. If number of girls is 360 then find the total number of boys in the school.
(a) 540 (b) 600 (c) 900
(d) 640 (e) 480

**44.** The ratio of ages of Ravi and Shusma, three years before was 5 : 3. 2 years hence, ratio of their ages will be 4 : 3 . Find the present age of Ravi.
(a) 12 yrs 3 months
(b) 11 yrs 4 months
(c) 9 yrs 5 months
(d) 13 yrs
(e) 15 yrs

**45.** Two partners A and B enter into a partnership with their initial sum Rs 50,000 and Rs 40,000 respectively. After 8 months, B left the partnership. If total profit after a year is Rs 6900, find profit share of A.
(a) Rs. 5,000 (b) Rs 6,500 (c) Rs 4,500
(d) Rs 3,500 (e) Rs 5,500

**Directions (46–50):** Find the value of (?) in the following simplification problems.

**46.** $\frac{?}{4}$ of $\frac{3}{5}$ of $\frac{24}{25}$ of 625 = 3125 × 54
(a) 1675 (b) 1875 (c) 2075
(d) 1475 (e) 1650

**47.** 4846 + 3454 + 5156 = ? + 11342
(a) 2114 (b) 2314 (c) 2144
(d) 2014 (e) 2018

**48.** $4^{?}$ × (8 × 128) = 256 × 1024
(a) 5 (b) 3 (c) 2
(d) 4 (e) 8

**49.** 264 ÷ 8 × 12 + 224 – 64 = ?
(a) 350 (b) 450 (c) 465
(d) 655 (e) 556

**50.** $\sqrt{1024} + \sqrt{784} - \sqrt[3]{(77+4)\times 9} = ?$
(a) 31 (b) 69 (c) 40
(d) 51 (e) 71

**Directions (51–55):** The following table shows total number of candidates who have cleared the SBI Clerk prelims exam 2018 and ratio of male to female from five different states of India. Study the table carefully to answer the following questions.

| Sates | Number of candidates who cleared pre–exam | Ratio of male to female |
|---|---|---|
| Delhi | 12,400 | 1 : 1 |
| UP | 16,400 | 3 : 1 |
| Maharashtra | 9,800 | 4 : 3 |
| Bihar | 12,800 | 5 : 3 |
| Gujrat | 6,400 | 9 : 7 |

**51.** Find the total number of male candidates who qualified the SBI clerk prelims exam from UP and Maharashtra together.
(a) 16,400 (b) 17,900 (c) 15,900
(d) 21,400 (e) 18,600

**52.** Find the difference between total male candidates who cleared SBI Clerk prelims exam from Delhi and Bihar together and female candidates who cleared SBI Clerk prelims exam together from same states together?
(a) 3600 (b) 3200 (c) 2800
(d)2400 (e) 3800

**53.** Total male candidate qualified the SBI clerk prelims exam from Gujrat are what percent of total male candidates qualified the SBI clerk prelims exam from Maharashtra?
(a) $64\frac{2}{7}\%$ (b) $54\frac{1}{3}\%$ (c) $44\frac{2}{3}\%$
(d) $74\frac{5}{6}\%$ (e) $66\frac{2}{7}\%$

**54.** What is the average number of candidates who cleared SBI Clerk Pre- exam from all states together?
(a) 9560 (b) 10450 (c) 11560
(d) 12560 (e) 8650

**55.** Female candidates who qualified SBI clerk prelims exam from UP are what percent more or less than that of female candidates qualified the SBI clerk prelims exam from Bihar?
(a) $14\frac{7}{12}\%$ (b) $11\frac{2}{3}\%$ (c) 16%
(d) 18% (e) 8%

**56.** How many five digits number can be formed using the digits 1, 3, 4, 5, 6, 7 without repetition of digits?
(a) 120 (b) 144 (c) 720
(d) 840 (e) 420

**57.** The ratio of number of balls in bags x, y is 2 : 3. Five ball are taken from bag y and are dropped in bag x, number of balls are equal in each bag now. Number of balls in each bag now is
(a) 45 (b) 20 (c) 30
(d) 25 (e) 35

**58.** P, Q and R can do a job alone in 16 days, 24 days and 32 days respectively. If they started together then in how many days the work be completed?
(a) 5 days (b) 8 days (c) 12 days
(d) $\frac{96}{13}$ days (e) $\frac{95}{11}$ days

**59.** Speed of a boat in still water is 8 km/h. It takes 5 hours to go upstream and 3 hours downstream distance between two points. What is the speed of stream?
(a) 4 km/h (b) 2 km/h (c) 3 km/h
(d) 1 km/h (e) 2.5 km/h

**60.** Speed of a train is 90 km/h. It crosses a platform and a pole in 36 seconds and 6 seconds respectively. Find the length of platform.
(a) 450m (b) 650 m (c) 750m
(d) 850m (e) 550m

**Directions (61–65):** What approximate value will come in place of (?) in the following questions?

**61.** 39.98% of ? – 49.97% of 360.01 = 39.98% of 259.97
(a) 605 (b) 590 (c) 710
(d) 845 (e) 455

**62.** $\frac{2.99}{3.99}$ of $\frac{6.99}{4.99}$ of 99.98 = ? $-\frac{3}{4}$ of 431.98
(a) 429 (b) 529 (c) 329
(d) 469 (e) 489

**63.** 223.97 + 369.04 + 459.93 – 381.03 = ?
(a) 370 (b) 470 (c) 572
(d) 672 (e) 772

**64.** $\sqrt{29.98\%\ of\ 449.98 + 19.96\%\ of\ 169.95} = ?$
(a) 13 (b) 17 (c) 21
(d) 23 (e) 27

**65.** $109.97 \div 21.96 \times 59.97 + 314.94 = ? + 219.97$
(a) 495 (b) 395 (c) 695
(d) 275 (e) 345

**66.** Tap 'A' can fill a cistern alone in 12 hours while another tap 'B' alone can empty the tank in 18 hours. If both pipes are opened together and after 3 hours tap 'B' is closed then in how much time the tank will be filled?
(a) 14 hours (b) 16 hours (c) 10 hours
(d) 12 hours (e) 20 hours

**67.** Three friends run around a circular track can complete a single loop in 24 min, 32 min and 56 min respectively. If they started running from the same initial point then after how much time they will meet together for first time?
(a) 8.4 hours (b) 9.6 hours (c) 11.2 hours
(d) 6.4 hours (e) 10 hours

**68.** A man covers half of total distance with 12 km/h and another half distance with 24km/h. Find his average speed.
(a) 12 km/h (b) 16 km/h (c) 10 km/h
(d) 18 km/h (e) 6 km/h

**69.** I bought 16 pencils at the rate of Rs 9 per dozen and sold all of them at the rate of Rs 12 per dozen. What is the overall profit percentage in this transaction?
(a) $66\frac{2}{3}\%$ (b) $22\frac{1}{7}\%$ (c) 22%
(d) $33\frac{1}{3}\%$ (e) 44%

**70.** In a zoo, there are 480 deers and ostriches together. If the total number of legs are 1040 then find the number of deers and ostriches respectively.
(a) 80, 400 (b) 440, 40 (c) 40, 440
(d) 120, 360 (e) 100, 380

**Directions (71–75):** what will come in place of (?) in the following number series?

**71.** 3, 8, 27, 112, 565, ?
(a) 3396 (b) 3390 (c) 3369
(d) 3306 (e) 3209

**72.** 5, 10, 40,320, ?, 163840
(a) 6120 (b) 4120 (c) 5120
(d) 2560 (e) 3840

**73.** 168, 288, 360, 528, ?, 960
(a) 1520 (b) 1224 (c) 1088
(d) 840 (e) 1848

**74.** 4800, 2400, 600, 100, 12.5, ?
(a) 0.25 (b) 1.25 (c) 2.25
(d) 4.5 (e) 2.5

**75.** 7, 16, 32, 57, 93, ?
(a) 148 (b) 146 (c) 144
(d) 241 (e) 142

**Directions (76–80):** In the following questions, there are two equations in x and y. You have to solve both the equations and give answer
(a) if $x > y$
(b) if $x < y$
(c) if $x \geq y$
(d) if $x \leq y$
(e) if $x = y$ or there is no relation between x and y

**76.** I. $x^2 - 5x - 14 = 0$
II. $y^2 - 16y + 64 = 0$

**77.** I. $x^2 - 9x + 20 = 0$
II. $y^2 - 7y + 12 = 0$

**78.** I. $2x^2 + 11x + 12 = 0$
II. $4y^2 + 13y + 10 = 0$

**79.** I. $2x + 3y = 4$
II. $3x + 2y = 6$

**80.** I. $6x^2 - x - 1 = 0$
II. $8y^2 - 2y - 1 = 0$

# Mock 20 : Solutions

## REASONING ABILITY

**Direction (1-5):**

1. (a); I. E < M (True) II. O < H (False)
2. (c); I. L = A (False) II. A < L (False)
3. (b); I. I > X (False) II. P > X (True)
4. (d); I. V > I (False) II. R < E (False)
5. (b); I. N > M (False) II. S ≥ X (True)

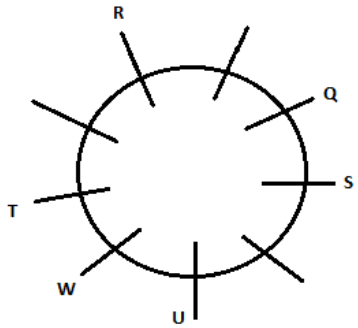
**Directions (6-10):**

6. (c); 7. (b); 8. (b);
9. (b); 10. (c);

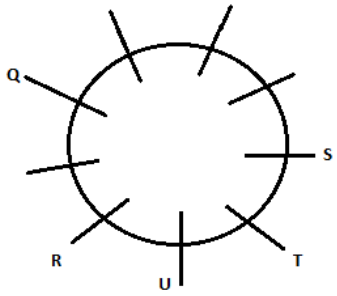
**Directions (11-15):**

S sits second to the right of U. Only two persons sit between S and R. Q sits second to the left of R. Only one person sit between R and T. We have two possibilities-

**Case 1**

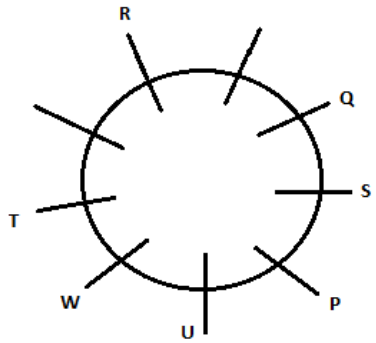



**Case 2**

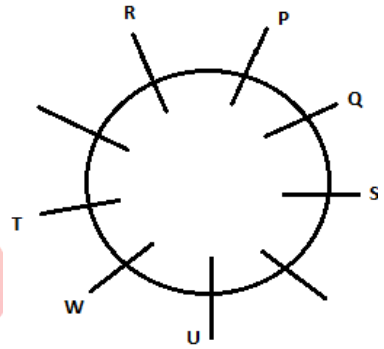



Now, Neither W nor T is an immediate neighbor of R or S. This will eliminate Case 2. W is an immediate neighbor of T. Only two persons sit between P and T. Again we will have two cases-

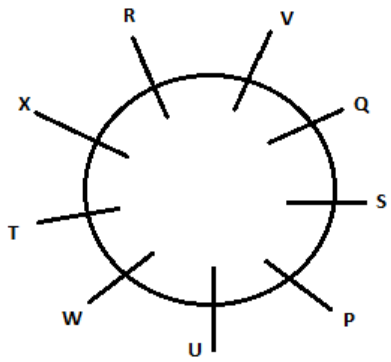
**Case 1-A**




**Case 1-B**




Now, V sits third to the right of P. This will eliminate Case 1-B. So the final arrangement will be-




11. (d) 12. (c) 13. (c)
14. (b) 15. (c)

**Directions (16-20):**

Basketball is organized on Thursday. Volleyball is organized immediately before Basketball. More than two sports are organized between Badminton and Cricket and neither of them was on Monday. There are as many sports between Basketball and Badminton as there are between Hockey and Volleyball. Football is not organized on one of the days after Hockey. Wednesday is not an off day. We have following possibilities-

| Case 1 | | Case 2 | | Case 3 | | Case 4 | |
|---|---|---|---|---|---|---|---|
| Days | Sports | Days | Sports | Days | Sports | Days | Sports |
| Monday | | Monday | | Monday | | Monday | |
| Tuesday | Badminton | Tuesday | Badminton | Tuesday | Cricket | Tuesday | Cricket |
| Wednesday | Volleyball | Wednesday | Volleyball | Wednesday | Volleyball | Wednesday | Volleyball |
| Thursday | Basketball | Thursday | Basketball | Thursday | Basketball | Thursday | Basketball |
| Friday | Hockey | Friday | Hockey | Friday | Hockey | Friday | Hockey |
| Saturday | Cricket | Saturday | | Saturday | Badminton | Saturday | |
| Sunday | | Sunday | Cricket | Sunday | | Sunday | Badminton |

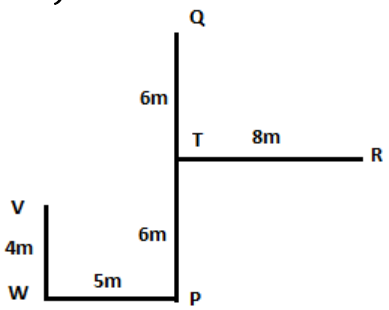
Now, Sunday is not an off day. Now, Badminton is not organized after the off day. This will eliminate Case 1, Case 3 and Case 4. So the final arrangement will be-

| Days | Sports |
|---|---|
| Monday | Football |
| Tuesday | Badminton |
| Wednesday | Volleyball |
| Thursday | Basketball |
| Friday | Hockey |
| Saturday | OFF |
| Sunday | Cricket |

**16. (c);** **17. (a);** **18. (e);**

**19. (d);** **20. (b);**

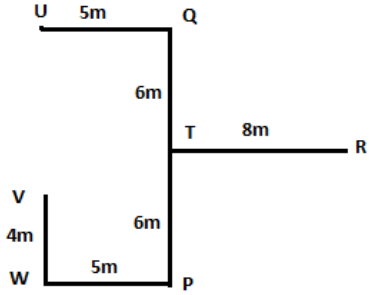
**Directions (21-23):**



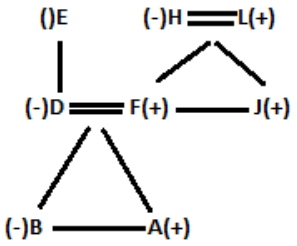

**21. (d);** Southwest

**22. (b);** $\sqrt{8^2 + 5^2} = \sqrt{89}$m

**23. (d);** $\sqrt{12^2 + 5^2} = 13$m




**Directions (24-26):**

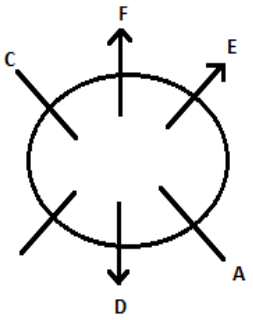



**24. (c);** **25. (e);** **26. (d);**

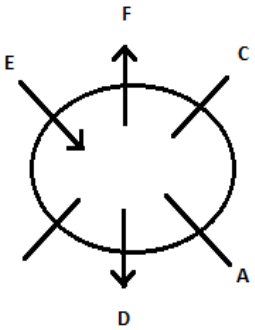
**Directions (27-30):**

D sits third to the right of F. D faces outside. C is not an immediate neighbor of D. C sits second to the left of E. A sit second to the right of F. B does not sit to the immediate left of D. We have two possibilities-

**Case 1**

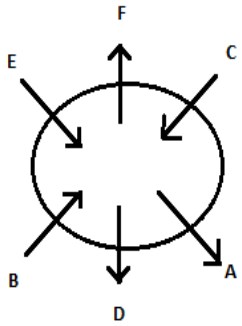



**Case 2**




Now, immediate neighbors of E face opposite direction. A faces same direction as D. Not more

than three people face outside. This will eliminate Case 2. So the final arrangement will be-




**27. (c);** **28. (c);** **29. (b);**

**30. (d) ;**

**Directions (31-35):**

In the arrangement words are arranged along with a number in each step. As for words, they are arranged in reverse alphabetical order on the left end while the numbers are arranged in such a manner that the number of letters present in the word comes after the word.

Input: **5 follow 8 actor 6 relation 2 complaint 9 to**

Step I: actor 5 follow 8 6 relation 2 complaint 9 to

Step II: complaint 9 actor 5 follow 8 6 relation 2 to

Step III: follow 6 complaint 9 actor 5 8 relation 2 to

Step IV: relation 8 follow 6 complaint 9 actor 5 2 to

Step V: to 2 relation 8 follow 6 complaint 9 actor 5

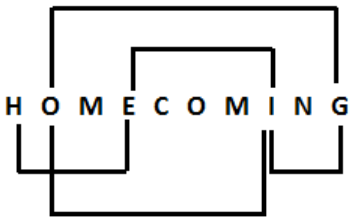
**31. (b);** **32. (b);** **33. (d);**

**34. (c);** **35. (a);**

**36. (d);**

| P | U | L | S | E |
|---|---|---|---|---|
| 4 | @ | 2 | 7 | 3 |

**37. (e); Five**




**38. (b);**

**39. (d);**

**40. (b); 22 ÷ 11 × 2 + 14 – 3 = 15**

## QUANTITATIVE APTITUDE

**41. (b);** Discount $R_1$ =25%

$R_2 = 24\%$

∴ Equivalent discount $= -R_1 - R_2 + \frac{R_1 R_2}{100}$

$= -25 - 24 + \frac{25\times24}{100} = -43$

i.e discount = 43%

**42. (c);** Let even numbers are x-4, x- 2, x, x+2, x +4

$\therefore \frac{x-4+x-2+x+x+2+x+4}{5} = 32$

$\Rightarrow x = 32$

∴ largest even number = 32 + 4 = 36

Least even number = 32 – 4 = 28

∴ required difference = 36 – 28 = 8

**43. (a);** Since,

$40\% \rightarrow 360$

$\Rightarrow 100\% \rightarrow \frac{360}{40} \times 100 = 900$

∴ Number of boys $= \frac{60}{100} \times 900 = 540$

**44. (b);** Let three years before,

Ravi's age = 5x

Shusma's age = 3x

A/q,

$\frac{5x+5}{3x+5} = \frac{4}{3}$

$\Rightarrow 15x + 15 = 12x + 20$

$\Rightarrow x = \frac{5}{3}$

∴ Present age of Ravi $= 5 \times \frac{5}{3} + 3$

$= \frac{34}{3} yrs$

= 11 yrs 4 months

**45. (c);** (A's profit) : (B's profit) = 50,000 × 12 : 40,000 × 8

= 15 : 8

∴ profit share of A $= \frac{15}{23} \times 6900 = 4500$

**46. (b);** $\frac{?}{4} \times \frac{3}{5} \times \frac{24}{25} \times 625 = 3125 \times 54$

$\Rightarrow ? = \frac{3125 \times 54}{90}$

$\Rightarrow ? = 1875$

**47. (a);** ? = 13456 – 11342

⇒ ?= 2114

**48. (d);** $4^? \times (4^5) = 4^4 \times 4^5$

$\Rightarrow 4^? = 4^4$

⇒? = 4

**49. (e);** $? = 396 + 224 - 64$
$\Rightarrow ?= 556$

**50. (d);** $? = 32 + 28 - 9$
$? = 51$

**51. (b);** Required number of male candidates from UP & Maharashtra together
$= \frac{3}{4} \times 16400 + \frac{4}{7} \times 9800$
$= 12300 + 5600$
$= 17900$

**52. (b);** Required difference $= \left(\frac{1}{2} \times 12400 + \frac{5}{8} \times 12800\right) - \left(\frac{1}{2} \times 12400 + \frac{3}{8} \times 12800\right)$
$= \frac{2}{8} \times 12800$
$= 3200$

**53. (a);** Male candidate qualified the SBI clerk prelims exam from Gujrat $= \frac{9}{16} \times 6400$
$= 3600$
Male candidates qualified the SBI clerk prelims exam from Maharashtra $= \frac{4}{7} \times 9800 = 5600$
$\therefore$ Required percentage $= \frac{3600}{5600} \times 100 = 64\frac{2}{7}\%$

**54. (c);** Required average
$= \frac{1}{5} \times (12400 + 16400 + 9800 + 12800 + 6400)$
$= \frac{1}{5} \times 57800$
$= 11{,}560$

**55. (a);** Female candidates qualified the SBI clerk prelims exam from UP $= \frac{1}{4} \times 16400$
$= 4100$
Female candidates qualified the SBI clerk prelims exam from Bihar $= \frac{3}{8} \times 12800 = 4800$
$\therefore$ Required percentage $= \frac{4800-4100}{4800} \times 100$
$= \frac{700}{48}\% = \frac{175}{12}\% = 14\frac{7}{12}\%$

**56. (c);** Total number formed $= 6 \times 5 \times 4 \times 3 \times 2 = 720$

**57. (d);** Let no. of balls in bag x and y is $2a$ and $3a$ respectively
$\Rightarrow$ Now 5 balls pare taken out of bag y and put in bag x
$\therefore \frac{2a+5}{3a-5} = \frac{1}{1}$
$\Rightarrow 2a + 5 = 3a - 5$
$a = 10$
$\therefore$ No. of balls in each bag is
x $\Rightarrow 2 \times 10 + 5 = 25$
y $\Rightarrow 3 \times 10 - 5 = 25$

**58. (d);** Let total work = 96 units
Per day work of P $= \frac{96}{16} = 6$ units
Per day work of Q $= \frac{96}{24} = 4$ units
Per day work of R $= \frac{96}{32} = 3$ units
$\therefore$ Total time required if all works together
$= \frac{96}{6+4+3} = \frac{96}{13}$ days

**59. (b);** Let speed of stream = r km/h
A/q,
$(8 - r) \times 5 = (8 + r) \times 3$
$\Rightarrow 40 - 5r = 24 + 3r$
$\Rightarrow r = \frac{16}{8} = 2\ km/h$

**60. (c);** Length of train $= 90 \times \frac{5}{18} \times 6$
$= 150$ m
$\therefore$ length of platform $= \frac{5}{18} \times 90 \times 36 - 150$
$= 750$m

**61. (c);** $\frac{40}{100} \times ? - \frac{50}{100} \times 36 \simeq \frac{40}{100} \times 260$
$\Rightarrow ? \simeq \frac{284}{40} \times 100$
$\Rightarrow ? \simeq 710$

**62. (a);** $? = \frac{3}{4} \times \frac{7}{5} \times 100 + \frac{3}{4} \times 432$
$? \simeq 105 + 324$
$? \simeq 429$

**63. (d);** $? \simeq 224 + 369 + 460 - 381$
$? \simeq 1053 - 381$
$? \simeq 672$

**64. (a);** $? \simeq \sqrt{\frac{30}{100} \times 450 + \frac{20}{100} \times 170}$
$? \simeq \sqrt{135 + 34}$
$? \simeq \sqrt{169}$
$? \simeq 13$

**65. (b);** $? \simeq 110 \div 22 \times 60 + 315 - 220$
$? \simeq 615 - 220$
$? \simeq 395$

**66. (a);** Let total work = 36 units
One hour's work of A $= \frac{36}{12} = 3$ units
One hour's work of B $= \frac{-36}{18} = -2$ units
($\because$ B is emptying pipe)
$\therefore$ Remaining work after 3 hours
$= 36 - (3 \times 3 - 2 \times 3)$
$= 33$ units
$\therefore$ Total time required to fill the tank
$= 3 + \frac{33}{3} = 14$ hours

**67. (c);** Required time = LCM of (24, 32, 56)
= 672 min
= 11.2 hours

**68. (b);** Let total distance = d
∴ Average speed = $\frac{d}{\frac{d}{24}+\frac{d}{48}}$
= 16 km/h

**69. (d);** CP of 16 pencils = $\frac{9}{12} \times 16 = Rs.12$
SP of 16 pencils = $\frac{12}{12} \times 16 = Rs\ 16$
∴ Required profit percentage = $\frac{16-12}{12} \times 100$
$= 33\frac{1}{3}\%$

**70. (c);** Let total number of deer and ostriches are x and y respectively.
∴ x + y = 480 ...(i)
And,
4x + 2y = 1040
⇒ 2x + y = 520 ...(ii)
Solving equation (i) and (ii) respectively.
x = 40 and y = 440

**71. (a);** The pattern is
3 × 2 + 2 = 8
8 × 3 + 3 = 27
27 × 4 + 4 = 112
112 × 5 + 5 = 565
565 × 6 + 6 = 3396

**72. (c);** The series is

| 5 | 10 | 40 | 320 | 5120 | 163840 |
|---|---|---|---|---|---|
| | ×2 | ×4 | ×8 | ×16 | ×32 |

**73. (d);** The pattern is (square of prime number -1 )
$13^2 - 1 = 169 - 1 = 168$
$17^2 - 1 = 289 - 1 = 288$
$19^2 - 1 = 361 - 1 = 360$
$23^2 - 1 = 529 - 1 = 528$
$29^2 - 1 = 841 - 1 = 840$
$31^2 - 1 = 961 - 1 = 960$

**74. (b);** 4800 ÷ 2 = 2400
2400 ÷ 4 = 600
600 ÷ 6 = 100
100 ÷ 8 = 12.5
12.5 ÷ 10 = 1.25

**75. (e);** The series is
7 + 9 = 16
16 + 16 = 32
32 + 25 = 57
57 + 36 = 93
93 + 49 = 142

**76. (b);** I. $x^2 - 5x - 14 = 0$
$\Rightarrow x^2 - 7x + 2x - 14 = 0$
$\Rightarrow x(x-7) + 2(x-7) = 0$
$\Rightarrow (x-7)(x+2) = 0$
$\Rightarrow x = 7, -2$
II. $y^2 - 16y + 64 = 0$
$\Rightarrow (y-8)^2 = 0$
$\Rightarrow y = 8, 8$
$\Rightarrow y > x$

**77. (c);** I. $x^2 - 9x + 20 = 0$
$\Rightarrow x^2 - 5x - 4x + 20 = 0$
$\Rightarrow (x-5)(x-4) = 0$
$\Rightarrow x = 5, 4$
II. $y^2 - 7y + 12 = 0$
$\Rightarrow y^2 - 4y - 3y + 12 = 0$
$\Rightarrow (y-4)(y-3) = 0$
$\Rightarrow y = 4, 3$
$x \geq y$

**78. (e);** I. $2x^2 + 11x + 12 = 0$
$\Rightarrow 2x^2 + 8x + 3x + 12 = 0$
$\Rightarrow (x+4)(2x+3) = 0$
$\Rightarrow x = -4, -\frac{3}{2}$
II. $4y^2 + 13y + 10 = 0$
$\Rightarrow 4y^2 + 8y + 5y + 10 = 0$
$\Rightarrow (y+2)(4y+5) = 0$
$\Rightarrow y = -2, -\frac{5}{4}$
No relation

**79. (a);** I. 2x + 3y = 4
II. 3x + 2y = 6
Multiplying equation (i) by 2 and Equation (ii) by 3 and then subtracting,

$$\begin{array}{r} 4x + 6y = 8 \\ -\ 9x + 6y = 18 \\ \hline -5x = -10 \end{array}$$

⇒ x = 2
x= 2 in (I)
4 + 3y = 4
⇒ y = 0
∴ x > y

**80. (e);** I. $6x^2 - x - 1 = 0$
$6x^2 - 3x + 2x - 1 = 0$
$\Rightarrow (2x-1)(3x+1) = 0$
$\Rightarrow x = \frac{1}{2}, -\frac{1}{3}$
II. $8y^2 - 2y - 1 = 0$
$\Rightarrow 8y^2 - 4y + 2y - 1 = 0$
$\Rightarrow (2y-1)(4y+1) = 0$
$\Rightarrow y = \frac{1}{2}, -\frac{1}{4}$
No relation

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## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $A \leq F \leq S = P < B \leq J > K$
**Conclusions:** **I.** $J \leq A$ **II.** $B \geq K$

**2.** **Statements:** $B < D = E \leq O \leq J > P \geq L$
**Conclusions:** **I.** $L < J$ **II.** $B < P$

**3.** **Statements:** $I \geq A \geq S = P \geq C = U < N$
**Conclusions:** **I.** $U = I$ **II.** $I > U$

**4.** **Statements:** $T > Z \geq X = Y < W \leq V \leq U$
**Conclusions:** **I.** $Z < W$ **II.** $U > X$

**5.** **Statements:** $P = A \geq S \geq T \leq O \leq N < M$
**Conclusions:** **I.** $T < N$ **II.** $T \leq P$

**Directions (6-10):** Study the following sequence and answer the given questions.

A C # 8 W U 9 $ 1 P N & 7 5 V L % R E @ 2 4 S T # Y I K 6 $

**6.** Which of the following element is 19th to the right of the one which is 26th from the right end of the given arrangement?
(a) S (b) T (c) #
(d) Y (e) None of these

**7.** If all the symbols are dropped from the series, which element will be fourth to the right of the one which is sixteenth from the right end of the new arrangement?
(a) W (b) U (c) V
(d) 5 (e) None of these

**8.** How many such numbers are there in the given series which are immediately preceded or followed by a consonant?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**9.** How many such alphabets are there in the given series which are immediately preceded by consonant but not immediately followed by consonant?
(a) One (b) Three (c) Four
(d) Five (e) None of these

**10.** What should come in place of question mark (?) in the following series based on the above arrangement?
CW# 9P$ &V7 %@R ?
(a) SYT (b) 2T4 (c) 4TS
(d) 4#S (e) 4#T

**Directions (11-15):** Study the following information carefully and answer the given questions:

Eight friends P, Q, R, S, T, U, V and W are sitting around a square table in such a way that four of them sit at four corners of the square while the other four sit in the middle of each sides. The ones who sit at the four corners do not face towards the centre while those who sit in the middle of the sides do not face outside.

Q sits third to the left of W. Two persons sits between S and W. P sits second to the right of S. V is an immediate neighbor of P. T sits to the immediate right of R. T does not face inside. U face outside.

**11.** Who sits exactly between Q and S?
(a) T (b) U (c) V
(d) P (e) R

**12.** What is the position of P with respect to T?
(a) Third to the right
(b) Second to the right
(c) Fourth to the left
(d) Fifth to the left
(e) Either (a) or (d)

**13.** Four of the following five are alike in a certain way and so form a group. Who among the following does not belong to that group?
(a) P (b) Q (c) V
(d) S (e) R

**14.** Who sits fourth to the left of R?
(a) V (b) U (c) Q
(d) S (e) None of these

**15.** If all the persons are arranged as per the alphabetical order starting from P (in the anticlockwise direction from P), then the position of how many persons will remain unchanged (except P)?
(a) None (b) One (c) Two
(d) Three (e) None of these

**Directions (16-18):** Study the following information carefully and answer the given questions.

A, B, C, D, E and F are six friends. Each of them is of different age. B is older than only D. A is older than E but younger than F. Only two persons are younger than C, who's age is 26 years.

**16.** Who among the following is the youngest?
(a) B (b) D (c) A
(d) E (e) Cannot be determined

**17.** If the age of A is 32 years, what could be the age of E?
(a) 25 years (b) 20 years (c) 28 years
(d) 35 years (e) None of these

**18.** Who among the following is the oldest?
(a) A (b) E (c) D
(d) F (e) Cannot be determined

**19.** In a row of 20 students, Kamal is $13^{th}$ from the right end. Eight persons sit between Kamal and Kishore. All of them are facing north. What is the position of Kishore from the left end?
(a) $15^{th}$ (b) $16^{th}$ (c) $17^{th}$
(d) $18^{th}$ (e) Cannot be determined

**20.** How many pairs of letters are there in the word" MINERALS" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

**Directions (21-22):** Study the following sequence and answer the given questions

Point D is 8m to the north of Point B. Point C is 5m to the east of Point B. Point F is 4m to the south of Point G which is 5m to the east of Point D.

**21.** How far is Point F from Point C?
(a) 4m (b) 5m (c) 8m
(d) $\sqrt{41}$m (e) Cannot be determined

**22.** In which direction is Point C with respect to Point F?
(a) North (b) North-East (c) South
(d) South-West (e) Cannot be determined

**Directions (23-25):** Study the following information and answer the given questions.

In a family of seven members, there are three male members. A is the mother of D. B is married to A. G is the brother of D. F is daughter-in-law of B. C is granddaughter of B. E is sister of D. E and D are unmarried.

**23.** How is D related to C?
(a) Father (b) Brother (c) Uncle
(d) Aunt (e) Cannot be determined

**24.** How is G related to E?
(a) Brother
(b) Son
(c) Father
(d) Brother-in-law
(e) Cannot be determined

**25.** How is E related to F?
(a) Sister (b) Mother (c) Sister-in-law
(d) Mother-in-law (e) None of these

**Directions (26-30):** Study the following information carefully and answer the questions given below:

Seven persons P, Q, R, S, T, V and X were born in seven different month viz. January, March, April, May, June, July and August of the same year but not necessarily in the same order.

V was born in the month having 30 days. Two persons were born between V and Q. More than three persons were born between X and P. P was born after Q. T was born before V in the month of 31 days. S was born immediately before R. T was not born on January.

**26.** On which of the following month P was born?
(a) January (b) March (c) July
(d) August (e) None of these

**27.** Who among the following was born on May?
(a) S (b) T (c) Q
(d) R (e) None of these

**28.** How many persons were born between S and T?
(a) None (b) One (c) Two
(d) Three (e) More than three

**29.** Who was born immediately before P?
(a) V (b) Q (c) R
(d) T (e) None of these

**30.** Who among the following was born on the month which has 30 days?
(a) S (b) T (c) X
(d) P (e) None of these

**Directions (31-35):** Study the following information and answer the questions.

**Input: tool 16 word 29 food 33 forest 68**
Step I : food tool word 29 33 forest 68 16
Step II : forest food tool word 33 68 16 29
Step III : tool forest food word 68 16 29 33
Step IV : word tool forest food 16 29 33 68
And Step IV is the last step of the above arrangement. As per the rules followed in the above arrangement find the steps for the given input.
**Input: dish 17 cure 54 turns 43 mouse 72**

**31.** Which of the following element is fifth from the left end in Step III?
(a) mouse (b) 72 (c) 17
(d) cure (e) None of these

**32.** Which of the following element is fourth from the right end in step IV?
(a) 43 (b) 72 (c) 17
(d) cure (e) turns

**33.** Which of the following is Step II of the given input?
(a) cure dish 54 turns 43 mouse 72 17
(b) dish cure 54 turns 72 mouse 17 43
(c) dish cure turns 54 mouse 17 43 72
(d) dish cure 54 turns mouse 72 17 43
(e) None of these

**34.** Which element is second to the left of '43' in step IV?
(a) 72 (b) cure (c) 54
(d) dish (e) turns

**35.** Which element is fourth from the left end in step I?
(a) 54 (b) turns (c) 43
(d) mouse (e) dish

**36.** If "TEAR" is coded as "2468", "BOAT" is coded as "3562", then "BRAT" will be coded as ?
(a) 3642 (b) 3286 (c) 3258
(d) 3862 (e) None of these

**37.** If "FATE" is coded as "GUBF", "GULF" is coded as "HMVG", then "JACK" will be coded as ?
(a) KBDL (b) LCEK (c) KDBL
(d) KLDB (e) None of these

**Directions (38-40):** Study the following information carefully and answer the given questions.
A, B, C, D, E and F are six friends sitting around a circular table facing the centre (but not necessarily in the same order). B sits third to the left of E. A and C are immediate neighbors. F sits second to the left of B. C is not an immediate neighbor of B.

**38.** Who among the following sits to the immediate right of C?
(a) B (b) D (c) A
(d) E (e) Cannot be determined

**39.** Who faces D?
(a) A (b) C (c) F
(d) B (e) None of these

**40.** Who among the following sits second to the left of F?
(a) A (b) B (c) D
(d) C (e) Cannot be determined

## QUANTITATIVE APTITUDE

**41.** Ravi can do three fourth of a work in $\frac{27}{2}$ hours while Hira can do two third of the same work in 8 hours. If both started working together then in how much time the work will be completed?
(a) 8h (b) 7.2h (c) 8.4 h
(d) 9 h (e) 9.2 h

**42.** Two years ago Raju's age was 75% of his sister, Rita's age at that time. After two years, Rita's age will be $33\frac{1}{3}$% of her father's age. Average age of Rita's father and mother is 31 yrs. If Rita's mother's age is 28 yrs then what is the present age of Raju?
(a) 10 yrs (b) 6 yrs (c) 8 yrs
(d)12 yrs (e) 14 yrs

**43.** Average score of Rishabh in five different tests is 42.5. Later it was seen that the two scores were written incorrectly as 44 in place 42 and 36 in place of 40. Find the correct average.
(a) 42.9 (b) 49.2 (c) 42.8
(d) 41.9 (e) 42.2

**44.** In a society $16\frac{2}{3}$% people were interested in music only, $33\frac{1}{3}$% were interested in Yoga only, 25% were interested in cycling only and rest were interested in other activities. If no. of people who are interested in other activities is 450 then what is the no. of people who are interested in music.
(a) 400 (b) 300 (c) 250
(d) 350 (e) 450

**45.** Three partners A, B and C started a business with their initial investments of Rs 13200, Rs 14400 and Rs 18000 respectively. After 4 months, B withdrew Rs 2400 and A invests Rs 1200 extra amount. After a year if C got Rs 11250 as his profit then find total profit.
(a) Rs. 30,000 (b) Rs. 25,000 (c) Rs. 28,000
(d) Rs. 24,000 (e) Rs. 32,000

**Directions (46 – 50):** What will come in place of (?) in the following no. series.

**46.** 126, 134, 158, 198, 254, ?
(a) 326 (b) 342 (c) 270
(d) 286 (e) 336

**47.** 2, 5, 17, 71, 359, ?
(a) 2169 (b) 2149 (c) 2159
(d) 1799 (e) 2519

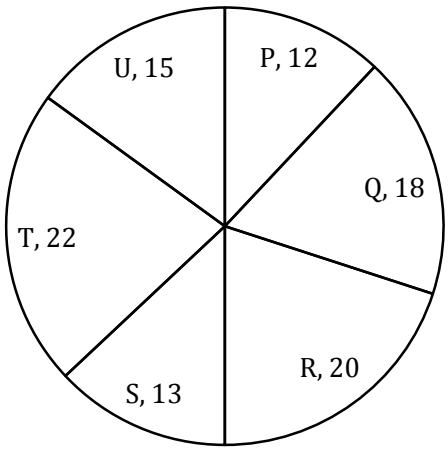
**48.** 27, 148, 317, 542, 831, ?
(a) 1219 (b) 1192 (c) 1272
(d) 1360 (e) 1553

**49.** 255, 323, 399, 483, 575, ?
(a) 1023 (b) 899 (c) 783
(d) 675 (e) 674

**50.** 4, 2, 2, 3, 6, 15, ?
(a) 37.5 (b) 52.5 (c) 60
(d) 45 (e) 48

**Directions (51-55):** pie chart given below gives information about distribution of voters in six different city out of total voters.

**Percentage distribution of voters in six different cities**
**total voters = 75000**




**51.** Average no. of voters in city P, Q, and U are equal to total no. of voters of which city?
(a) P (b) Q (c) S
(d) T (e) U

**52.** If 90% and 88% of total voters of city R and T respectively voted on the day of voting, then find no. of voters who did not vote in these two cities?
(a) 3480 (b) 2280 (c) 2440
(d) 2240 (e) 3280

**53.** What is the difference between total voters of city P and S together to total voters of city Q and T together?
(a) 11250 (b) 9750 (c) 9000
(d) 16500 (e) 15000

**54.** If ratio of male voters to female voters in city S and city U is 13:12 and 29:16 respectively, then find difference between no. of male voters in these cities?
(a) 2050 (b) 2180 (c) 3400
(d) 3140 (e) None of these.

**55.** If in city T 40% of total voters are female and 20% of female voters did not cast vote and total 13840 vote were polled, then find how difference of male and female who did not cast vote?
(a) 20 (b) 40 (c) 25
(d) 15 (e) 38

**Directions (56–60):** simplify the following problems and find the value of (?)

**56.** $25\%$ of $480 + 66\frac{2}{3}\%$ of $420 = ? + 12\frac{1}{2}\%$ of $640$
(a) 320 (b) 310 (c) 330
(d) 230 (e) 420

**57.** $\sqrt{784} \div \sqrt[3]{343} \times \sqrt{625} - \sqrt[3]{1728} = ?$
(a) 78 (b) 88 (c) 98
(d) 83 (e) 76

**58.** $19^2 + 34^2 + \sqrt{1024} = 500\%$ of $? + 27^2$
(a) 264 (b) 364 (c) 146
(d) 64 (e) 164

**59.** $4644 \div 300 + 13452 \div 3000 - 3543 \div 300 = 10\%$ of ?
(a) 86.54 (b) 8.165 (c) 815.4
(d) 81.54 (e) 8.154

**60.** $3454 + 3564 + 7777 \div 1100 = ?$
(a) 7205.07 (b) 7025.07 (c) 6025.17
(d) 8020.17 (e) 7125.15

**61.** In how many ways can a group of 5 men and 2 women be made out of total of 7 men and 3 women?
(a) 63 (b) 45 (c) 126
(d) 90 (e) 84

**62.** The ratio of speed of two trains which are running in the same direction is 4 : 5. The train having higher speed crosses the second train in 30 seconds and a pole in 4 seconds respectively. Find the ratio of their lengths.
(a) 1 : 2 (b) 2 : 3 (c) 3 : 5
(d) 4 : 5 (e) 6 : 7

**63.** Speed of a boat in still water is 300% more than the speed of current. The boat takes a total time of 8 hours to cover a distance of 45 km upstream and 45 km in downstream both. Find speed of current.
(a) 2.5 km/h (b) 2 km/h (c) 4 km/h
(d) 3 km/h (e) 5 km/h

**64.** The simple interest on a certain sum for 4 yrs at a rate of 12.5% per annum is Rs 4000. What will be the compound interest on the same sum at a rate of 4% per annum after two years?
(a) Rs 762.8 (b) Rs 562.8 (c) Rs 652.8
(d) Rs 842.4 (e) Rs 648.6

**65.** Two busses start from Delhi to Karnal at 8 am and 10 am respectively. Speed of bus starting at 8 a.m. and speed of bus starting at 10 a.m. is 20 m/sec and 25 m/sec respectively. If distance between Delhi to Karnal is 200 km then at what time faster bus will catch the slower bus?
(a) 8h (b)10 h (c) 12 h
(d) 6 h (e) 14 h

**Directions (66–70):** What approximate value will come in place of (?) in the following problems?

**66.** $21.01^2 + 31.9^2 - 40.01^2 = ? - 26.9^2$
(a) 485 (b) 459 (c) 594
(d) 694 (e) 394

**67.** 34.98 % of 400.01 + 49.97 % of 249.98 = 499% of ?
(a) 226 (b) 53 (c) 26
(d) 216 (e) 136

**68.** 11.89 ÷ 2.87 + 124.9 ÷ 4.98 = 9.9% of ?
(a) 490 (b) 390 (c) 190
(d) 290 (e) 590

**69.** $\sqrt{1294} + \sqrt{674} + \sqrt[3]{729.12} = 71.01\%\ of\ ?$
(a) 168 (b) 192 (c) 78
(d) 718 (e) 100

**70.** $3699.98 \div 99.97 + 2640.02 \div 29.98 - \frac{9.9}{11.9}$ of 95.89 =?
(a) 76 (b) 66 (c) 32
(d) 36 (e) 45

**Direction (71 – 75):-** Study the given information carefully and answer the following questions.

In year **2016**, **1500** students are selected by different public sector banks (**Dena bank, Canara bank, Indian bank, PNB, SBI, Allahabad bank and corporation bank**).

Number of students selected in **Dena bank** is $8\frac{1}{3}\%$ of total selected students. 240 students are selected in **Indian bank**. Number of students selected in **Dena bank** is $16\frac{2}{3}\%$ less than those selected in **Allahabad bank**. Ratio between students selected in **Canara bank** and **Corporation bank** is 8 :11. Students selected in **Corporation bank** are 35 more than those selected in **Indian bank**. Average number of students selected in **Canara bank, Dena bank** and **SBI** are 215.

**71.** What is the ratio between no. of students selected in Canara bank to that of Indian bank?
(a) 4 :5 (b) 5 :6 (c) 3 :4
(d) 4 :7 (e) 5 :8

**72.** Students selected in SBI are how much percent more/less than that of the Indian bank?
(a) 33.33% (b) 113.33% (c) 37.5%
(d) 25% (e) 27.5%

**73.** What is the difference between average number of students selected in Canara bank, PNB & Allahabad bank and number of students selected in Corporation bank?
(a) 95 (b) 180 (c) 85
(d) 75 (e) 105

**74.** Number of students selected in Corporation bank is what percent of Dena bank?
(a) 45.45% (b) 54.54% (c) 120%
(d) 220% (e) None of these

**75.** In which bank from the following banks, number of selection of students is maximum?
(a) Dena bank
(b) Corporation bank
(c) PNB
(d) Canara bank
(e) SBI

**76.** The ratio between perimeter of an equilateral triangle and a square is 3 : 8. The area of square is 800% of area of a rectangle having sides 8 m and 4 m. Find the perimeter of triangle.
(a) 22 m (b) 20m (c) 24 m
(d) 28 m (e) 32 m

**77.** A bag has seven red, four white and three green balls while another bag has five red, six yellow and three blue balls. A bag is selected at random and a ball drawn out of it, then Find the probability that the ball drawn is red.
(a) $\frac{1}{7}$ (b) $\frac{3}{7}$ (c) $\frac{2}{7}$
(d) 1 (e) $\frac{6}{7}$

**78.** Find the ratio of volume of cylinder 'A' to volume of cylinder 'B', if ratio of radius of cylinders 'A' to cylinder 'B' is 1 : 2 while the ratio of height of cylinder 'A' to cylinder 'B' is 2 : 1.
(a) 1 : 1 (b) 1 : 2 (c) 2 : 1
(d) 1 : 4 (e) 1 : 8

**79.** Two pipes X and Y can fill an empty cistern at a rate of 50 $m^3$/min and 60 $m^3$/min respectively. Both pipes work for 6 min. together and then pipe X is get closed. In how much time the remaining part of cistern will be filled by pipe Y if capacity of cistern is 1260 $m^3$?
(a) 16 min (b) 14 min (c) 12 min
(d) 8 min (e) 10 min

**80.** A seller marks up an article 160% above of its cost price. After it he allows two successive discount of 20% and 25% and yet he gets 56% profit on it. If marked price of article is Rs 520 then find its selling price
(a) Rs 320 (b) Rs 312 (c) Rs 240
(d) Rs 324 (e) Rs 230

# Mock 21 : Solutions

## REASONING ABILITY

**Direction (1-5):**

**1. (d);** **I.** J ≤ A (False) **II.** B ≥ K (False)

**2. (a);** **I.** L < J (True) **II.** B < P (False)

**3. (c);** **I.** U = I (False) **II.** I > U (False)

**4. (b);** **I.** Z < W (False) **II.** U > X (True)

**5. (b);** **I.** T < N (False) **II.** T ≤ P (True)

**Direction (6-10):**

**6. (b);** T

**7. (c);** V

**8. (e);** Five – #8W, $1P, 75V, 24S, K6$

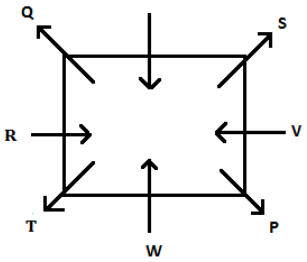
**9. (d);** Five – WU9, PN&, VL%, RE@, ST#

**10. (d);** 4#S

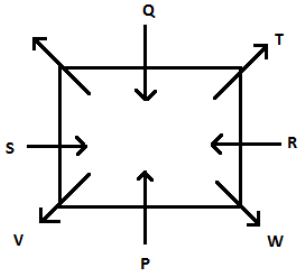
**Directions (11-15):**

Q sits third to the left of W. Two persons sits between S and W. P sits second to the right of S. V is an immediate neighbor of P. T sits to the immediate right of R. T does not face inside. We got two possibilities

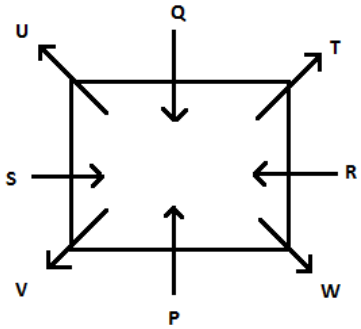
Case I




Case II




Now, U face outside. This will eliminate Case I. So, the final arrangement will be –




**11. (b);** **12. (e);** **13. (c);**

**14. (d);** **15. (c);**

**Directions (16-18):**

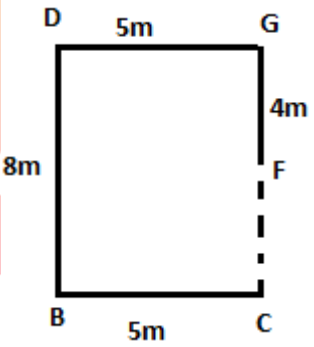
F > A > E > C (26 years) > B > D

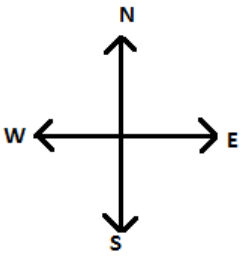
**16. (b);** **17. (c);** **18. (d);**

**19. (c);** Kamal's position from left end = (21-13) =8th from left end. Eight persons sit between Kamal and Kishore so Kishore's position from left hand = (8+9) = 17th from left end. Since there are only seven persons to the left of Kamal, Kishore cannot sit on the left side of Kamal.

**20. (b);** One


**Directions (21-22):**

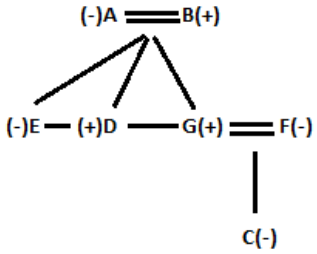



**21. (a);** 4m

**22. (c);** South

**Directions (23-25):**




**23. (c);** **24. (a);** **25. (c);**

**Directions (26-30):**

V was born in the month having 30 days. Two persons were born between V and Q. More than three persons were born between X and P. P was born after Q. T was born before V in the month of 31 days.

So there are four possible cases –

| Case 1 | | Case 2 | | Case 3 | | Case 4 | |
|---|---|---|---|---|---|---|---|
| Month | Person | Month | Person | Month | Person | Month | Person |
| January | T | January | X | January | X | January | X |
| March | X | March | T | March | Q | March | Q |
| April | V | April | V | April | | April | |
| May | | May | | May | T | May | T |
| June | | June | | June | V | June | V |
| July | Q | July | Q | July | P | July | |
| August | P | August | P | August | | August | P |

Now, S was born immediately before R. This will eliminate Case 3 and Case 4. Now, T was not born on January. This will eliminate Case 1. So the final arrangement will be –

| Month | Person |
|---|---|
| January | X |
| March | T |
| April | V |
| May | S |
| June | R |
| July | Q |
| August | P |

**26. (d); 27. (a); 28. (b);**

**29. (b); 30. (e);**

**Directions (31-35):**
The machine rearranges one word and one number in each step. The "words" are arranged in the reverse alphabetical order as per they appear in the dictionary from the left end in the last step. Such that "food" will arrange first in step I, then "forest" in step II and so on. "numbers" are arranged in the decreasing order from the right end. It means smallest number will arrange first i.e. "16" then "33" and so on.

**Input: dish 17 cure 54 turns 43 mouse 72**
Step I: cure dish 54 turns 43 mouse 72 17
Step II: dish cure 54 turns mouse 72 17 43
Step III: mouse dish cure turns 72 17 43 54
Step IV: turns mouse dish cure 17 43 54 72

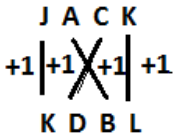
**31. (b); 32. (c); 33. (d);**

**34. (b); 35. (b);**

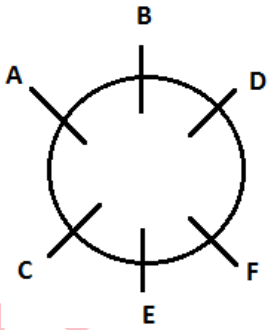
**36. (d);**

| B | R | A | T |
|---|---|---|---|
| 3 | 8 | 6 | 2 |

**37. (c);**




**Directions (38-40):**
All are facing centre.




**38. (d); 39. (b); 40. (d);**

## QUANTITATIVE APTITUDE

**41. (b);** $\frac{3}{4}$th work can be done by Ravi in $= \frac{27}{2}\ hrs$
$\therefore$ whole work completed by Ravi $= \frac{4}{3} \times \frac{27}{2} = 18$ h
And,
Whole work completed by Hira in $= \frac{3}{2} \times 8 = 12h$
$\therefore$ Required time $= \frac{18\times12}{18+12} = 7.2$ h

**42. (c);** Rita's father's age = 31 × 2 – 28 = 34 yrs
Rita's age after two yr $= \frac{100}{300} \times (36) = 12$ yr
$\therefore$ Rita's present age = 10 yr
$\therefore$ Raju's present age $= (10 - 2) \times \frac{75}{100} + 2 = 8$ yr

**43. (a);** Correct average $= \frac{42.5\times5-(44+36)+40+42}{5} = \frac{214.5}{5}$
$= 42.9$

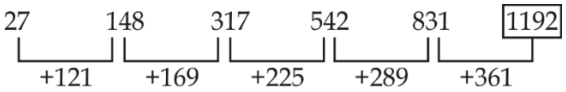
**44. (b);** Percentage of people in other activities
$= 100 - \left(\frac{50}{3} + \frac{100}{3} + 25\right) = 25\%$
$\because 25\ \% \rightarrow 450$
$\therefore 100\% \rightarrow \frac{450}{25} \times 100$
$\rightarrow 1800$
$\therefore$ Required answer $= \frac{50}{300} \times 1800 = 300$

**45. (c);** (A's profit) : (B's profit) : (C's profit)
= (13,200 × 4 + 14400 × 8) : (14400 × 4 + 12000 × 8) : (18000 × 12)
= 35 : 32 : 45
$\therefore$ total profit $= \frac{35+32+45}{45} \times 11250$
= Rs 28000

**46. (a);** Pattern is
126 + 8 × 1 = 126 + 8 = 134
134 + 8 × 3 = 134 + 24 = 158
158 + 8 × 5 = 158 + 40 = 198
198 + 8 × 7 = 198 +56 = 254
254 + 8 × 9 = 254 + 72 = 326

**47. (c);** Series is
2 × 2 +1 = 5
5 × 3 + 2 = 17
17 × 4 + 3 = 71
71 × 5 + 4 = 359
359 × 6 + 5 = 2159

**48. (b);**




**49. (d);** Pattern is
$16^2 - 1 = 255$
$18^2 - 1 = 323$
$20^2 - 1 = 399$
$22^2 - 1 = 483$
$24^2 - 1 = 575$
$26^2 - 1 = 675$

**50. (d);** Series is
4 × 0.5 = 2
2 × 1 = 2
2 × 1.5 = 3
3 × 2 = 6
6 × 2.5 = 15
15 × 3 = 45

**51. (e);** average no. of voter in city P, Q and U
$= \left(\frac{12+18+15}{3}\right)\% = 15\%$
So, average no. of voters in city P, Q and U equal to total no. of voters in city U (15%)

**52. (a);** required no. of voters $= 75000 \times \frac{20}{100} \times \frac{10}{100} + 75000 \times \frac{22}{100} \times \frac{12}{100} = 3480$

**53. (a);** required difference $= 75000 \times \frac{(18+22-12-13)}{100}$
$= 11250$

**54. (b);** required difference
$= 75000 \times \frac{15}{100} \times \frac{29}{45} - 75000 \times \frac{13}{100} \times \frac{13}{25} = 2180$

**55. (a);** In city T
Total no. of female who did not cast vote
$= 75000 \times \frac{22}{100} \times \frac{40}{100} \times \frac{20}{100} = 1320$
Total voters who did not cast vote
$= 75000 \times \frac{22}{100} - 13840 = 2660$
Total male who did not cast vote
$= 2660 - 1320 = 1340$
Required difference $= 1340 - 1320 = 20$

**56. (a);** $? = \frac{25}{100} \times 480 + \frac{2}{3} \times 420 - \frac{25}{200} \times 640$
$= 120 + 280 - 80 = 320$

**57. (b);** $? = 28 \div 7 \times 25 - 12 = 100 - 12 = 88$

**58. (e);** $? \times 5 = 361 + 1156 + 32 - 729$
$\Rightarrow ? = \frac{820}{5} \Rightarrow ? = 164$

**59. (d);** $\frac{?}{10} = 15.48 + 4.484 - 11.81$
$\Rightarrow ? = 8.154 \times 10 = 81.54$

**60. (b);** $? = 7018 + 7.07 = 7025.07$

**61. (a);** No. of ways $= {}^{7}C_{5} \times {}^{3}C_{2} = \frac{7\times6}{2\times1} \times 3 = 63$

**62. (a);** Let length of slower train = $\ell_1$
Length of faster train = $\ell_2$
$\therefore \ell_1 + \ell_2 = (5x - 4x) \times 30$
4x = speed of slower train
5x = speed of faster train
$= 30x$ ... (i)
And, $\ell_2$ = 5x × 4 = 20 x
$\therefore \ell_1 = 30x - 20x = 10x$
$\therefore \frac{\ell_1}{\ell_2} = \frac{10}{20} = \frac{1}{2}$

**63. (d);** Let speed of current = r km/h
∴ speed of boat in still water = 4r
A/q,
$\frac{45}{4r-r} + \frac{45}{4r+r} = 8 \Rightarrow \frac{15+9}{r} = 8 \Rightarrow$ r = 3 km/h

**64. (c);** Sum $= \frac{4000\times100}{12.5\times4} =$ Rs 8000
$\therefore$ CI $= 8000\left[\left(1 + \frac{4}{100}\right)^2 - 1\right]$
$= 51 \times 12.8 =$ Rs 652.8

**65. (a);** Speed in km/h of slower bus $= 20 \times \frac{18}{5}$
= 72 km/h
Speed in km/h of faster bus $= 25 \times \frac{18}{5} = 90$ km/h
∴ Required time $= \frac{72\times2}{90-72} = 8$h

**66. (c);** $? \simeq 21^2 + 32^2 - 40^2 + 27^2$
$\simeq 441 + 1024 - 1600 + 729 \simeq 594$

**67. (b);** $\frac{500}{100} \times ? \simeq \frac{35}{100} \times 400 + \frac{50}{100} \times 250$
$\Rightarrow ? \simeq \frac{265}{5} \Rightarrow ? \simeq 53$

**68. (d);** $\frac{?}{10} \simeq 12 \div 3 + 125 \div 5 \Rightarrow ? \simeq 290$

**69. (e);** $\frac{71}{100} \times ? \simeq 36 + 26 + 9 \Rightarrow ? \simeq 100$

**70. (e);** $? \simeq \frac{3700}{100} + \frac{2640}{30} - \frac{10}{12} \times 96$
$\simeq 37 + 88 - 80 \simeq 45$

**Sol (71-75):**

Number of students selected in Dena bank $= \frac{25}{300} \times 1500$
$= 125$

Number of students selected in Allahabad bank $= \frac{125}{\left(1-\frac{50}{300}\right)}$
$= 150$

Number of students selected in Corporation bank
$= 240 + 35 = 275$

Number of students selected in Canara bank $= 275 \times \frac{8}{11}$
$= 200$

Canara bank + Dena bank + SBI $= 3 \times 215 = 645$

So, number of students selected in SBI
$= 645 - (200 + 125) = 320$

Number of students selected in PNB $= 1500 - (125 + 240 + 150 + 275 + 200 + 320)$
$= 1500 - 1310 = 190$

**71. (b);** Required ratio $= \frac{200}{240} = \frac{5}{6}$

**72. (a);** Required percentage $= \frac{(320-240)}{240} \times 100$
$= 33.33\%$

**73. (a);** Required difference $= 275 - \frac{(200+190+150)}{3}$
$= 275 - \frac{540}{3} = 275 - 180 = 95$

**74. (d);** Required percentage $= \frac{275}{125} \times 100 = 220\%$

**75. (e);** Number of students selected in SBI = 320

**76. (c);** Let side of triangle = a
Side of square = b
$\therefore a^2 = \frac{800}{100} \times 8 \times 4$
a = 16 m
$\therefore$ perimeter of triangle $= \frac{3}{8} \times 64 = 24$ m

**77. (b);** In this case we need to select the probability of choosing one bag out of two given bags which will be $= \frac{1}{2}$
So the required probability
$= \frac{1}{2}$(Red ball from bag 1 + Red ball from bag 2)
$= \frac{1}{2}\left(\frac{7}{14} + \frac{5}{14}\right) = \frac{12}{28} = \frac{6}{14} = \frac{3}{7}$

**78. (b);** Let
$r_a \rightarrow$ radius of cylinders 'A'
$r_B \rightarrow$ radius of cylinders 'B'
$h_A \rightarrow$ height of cylinder 'A'
$h_b \rightarrow$ height of cylinder 'B'
ATQ,
$\frac{r_A}{r_B} = \frac{1}{2}$ & $\frac{h_A}{h_B} = \frac{2}{1}$
Required ratio $= \frac{\pi r_A^2 h_A}{\pi r_B^2 h_B} = \left(\frac{1}{2}\right)^2 \times \frac{2}{1} = \frac{1}{2}$

**79. (e);** In 6 min both pipes fill = (50 + 60) × 6 = 660 $m^3$
$\therefore$ required time $= \frac{(1260-660)}{60} = 10$ min

**80. (b);** CP of article $= \frac{100}{260} \times 520 =$ Rs 200
$\therefore$ S.p. of article $= \frac{156}{100} \times 200 =$ Rs 312

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## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $J < F \leq S > L \geq O = P \geq M$
**Conclusions:** **I.** $L < J$ **II.** $S > M$

**2.** **Statements:** $D \geq F \geq O = G < E \leq A \leq B$
**Conclusions:** **I.** $G \geq D$ **II.** $B < O$

**3.** **Statements:** $F \leq P = O \leq I \leq N > K \geq E$
**Conclusions:** **I.** $N \geq F$ **II.** $E > N$

**4.** **Statements:** $Y > Z \geq W = X \geq V \geq U < T$
**Conclusions:** **I.** $U < Z$ **II.** $Z = U$

**5.** **Statements:** $O \geq P = E > D < M \leq R < G$
**Conclusions:** **I.** $D < O$ **II.** $G > M$

**Directions (6-10):** Following questions are based on the five words given below, Study the following words and answer the following questions.
HUB INK WIN BUT POT
(The new words formed after performing the mentioned operations may not necessarily be a meaningful English word.)

**6.** If the given words are arranged in the descending order as they appear in a dictionary from left to right, which of the following will be fourth from the right end?
(a) HUB (b) INK (c) WIN
(d) BUT (e) POT

**7.** How many letters are there in the English alphabetical series between the first letter of the word which is fourth from the right end and the third letter of the word which is third from the left end?
(a) Two (b) Three (c) Four
(d) Five (e) None of these

**8.** If the positions of the first and the third alphabet in each of the words given are interchanged, then how many meaningful words will be formed?
(a) None (b) One (c) Two
(d) Three (e) Four

**9.** If in each of the given words, the third alphabet is replaced by its previous alphabet and first alphabet is replaced by its following alphabet as per the English alphabetical order, then how many words thus formed will have more than two vowels?
(a) None (b) One (c) Two
(d) Three (e) Four

**10.** If in each of the given words, every consonant is changed to its next letter and every vowel is changed to its previous letter according to the English alphabetical series, then in how many words, thus formed, at least one vowel will appear?
(a) None (b) Two (c) Three
(d) Four (e) None of these

**Directions (11-15):** In each of the questions below are given some statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer

**11.** **Statements:**
Some ice is cube
No cube is water
All water are glass
**Conclusions:**
I. Some glass are not cube
II. Some ice being water is a possibility
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**12.** **Statements:**
Some circle are radius
Some radius are diagonal
All diagonal are square
**Conclusions:**
I. Some square are circle
II. Some radius being square is a possibility
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**13. Statements**
All time is money
All money is status
No status is permanent
**Conclusions:**
I. All status is time
II. Some money is not permanent
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**14. Statements:**
Some exams are tough
No tough is easy
Some easy are scoring
**Conclusions:**
I. Some exams being easy is a possibility
II. All tough are not scoring
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**15. Statements**
No word is sheet
Some sheet are point
No point is table
**Conclusions:**
I. All word are not table
II. Some sheet are not table
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**Directions (16-20):** Study the information and answer the following questions:

Eight persons A, B, C, D, E, F, G and H are sitting in a row some are facing north and some are facing south (but not necessarily in the same manner).
(Note: Facing the same direction means if one is facing north then the other also faces north and vice versa. Facing opposite direction means if one is facing north then the other faces south and vice versa).

A sits fourth to the right of C and one of them sits at the extreme end of the row. Both A and C faces same direction. H sits to the immediate left of A and faces south. C faces opposite direction of H. Three persons sit between H and F. D sits to the immediate right of F.B is an immediate neighbor of H. Three persons sit between E and G. G is not at an extreme end of the row. E and G face same direction as F. B and D face same direction as C. Neither E nor G is an immediate neighbor of A.

**16.** Who among the following sits to the immediate left of E?
(a) B (b) C (c) D
(d) A (e) None of these

**17.** How many persons sit between A and E?
(a) None (b) One (c) Two
(d) Three (e) More than three

**18.** What is the position of H with respect to G?
(a) Second to the right
(b) Second to the left
(c) Immediate right
(d) Immediate left
(e) None of these

**19.** Who among the following pair sits at the extreme ends of the row?
(a) C, F (b) D, A (c) E, C
(d) A, E (e) None of these

**20.** How many persons face south?
(a) One (b) Two (c) Three
(d) Four (e) Cannot be determined

**Directions (21-23):** Study the following sequence and answer the given questions

Point D is 6m to the west of Point A. Point B is 10m to the south of Point D. Point C is 4m to the east of Point B. Point F is 5m to the north of Point C. Point G is exactly between Point D and Point B.

**21.** What is the direction of Point G with respect to Point A?
(a) Northeast (b) North (c) Southeast
(d) Southwest (e) Cannot be determined

**22.** How far is Point F from Point G?
(a) 5m (b) 6m (c) 4m
(d) 10m (e) Cannot be determined

**23.** What is the shortest distance between Point F and Point A?
(a) 4m (b) 5m (c) $\sqrt{27}$m
(d) $\sqrt{29}$m (e) Cannot be determined

**Directions (24-26):** Study the following information and answer the given questions.
In a family of seven members P is the father of Q, who is grandchild of R. T is married to P. G is grandmother of D, who is brother of Q. S is sister-in-law of T.

**24.** How is S related to D?
(a) Mother (b) Aunt (c) Sister
(d) Cousin (e) Cannot be determined

**25.** How is Q related to G?
(a) Son
(b) Daughter
(c) Grandson
(d) Granddaughter
(e) Cannot be determined

**26.** How many single members are there among the given family members?
(a) One
(b) Two
(c) Three
(d) More than three
(e) Cannot be determined

**27.** Raghu, a male person points towards a picture and says ,"She is the daughter of the wife of my father's only grandson". How is Raghu related to that person?
(a) Father (b) Uncle (c) Brother
(d) Grandfather (e) Grandson

**28.** In a row of 32 students, Neel is 24th from the left end. Eight persons sit between Neel and Nitin. All of them are facing north. What is the position of Nitin from the right end?
(a) 15th (b) 16th (c) 17th
(d) 18th (e) Cannot be determined

**29.** If F means '–', H means '×', G means '÷ ' and E means '+' then
25 G 5 H 8 F 15 E 4 = ?
(a) 5 (b) 29 (c) 43
(d) 21 (e) None of these

**30.** How many pairs of letters are there in the word" GLOBAL" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

**Directions (31-35):** Study the following information and answer the given questions.

Seven students A, B, C, D, E, F and G participate in three different sports viz. Cricket, Football and Hockey. At least two students participate in one sport. All of them like different subject viz. English Hindi, Geography, History, Chemistry, Biology and Computer (but not necessarily in the same order).

C likes Geography and participates in Cricket. The one who likes English participates in Football only with the one who likes Hindi. D likes History but do not participate in Cricket. E who likes Chemistry participates with the one who likes Biology. Neither A nor G likes Biology. B likes Computer and do not participate with C. A does not like English.

**31.** Who among the following participates in Cricket?
(a) A (b) D (c) E
(d) G (e) None of these

**32.** Who among the following participates in Football?
(a) G
(b) D
(c) The one who likes Computer
(d) F
(e) None of these

**33.** Who among the following pair participates in Hockey?
(a) A, B (b) A, G (c) B, F
(d) B, D (e) None of these

**34.** Which statement is true?
(a) F likes English
(b) G likes Hindi
(c) The one who likes Computer participates in Cricket
(d) G participates in Hockeys
(e) A participates in Football

**35.** Who among the following likes Hindi?
(a) A
(b) G
(c) F
(d) The one who participates in Cricket
(e) The one who participates in Hockey

**Directions (36-40):** Study the information and answer the following questions:

Eight persons A, B, C, D, E, F, G and H are sitting around a circular table. Some are facing inside and some are facing outside (not necessarily in the same order).
(Note: Facing the same direction means if one is facing inside then the other also faces inside and vice versa. Facing opposite direction means if one is facing inside then the other faces outside and vice versa).

C sits fourth to the left of F. G sits second to the right of F. Two persons sit between A and G. H sits third to the right of G. D sits to the immediate left of H. E sits second to the right of B. E is not an immediate neighbor of F. Immediate neighbors of C face same direction as G. D faces opposite direction of F. F faces inside.

**36.** Who among the following sit third to the left of E?
(a) F (b) D (c) A
(d) B (e) None of these

**37.** What is the position of H with respect to C?
(a) Third to the left
(b) Third to the right
(c) Immediate left
(d) Immediate right
(e) Cannot be determined

**38.** Who sits opposite to A?
(a) B (b) E (c) D
(d) H (e) None of these

**39.** How many persons face outside?
(a) Two (b) Three (c) Four
(d) Five (e) Cannot be determined

**40.** Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) A (b) D (c) G
(d) B (e) E

## QUANTITATIVE APTITUDE

**41.** A milkman buys some milk. If he sells it at Rs 5 per litre, he loses Rs 300, but when he sells it at Rs 6 per litre, he gains Rs 250. How much milk did he purchase?
(a) 550 lt (b) 300 lt (c) 250 lt
(d) 800 lt (e) 650 lt

**42.** In an election 8% of the voters did not cast their votes. In this election, there were only two candidates. The winner got 48% of the total votes and defeated his opponent by 1200 votes. The total number of voters in the election was ?
(a) 20000 (b) 30000 (c) 35000
(d) 25000 (e) 36000

**43.** Bhavya have 10,000 Rs. He invested some amount in Scheme 'A' which offers 15% p.a. at SI and rest in Scheme 'B' which offers 20% p.a. at CI. Interest earned form scheme 'A' after 2 years is 780Rs more than interest earned form scheme 'B' after 2 years. Find the amount invested in Scheme 'B'?
(a) 8000 Rs (b) 7000 Rs (c) 3000 Rs
(d) 2000 Rs (e) 5000 Rs

**44.** A train travels 60% faster than a car. Both start from point A at the same time and reach point B, which is 160 km away at the same time. If on the way the train stop for 20 minutes at station, then find the speed (in km/hr) of the train ?
(a) 144 (b) 168 (c) 198
(d) 288 (e) 248

**45.** A takes three times as long as B and C together take to do a job.. If all the three working together and complete the job in 24 days, then find in how many days A will complete the job alone?
(a) 100 (b) 96 (c) 84
(d) 90 (e) 104

**46.** Find the ratio of area of a circle to area of square if perimeter of circle and square is equal?
(a) 11 : 14 (b) 11 : 4 (c) 8 : 11
(d) 14 : 11 (e) 2 : 4

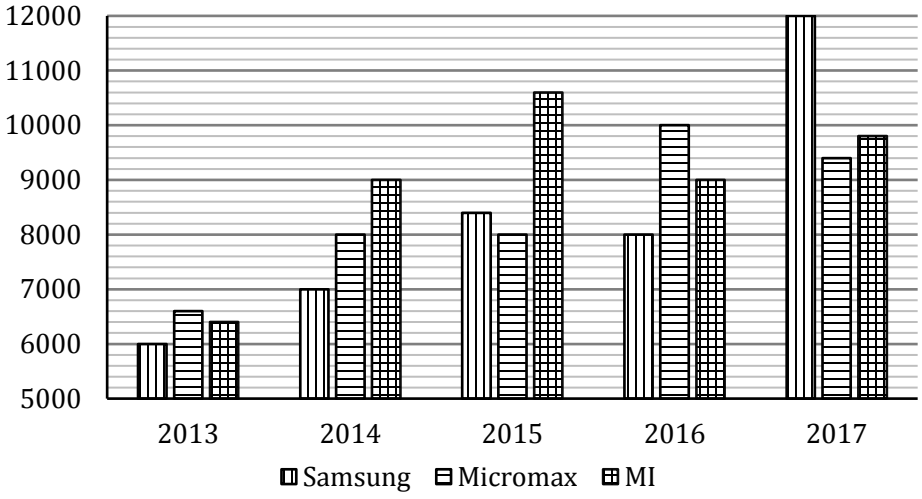
**47.** The average score of a cricketer in 8 innings is 44. He had scored 60, 24, x, 50, 73, y, z, 13 respectively in those innings. Find the average of x, y and z?
(a) 40 (b) 44 (c) 48
(d) 52 (e) 42

**48.** A librarian purchased 50 story books for his library. But he saw that he could get 12 more books, if he spend Rs. 128 more and the average price per book would be reduced by Rs.2. Then find average price (in Rs.) of each book he bought?
(a) 15 (b) 25 (c) 20
(d) 21 (e) 23

**49.** A Jar contain water and milk in the ratio of 2: 3. Some milk is added in the Jar whose amount is equal to 30% of water present in the Jar. After this some water is added whose amount is equal to 10% of quantity of milk present in Jar presently. What is the new ratio of water and milk in the Jar.
(a) 59 : 90 (b) 11 : 18 (c) 90 : 59
(d) 18 : 11 (e) 57 : 67

**50.** Marks scored by Sumit is 12.5% more than Sahil's marks. Ajay got $6\frac{2}{3}$% more marks then Sumit's. If difference between marks scored by Ajay and Sahil is 40, then find the total marks scored by all three.
(a) 665 (b) 450 (c) 555
(d) 745 (e) 625

**Directions** (51-55): The given bar graph shows the number of phones (Samsung, Micromax and MI) sold by Store 'A' in different 5 different years. Study the graph and answer the following questions



**51.** Samsung phones sold in 2014 and MI phones sold in 2016 together is what percent more/loss then Samsung phones sold in 2016.
(a) 137.5% (b) 75% (c) 100%
(d) 84% (e) 80%

**52.** Find the difference between average number of Samsung phones sold to average number of Micromax mobile sold in given five years by store A?
(a) 120 (b) 82 (c) 98
(d) 136 (e) 125

**53.** If Samsung, Micromax and MI phones sold in 2013 is 20%, 10% and 0% respectively more than these mobiles sold in 2012 respectively, then, find average number of phones sold in 2012 of all three companies by store A
(a) 4000 (b) 6275 (c) 5600
(d) 5800 (e) 5000

**54.** In 2015, Samsung phones sold to male customers and female customers is in the ratio 7 : 5. In 2017, Samsung phones sold to male customers and female customers in the ratio 13 : 11. Find the ratio of male customers to female customers who bought Samsung in 2015 and 2017 together.
(a) 17 : 13 (b) 19 : 15 (c) 31 : 19
(d) 11 : 15 (e) 11 : 17

**55.** If in 2015, $44\frac{4}{9}\%$ customer of store 'A' are female and male customer to female customer ratio of Samsung and Micromax in 2015 is 7 : 5 and 7 : 9 respectively then, find the female customers who bought MI phones in 2015.
(a) 4000 (b) 3500 (c) 6000
(d) 5400 (e) 4800

**56.** There are 4 Red, 2 Green & 2 Blue ball in a bag. If one ball drawn at random from the bag, then find the probability of the ball drawn out is not blue?
(a) $\frac{1}{4}$ (b) $\frac{3}{8}$ (c) $\frac{3}{6}$
(d) $\frac{5}{8}$ (e) $\frac{3}{4}$

**57.** The sum of 30% of x and 45% y is equal to zero and the difference between 60% of x and 20% of y is equal to 22 then find the sum of x and y ?
(a) 25 (b) 15 (c) 10
(d) 30 (e) 20

**58.** Ratio of the speeds of Ajay and Ramesh is 2 : 5. If Ajay covers 240 km in 8hrs then in how much time Ramesh will cover 780 km of distance?
(a) 10hrs 24minutes
(b) 5 hrs 48 minutes
(c) 8 hrs 40minutes
(d) 12 hrs 20 minutes
(e) 10 hrs and 36 minutes

**59.** If 6 women or 8 Boys can do a price of work in 12 days then in how many days 3 women and 5 boys can do the same price of work?
(a) $7\frac{1}{3}$ days (b) $6\frac{1}{3}$days (c) $10\frac{2}{3}$ days
(d) $12\frac{4}{5}$ days (e) $14\frac{2}{3}$ days

**60.** A father has 3 children with at least one boy. The probability that he has 2 boy and one girls
(a) $\frac{1}{4}$ (b) $\frac{1}{3}$ (d) $\frac{2}{3}$
(d) $\frac{3}{8}$ (e) $\frac{5}{8}$

**Directions (61-65):** Find the wrong number in the following number series:

**61.** 256, 384, 576, 864, 1296 , 1944 , 2924
(a) 1944 (b) 864 (c) 1296
(d) 2924 (e) 384

**62.** 175, 900, 1143, 1224, 1251, 1260, 1263
(a) 175 (b) 900 (c) 1143
(d) 1260 (e) 1263

**63.** 20, 32, 60, 150, 450, 1575, 6300
(a) 60 (b) 20 (c) 1575
(d) 6300 (e) 32

**64.** 824, 568, 440, 376, 344, 330, 320
(a) 824 (b) 330 (c) 568
(d) 344 (e) 320

**65.** 90, 177, 268, 373, 499, 653, 842
(a) 653 (b) 177 (c) 90
(d) 842 (e) 499

**Directions (66–75):** simplify the following problems and find the value of (?)

**66.** $\frac{750\div25\times2.5}{384\div32+0.5}\times 2 = ?$
(a) 6 (b) 12 (c) 18
(d) 3 (e) 7

**67.** 80% 170 + 75% 216−10 =? × 6
(a) 36 (b) 12 (c) 63
(d) 54 (e) 48

**68.** $\sqrt{289}+\sqrt{338\times32} = ?+\sqrt{121}$
(a) 112 (b) 102 (c) 104
(d) 108 (e) 110

**69.** $\frac{15^2+31^2+15\times62}{11^2+12^2+11\times24} = (?)^2$
(a) 7 (b) 4 (c) 2
(d) 8 (e) 10

**70.** $28\frac{4}{7}\times16\frac{5}{8}-? = 36\times12-8\frac{4}{7}\times2\frac{1}{3}$
(a) 43 (b) 63 (c) 73
(d) 83 (e) 93

**71.** 62% of $\frac{1600}{31}$ + 36% of 1300 = ? × 4 – 92
(a) 296 (b) 148 (c) 152
(d) 163 (e) None of these

**72.** $37\frac{1}{2}\%$ of 600 + $14.\frac{2}{7}\%$ of 210 = ?
(a) 250 (b) 260 (c) 255
(d) 265 (e) 280

**73.** $5\frac{1}{4} + 7\frac{1}{8} + 9\frac{1}{6} = 3\frac{1}{2} + ? + 7\frac{1}{6}$
(a) $10\frac{7}{8}$ (b) $12\frac{3}{4}$ (c) $17\frac{2}{3}$
(d) $7\frac{6}{7}$ (e) $7\frac{3}{4}$

**74.** $3^5 \times 2^6 + 81 \times 2^{(?)} = 16200$
(a) 2 (b) 3 (c) 4
(d) 5 (e) 6

**75.** $9^7 \times 3^{12} = 729 \div 81 \times 3^{?} \times 3^7$
(a) 12 (b) 15 (c) 17
(d) 19 (e) 21

**Direction (76 – 80):** What approximate value should come in the place of question (?) marks in the given question:

**76.** 540.05% of 9.99 + 14.89 × 4.02 = ? × 2
(a) 51 (b) 53 (c) 57
(d) 60 (e) 62

**77.** $\sqrt[3]{215.99 \times 8.07} + \sqrt{16.11 \times 24.82} = \sqrt{?\times 4}$
(a) 16 (b) 256 (c) 4
(d) 512 (e) 216

**78.** $3.89 \times \sqrt[3]{1727.99} - \frac{11.92\times14.11}{6.91\times2.01} = \sqrt{?} + \sqrt{168.87}$
(a) 676 (b) 324 (c) 529
(d) 729 (e) 1024

**79.** ?% of 1399.87 + $(49.88)^2$ = 269.99 + 19.99% of 11850.11
(a) 7 (b) 8 (c) 5
(d) 10 (e) 12

**80.** $\frac{728.87}{(2.99)^{3.99}} + ? = \frac{624.92\times4.88}{(4.89)^2}$
(a) 112 (b) 116 (c) 119
(d) 121 (e) 123

# Mock 22 : Solutions

## REASONING ABILITY

**Direction (1-5):**

**1. (b);** **I.** L < J (False) **II.** S > M (True)

**2. (d);** **I.** G ≥ D (False) **II.** B < O (False)

**3. (a);** **I.** N ≥ F (True) **II.** E > N (False)

**4. (c);** **I.** U < Z (False) **II.** Z = U (False)

**5. (e);** **I.** D < O (True) **II.** G > M (True)

**Directions (6-10):**

**6. (e);** POT

**7. (c);** FOUR letters between I and N i.e. J, K, L, M

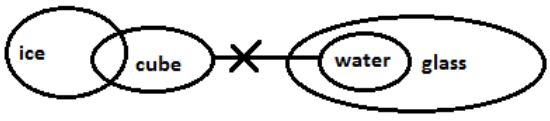
**8. (c);** TWO i.e. TUB and TOP

**9. (b);** One i.e. IUA

**10. (e);** All words will have at least one vowel. i.e. ITC, HOL, XHO, CTU, QNU

**Directions (11-15):**

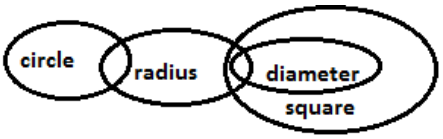
**11. (a);**




For I – Since, all water is glass and no water is cube therefore some glass are not cube will hold true. Hence, Conclusion I can be concluded.

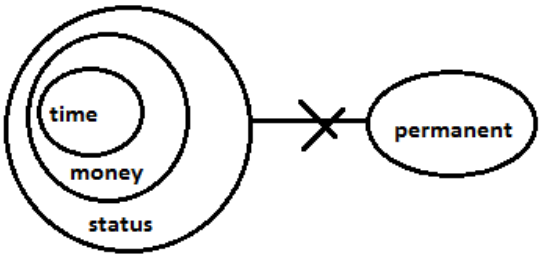
For II – Since, there is no direct relation between ice and water therefore possibility case will hold true. Hence, Conclusion II can be concluded.

**12. (e);**




For I – There is no direct relation between circle and square. Hence, Conclusion I cannot be concluded.
For II – From Venn diagram it is clear that some radius are square. So the possibility case will not hold true. Hence, Conclusion II cannot be concluded.

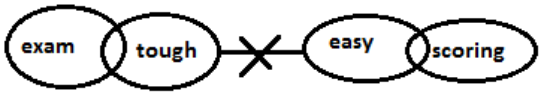
**13. (c);**




For I –Since all time is status but it cannot be said that all status will be time. Hence, Conclusion I cannot be concluded.

For II – Since all money is status and no status is permanent therefore some money is not permanent will hold true. Hence, Conclusion II can be concluded.

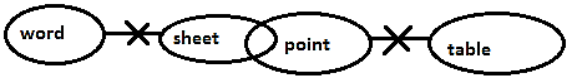
**14. (d);**




For I – Since, there is no direct relation between element exam and easy, therefore possibility case will hold true. Hence, Conclusion I can be concluded.

For II – Since, there is a no direct relation between tough and scoring, therefore Conclusion II will not hold true. Hence, Conclusion II cannot be concluded.

**15. (c);**



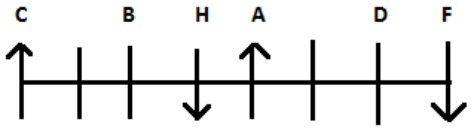

For I – No conclusion can be drawn from two negative statements. Hence, Conclusion I cannot be concluded.

For II – Since, some sheet are point and no point is table, therefore some sheet which are point cannot be table. Hence, Conclusion II can be concluded.

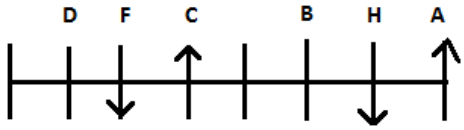
**Directions (16-20):**

C faces opposite direction of H. H faces south. A sits fourth to the right of C and one of them sits at the extreme end of the row. Both A and C face same direction (i.e. both faces north). Three persons sit between H and F. D sits to the immediate right of F.B is an immediate neighbor of H. There are two possible cases

Case I

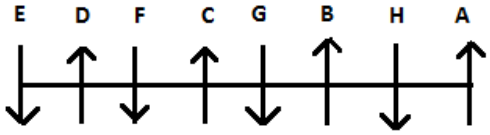



Case II




Neither E nor G is an immediate neighbor of A. This will eliminate Case I.

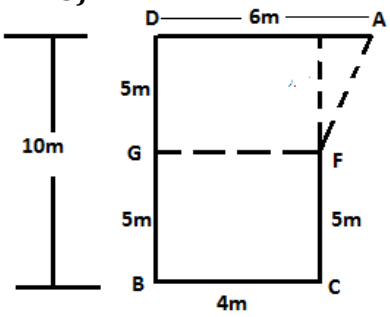
Three persons sit between E and G. G is not at an extreme end of the row. E and G face same direction as F. B and D face same direction as C. So final arrangement will be

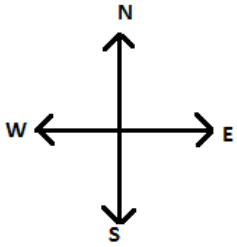



**16. (c); 17. (e); 18. (b);**

**19. (d); 20. (d);**

**Directions (21-23):**



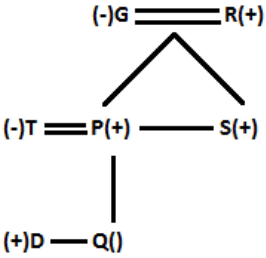




**21. (d);** Southwest

**22. (c);** 4m

**23. (d);** $\sqrt{5^2 + 2^2} = \sqrt{29}$ m

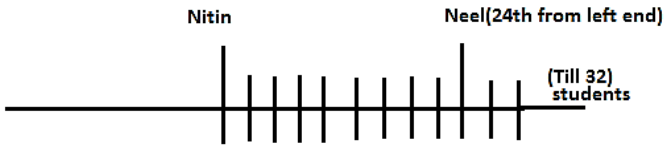
**Directions (24-26):**




**24. (b); 25. (e); 26. (c);**

**27. (d); Grandfather**

**28. (d);**

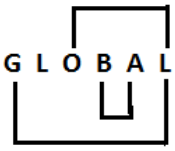



Neel's position from right end = (33-24) =9th from right end

Eight persons sit between Neel and Nitin so Nitin's position from right hand = (9+9) = 18th from right end. Since there are only eight persons to the right of Neel, Nitin cannot sit on the right side of Neel.

**29. (b);** $(25 \div 5 \times 8 - 15 + 4) = 29$

**30. (d);** Three




**Directions (31-35):**

C likes Geography and participates in Cricket. D likes History but do not participate in Cricket, i.e. D participates in Hockey (Since only the one who likes English and Hindi participates in Football). E likes Chemistry. B likes Computer and do not participate with C, i.e. B participates in Hockey.

| Sports | Students | Subjects |
|---|---|---|
| | A | |
| Hockey | B | Computer |
| Cricket | C | Geography |
| Hockey | D | History |
| | E | Chemistry |
| | F | |
| | G | |

Now, neither A nor G likes Biology, i.e. F likes Biology. E participates with the one who likes Biology so, E participate in Cricket. A does not like English so G likes English and A likes Hindi. So the final arrangement is :

| Sports | Students | Subjects |
|---|---|---|
| Football | A | Hindi |
| Hockey | B | Computer |
| Cricket | C | Geography |
| Hockey | D | History |
| Cricket | E | Chemistry |
| Cricket | F | Biology |
| Football | G | English |

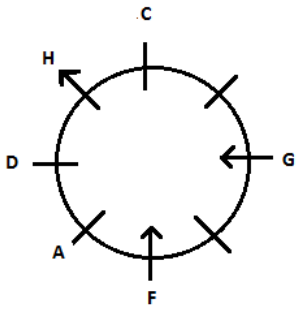
**31. (c);** **32. (a);** **33. (d);**

**34. (e);** **35. (a);**

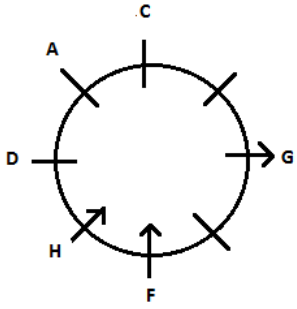
**Directions (36-40):**

C sits fourth to the left of F. F faces inside. G sits second to the right of F. Two persons sit between A and G. H sits third to the right of G. D sits to the immediate left of H. We get two possibilities

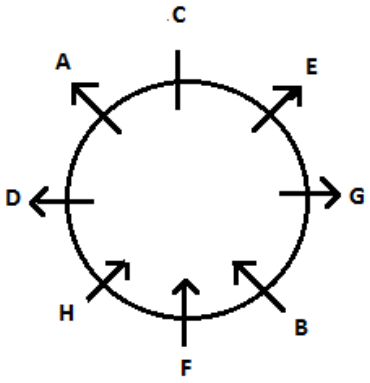
**Case 1**




**Case 2**




Immediate neighbors of C face same direction as G. This will eliminate Case 1(Since in Case 1 both are facing opposite direction). E sits second to the right of B. E is not an immediate neighbor of F. D faces opposite direction of F. Direction of C is not known. So the final arrangement will be:




**36. (b);** **37. (e);** **38. (a);**

**39. (e);** **40. (d);**

## QUANTITATIVE APTITUDE

**41. (a);** Let the milkman buy = y litre of milk.
At the rate of = x Rs./litre
$xy - 5y = 300$ ... (i)
$6y - xy = 250$ ... (ii)
from solving equation (i) & (ii)
y = 550 litre

**42. (b);** Let the Total No. of voters = 100 x
Total No. of voters casted vote = 100x – 8x = 92x
Winner has received = 48x
Another candidate received = 92x – 48x = 44x
Given, 48x – 44x = 1200
x = 300
Total no. of voters = 300 × 100 = 30000

**43. (c);** Let Amount invested by Bhavya in Scheme 'B'= Rs x
Amount invested by Bhavya in Scheme 'A'= Rs (10000 – x)
ATQ,

$$\frac{(10000-x)\times 2\times 15}{100} - x\left[\left(1+\frac{20}{100}\right)^2 - 1\right] = 780$$

$\frac{(10000-x)\times3}{10} - x\left[\left(\frac{144}{100}-1\right)\right] = 780$

$\frac{30000}{10} - \frac{3x}{10} - \frac{44x}{100} = 780$

On Solving x = 3000 Rs.

**44. (d);** let the speed of train = 160x km/hr

Let the speed of car = 100x km/hr

$\frac{160}{160x} + \frac{20}{60} = \frac{160}{100x}$

$\frac{1}{x} + \frac{1}{3} = \frac{8}{5x}$

$\frac{1}{3} = \frac{8-5}{5x}$

$x = \frac{9}{5}$

Speed of the train = $160 \times \frac{9}{5} = 32 \times 9 = 288$ km/hr

**45. (b);** $\frac{3}{A} = \frac{1}{B} + \frac{1}{C}$ ... (i)

$\frac{4}{B} = \frac{1}{A} + \frac{1}{C}$ ... (ii)

$\frac{1}{A} + \frac{1}{B} + \frac{1}{C} = \frac{1}{24}$ ... (iii)

From eqn (i) and (iii)

$\frac{4}{A} = \frac{1}{24}$

A= 96 Days

**46. (d);** Let radius of circle and side of square are 'r' and 'a' respectively

Perimeter of Circle and square is equal

$\Rightarrow 2\pi r = 4a$

$a = \frac{\pi r}{2}$

Required Ratio = Area of circle : Area of square

$= \pi r^2 : a^2 = \pi r^2 : \left(\frac{\pi}{2}r\right)^2 = 14 : 11$

**47. (b);** $\frac{60+24+50+73+13+x+y+z}{8} = 44$

$x + y + z = 352 - 220$

$x + y + z = 132$

Average of (x, y & z) = $\frac{x+y+z}{3} = \frac{132}{3} = 44$

**48. (d);** Let the average = x Rs.

$50x + 128 = 62(x - 2)$

$50x + 128 = 62x - 124$

$12x = 252$

$x = 21$ Rs.

**49. (a);** Let quantity of water and milk present in jar be 200x and 300x

1. Milk added 30% of quantity of water → $\frac{30}{100} \times 200x = 60$

   Now, milk quantity → 360x
2. water added milk present 10% of quantity of = $\frac{10}{100} \times 360x = 36x$

Water quantity become = 236x

New ratio of water : Milk = 236x : 360x = 59 : 90

**50. (a);** Let Sahil's marks = 80x

So, Sumit's marks = $\frac{80x\times112.5}{100} = 90x$

So, Ajay's marks = $\frac{90x\times106\frac{2}{3}}{100} = 96x$

ATQ,

Ajay's marks is 40 more than the Sahil's marks

$\Rightarrow 96x - 80x = 40$

$\Rightarrow x = 2.5$

Total marks scored by all three = (80 + 90 + 96) × 2.5 =266× 2.5 =665

**51. (c);** Samsung phones sold in 2014 = 7000

MI phones sold in 2016 = 9000

Samsung phones sold in 2016 = 8000

Required % = $\frac{(7000+9000)-8000}{8000} \times 100\% = 100\%$

**52. (a);** Average of Samsung phones sold

$= \frac{6000+7000+8400+8000+12000}{5} = 8280$

Average of Micromax phones sold

$= \frac{6600+8000+8000+10000+9400}{5} = 8400$

Required difference = 8400 – 8280 = 120

**53. (d);** Samsung phones sold in 2012 = $\frac{6000\times100}{120} = 5000$

Micromax phones sold in 2012 = $\frac{6600\times100}{100}$

$= 6000$

MI phones sold in 2012 = 6400

So, Average number of phones sold in 2012

$= \frac{5000+6000+6400}{3} = \frac{17400}{3} = 5800$

**54. (b);** Total customers who bought Samsung phones in 2015 = 8400

Male customers who bought Samsung phones in 2015 = $\frac{7}{12} \times 8400 = 4900$

Females customers who bought Samsung phones in 2015 = 8400 – 4900 = 3500

Total customers who bought Samsung phones in 2017 = 12000

Male customers who bought Samsung phones in 2017 = $12000 \times \frac{13}{24} = 6500$

Female customers who bought Samsung phones in 2017 = 12000 – 6500 = 5500

Required ratio = $\frac{4900+6500}{3500+5500} = \frac{11400}{9000} = 19 : 15$

**55. (a);** Total customer in 2015 = 8400 + 8000 + 10600 = 27000

Total female customers in 2015 = $\frac{4}{9} \times 27000$

$= 12000$

Female customers who bought Samsung phones in 2015

$= \frac{5}{12} \times 8400 = 3500$

Female customers who bought Micromax phones in 2015

$= \frac{9}{16} \times 8000 = 4500$

So, female customers who bought MI phones = 12000 – (3500 + 4500) = 4000

**56. (e);** Probability of drawn ball being blue $= \frac{2}{8} \Rightarrow \frac{1}{4}$

Probability of drawn ball being not blue $= 1-\frac{1}{4}$

$= \frac{3}{4}$

**57. (c);** $30x + 45y = 0$

$6x + 9y = 0$

$2x = -3y$ ... (i)

$\frac{60x}{100} - \frac{20y}{100} = 22$

$6x - 2y = 220$ ... (ii)

From equation (1) & (2)

$-9y - 2y = 220$

$-11y = 220$

$y = -20$

$x = 30$

Hence, $x + y = 10$

**58. (a);** Speed of Ajay $= \frac{240}{8}$ km/hr $= 30$ km/hr

Speed of Ramesh $= \frac{30}{2} \times 5 = 75$ km/hr

Time required, traveling 780 km by Ramesh,

$= \frac{780}{75} = 10.4$

10.4 = 10 hrs 24mins.

**59. (c);** Let the work done by each boy and a woman in a day is B and W units respectively.

$6W = 8B$

$\frac{W}{B} = \frac{4}{3}$

Efficiency of women: Boys = 4: 3

Total work if each women does 4 units of work each day or boy will be 3 units each day ⇒

$= 4 \times 6 \times 12$ or $= 3 \times 8 \times 12$

= 288 units = 288 units

Let 'D' Days are required to finish the entire work when 3women and 5 boys will work on it,

$D \times [3W + 5B] = 288$

$D[3 \times 4 + 5 \times 3] = 288$

$D[27] = 288$

$d = \frac{288}{27} = 10\frac{2}{3}$ days.

**60. (b);** Total no. of possible cases = 3

1) 1 boy 2 girl

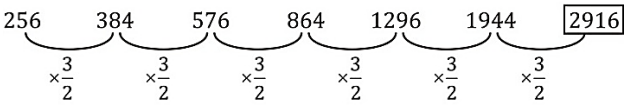
2) 2 boy 1 girl

3) 3 boy 0 girl

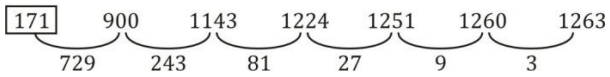
Desired case = 2 boy, 1 girl

Probability $= \frac{1}{3}$

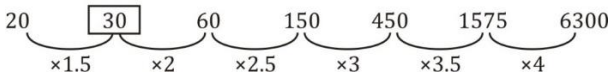
**61. (d);**



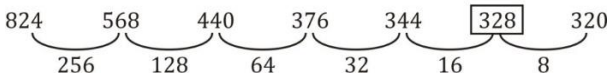

**62. (a);**



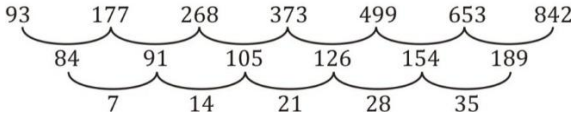

**63. (e);**




**64. (b);**




**65. (c);**




**66. (b);** $\frac{30 \times 2.5}{12+0.5} \times 2 = ?$

$\frac{75}{12.5} \times 2 = ?$

$12 = ?$

**67. (e);** $\frac{80 \times 170}{100} + \frac{3}{4} \times 216 - 10 = ? \times 6$

$136 + 162 - 10 = ? \times 6$

$\frac{288}{6} = ?$

$48 = ?$

**68. (e);** $17 + \sqrt{169 \times 2 \times 2 \times 16} = ? + 11$

$17 + 104 = ? + 11$

$110 = ?$

**69. (c);** $\frac{(15+31)^2}{(11+12)^2} = (?)^2$

$\left[\frac{46}{23}\right]^2 = (?)^2$

$4 = ?^2$

$? = 2$

**70. (b);** $\frac{200}{7} \times \frac{133}{8} - ? = 432 - \frac{60}{7} \times \frac{7}{3}$

$25 \times 19 - ? = 432 - 20$

$? = 63$

**71. (b);** $32 + 468 = ? \times 4 - 92$

$32 + 468 + 92 = ? \times 4$

$\frac{592}{4} = ?$

$? = 148$

**72. (c);** $\frac{3}{8} \times 600 + \frac{1}{7} \times 210 = 225 + 30 = 255$

**73. (a);** $21 + \frac{1}{4} + \frac{1}{8} + \frac{1}{6} = 10 + \frac{1}{2} + \frac{1}{6} + ?$

$21 + \frac{13}{24} = 10 + \frac{2}{3} + ?$

$11 + \frac{13}{24} - \frac{2}{3} = ?$

$11 - \frac{1}{8} = ?$

$\frac{87}{8} = ?$

$? = 10\frac{7}{8}$

**74. (b);** $15552 + 81 \times 2^{(?)} = 16200$
$81 \times 2^{(?)} = 648$
$2^{?} = \frac{648}{81}$
$2^{?} = 8$
$? = 3$

**75. (c);** $3^{14} \times 3^{12} = 9 \times 3^{?} \times 3^{7}$
$\frac{3^{14} \times 3^{12}}{3^{2} \times 3^{7}} = 3^{?}$
$3^{17} = 3^{?}$
$? = 17$

**76. (c);** $\frac{10 \times 540}{100} + 15 \times 4 = ? \times 2$
$54 + 60 = ? \times 2$
$\frac{114}{2} = ?$
$57 = ?$

**77. (b);** $\sqrt[3]{216 \times 8} + \sqrt{16 \times 25} = \sqrt{? \times 4}$
$6 \times 2 + 4 \times 5 = \sqrt{? \times 4}$
$\frac{32}{2} = \sqrt{?}$
$? = 256$

**78. (c);** $4 \times 12 - \frac{12 \times 14}{7 \times 2} = \sqrt{?} + 13$
$48 - 6 \times 2 = \sqrt{?} + 13$
$36 - 13 = \sqrt{?}$
$23 = \sqrt{?}$
$? = 529$

**79. (d);** $?\%$ of $1400 + (50)^2 = 270 + 20\%$ of $11850$
$?\%$ of $1400 + 2500 = 270 + \frac{11850}{5}$
$?\%$ of $1400 = 2640 - 2500$
$?\%$ of $1400 = 140$
$? = 10$

**80. (b);** $\frac{729}{3^4} + ? = \frac{625 \times 5}{5^2}$
$\frac{729}{81} + ? = 125$
$? = 116$

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# Mock 24

# IBPS RRB Clerk Prelims

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $P < R \leq M = O > S \leq V > Y$
**Conclusions:** **I.** $O > P$ **II.** $S > R$

**2.** **Statements:** $A \geq B > D = F < E \leq C$
**Conclusions:** **I.** $B > E$ **II.** $D < C$

**3.** **Statements:** $V = W \geq X \geq Y < Z \leq U$
**Conclusions:** **I.** $Y < V$ **II.** $V = Y$

**4.** **Statements:** $M \geq N = O > P \leq R > T$
**Conclusions:** **I.** $R < M$ **II.** $N < R$

**5.** **Statements:** $F < G \leq I < J > H = K \geq L$
**Conclusions:** **I.** $G < J$ **II.** $L < J$

**Directions (6-10):** In each of the questions given below, a group of digits/letter is given followed by four combinations of symbols numbered (a), (b), (c) and (d). You have to find out which of the four combinations correctly represents the group of digits/letters based on the symbol codes and the conditions given below. If none of the four combinations represents the group of digits correctly, give (e) i.e. 'None of these' as the answer.

| Digit | W | U | 2 | 0 | J | M | 7 | D | L | P | 9 | X | 4 | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | ® | £ | µ | ∞ | ≠ | © | @ | # | $ | & | ^ | * | % | + |

Condition for coding the group elements:
(i) If the first letter is Consonant and the last digit is perfect square, then both are to be coded as ^.
(ii) If the first digit is an odd number and the last letter is consonant, then both are to be coded by the code of the last element.
(iii) If the first letter is Vowel and the last element is a number, then the code of first and last elements are to be interchanged.
(iv) If the first digit and the last digit are even number, then the obtained code will be reversed.

**6.** D9UPS4
(a) #^£&+% (b) ^#£&+^ (c) ^^£&+%
(d) ^^£&+^ (e) None of these

**7.** 9W0JX7
(a) @®∞≠*@ (b) ^®∞≠*@ (c) ^@∞≠*@
(d) ^®∞≠*® (e) None of these

**8.** U47LJ0
(a) £%@$≠∞ (b) ∞%$@≠£ (c) ∞%@$≠£
(d) ∞%≠$@£ (e) None of these

**9.** 4MD0W2
(a) %©#∞®µ (b) µ©#∞®% (c) µ©#∞®@
(d) µ®∞#©% (e) None of these

**10.** 7PU49M
(a) ©&£%^© (b) @&£%^@ (c) ©&%£^@
(d) ©&£^%© (e) None of these

**Directions (11-15):** Study the information and answer the following questions:

Eight persons A,B,C,D,E,F,G, and H are sitting in a row facing north. No two persons are sitting adjacent to each other according to the English alphabet (i.e. A is not next to B, B is not next to A and C and so on). A sits at one of the ends. Three persons sit between A and C, who is immediate left to F. Four persons sit between E and D, none of them sits at any end. No one sits between B and G.

**11.** Who among the following sit immediate right to G?
(a) A (b) F (c) C
(d) B (e) none of these

**12.** How many persons sit between A and E?
(a) none (b) one (c) two
(d) three (e) more than three

**13.** Four of the following five are alike and form a group, who among the following does not belongs to that group?
(a) H (b) F (c) C
(d) B (e) G

**14.** Who among the following sit 3rd right to the one who is 2nd from the left end?
(a) A (b) F (c) C
(d) B (e) G

**15.** If in a certain way B is related to A , D is related to C, then who among the following is H related to?
(a) A (b) F (c) C
(d) B (e) G

**Directions (16-20):** In each of the questions below are given some statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer

**16. Statements:**
Some rice is sugar
Some sugar is milk
No milk is water
**Conclusions:**
I. Some sugar is not water.
II. All rice being water is a possibility.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**17. Statements:**
All laptop are camera
All camera are mobile
No laptop is charger
**Conclusions:**
I. Some camera being laptop is a possibility
II. Some mobile is not charger
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**18. Statements:**
No mouse is keyboard.
Some keyboard is pointer
All pointer is monitor.
**Conclusions:**
I. No keyboard is monitor.
II. Some mouse can never be pointer
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**19. Statements:**
All truck is car.
Some truck is road
All road is cycle.
**Conclusions:**
I. Some road being car is a possibility
II. Some cycle is car.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**20. Statements:**
All white are red
All red are blue
Some black are red
**Conclusions:**
I. Some black is blue.
II. Some red are not white.
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**Directions (21-25):** Study the following number sequence and answer the questions following it.
4 5 2 7 8 2 9 7 2 1 5 6 8 1 3 2 5 4 7 6 8 9 6 1 3 5 2 8 4 4

**21.** How many even numbers are there in the numeric series which are immediately preceded by a number, which is a whole square?
(a) One (b) Two (c) Three
(d) More than three (e) None of these

**22.** If all the odd numbers are dropped from the series, which number will be fifth to the right of seventh number from the left end?
(a) 2 (b) 8 (c) 6
(d) 4 (e) None of these

**23.** If 1 is replaced by 2 and 4 is replaced by 5 in the given number series, then which number will be fourth to the left of seventeenth number from the right end?
(a) 1 (b) 2 (c) 3
(d) 5 (e) 6

**24.** If the position of the 1st and the 16th number, the 2nd and the 17th number, and so on up to the 15th and the 30th number are interchanged, than which number will be 8th to the right of 17th number from the right end?
(a) 5 (b) 6 (c) 8
(d) 9 (e) None of these

**25.** How many total odd number/s which is/are immediately preceded by a 'perfect square' are there in the above sequence?
(a) Four (b) Five (c) Three
(d) Seven (e) None of these

**Direction (26-30):** Study the following information carefully and answer the question given below-

Seven people viz. A, B, C, D, E, F and G lives in a Building on eight different floors such as ground floor is numbered one , the floor just above is numbered 2 and so on till top floor numbered as eight but not necessarily in the same order. One of the floors is vacant.
There is a gap of more than three floors between D and B. D lives above B but not on top floor. C lives immediately above B. E lives on floor number 4. F lives immediately below E. A lives above G, who lives on an even numbered floor.

**26.** Who among the following lives on ground floor?
(a) B (b) G (c) F
(d) A (e) None of these

**27.** Who among the following lives immediately below the vacant floor?
(a) G (b) A (c) E
(d) D (e) None of these

**28.** How many persons lives between D and C?
(a) One (b) Three (c) Four
(d) Two (e) None of these

**29.** Who among the following lives on Top floor?
(a) A (b) D (c) F
(d) G (e) None of these

**30.** Which of the following floor is vacant?
(a) 8th (b) 6th (c) 2nd
(d) 1st (e) 5th

**31.** In a row of students facing South, Ravi is fifteenth from the left end and is fourth to the left of Shiva, who is sixth from the right end. How many total number of students are there in the row?
(a) 25 (b) 26 (c) 24
(d) 28 (e) 27

**32.** Jay leaves his home and goes straight 30 meters, then turns left and goes 10 meters. He again turns left and goes 20 meters and finally turns right and starts walking. If he is now moving in the East direction, then in which direction did he started his walking?
(a) East (b) West (c) North
(d) South (e) None of these

**33.** Find the odd one out?
(a) ZXY (b) WUV (c) TRS
(d) QOP (e) LNM

**Directions (34-38):** Following questions are based on the five words given below, Study the following words and answer the following questions.
CUT BET TUB OWL SIT
(The new words formed after performing the mentioned operations may not necessarily be a meaningful English word.)

**34.** If the given words are arranged in the order as they appear in a dictionary from left to right, which of the following will be the fourth from the left end?
(a) CUT (b) BET (c) TUB
(d) OWL (e) SIT

**35.** How many letters are there in the English alphabetical series between the second letter of the word which is second from the right end and the second letter of the word which is third from the left end?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**36.** If second alphabet in each of the words is changed to the previous alphabet in the English alphabetical order then how many words thus formed will be without any vowels?
(a) None (b) One (c) Two
(d) Three (e) Four

**37.** If the position of the first and the third alphabet of each of the words are interchanged, then how many meaningful words will be formed in the new arrangement?
(a) One (b) Two (c) Three
(d) Four (e) Five

**38.** If in each of the given words, every consonant is changed to its previous letter and every vowel is changed to its next letter according to the English alphabetical series, then in how many words, thus formed, at least one vowel will appear?
(a) None (b) One (c) Two
(d) Three (e) None of these

**39.** If in the number 9876534567, position of the first and the last digit is interchanged, position of the second and the ninth digit is interchanged and so on till the position of the fifth and the sixth digit is interchanged, then which digit will be sixth to the left of the one which is fourth from the right end?
(a) 7 (b) 9 (c) 5
(d) 4 (e) 8

**40.** How many pairs of letters are there in the word" GURUGRAM" which have as many letters between them in the word as in alphabetical series?
(a) One (b) Two (c) Three
(d) Four (e) None

## QUANTITATIVE APTITUDE

**41.** The price of a product after getting 10% discount is Rs.9450 which includes 5% tax on selling price. Find the marked price of the product (in Rs)?
(a) 8500 (b) 9000 (c) 10000
(d) 9500 (e) 10500

**42.** A's income is 75% of B's income and A's expenditure is 60% of B's expenditure. If A's income is 80% of B's expenditure then find the ratio of A's savings to B's savings.
(a) 1 : 2 (b) 2 : 1 (c) 5 : 2
(d) 3 : 1 (e) 5 : 3

**43.** A takes three times as long as B and C together takes to do a work. B takes four times as long as A and C together to do the same work. If all the three working together can complete the same work in 24 days, then 'A' alone can complete the work in how many days?
(a) 84 (b) 96 (c) 48
(d) 192 (e) 144

**44.** Two men A and B are 60 km apart and walking towards each other with the speed of 10 kmph & 5 kmph respectively and a dog is running with speed of 12 kmph from man A towards man B & then again towards man A and so on, until A meets B. Find the distance travelled by the dog?
(a) 60 km (b) 36 km (c) 24 km
(d) 48 km (e) 72 km

**45.** Population of a city X is 1, 60,000. In the next three years, there is a total increase of 8% in male population and increase of 20% in female population, which results in male to female ratio as 3:2. Find the original male and female population of the city?
(a) 84000, 96000
(b)100000, 60000
(c)120000, 40000
(d)90000, 70000
(e) 85000, 75000

**46.** A pyramid with a square base of side 3 cm and height 7 cm is carved out of a rectangular block of wood 7 cm × 3 cm × 3 cm. Find the percentage of wood wasted in the process?
(a) $33\frac{1}{3}\%$ (b) $62\frac{2}{3}\%$ (c) $57\frac{1}{7}\%$
(d) $54\frac{2}{7}\%$ (e) $66\frac{2}{3}\%$

**47.** A man can row 12 kmph in still water and it takes him 90 minutes to reach a place & return. If the speed of current is 4 kmph then how far is the place?
(a) 8 km (b) 6 km (c) 10 km
(d) 12 km (e) 16 km

**48.** Population of two cities A and B is in ratio 5 : 6. If 40% and $66\frac{2}{3}\%$ of population of city A and city B respectively is literate and the difference between the number of illiterate people of the cities is 600 then find the total population of city A ?
(a) 3300 (b) 3000 (c) 6600
(d) 3600 (e) 2500

**49.** An urn contains 3 Red, 6 Blue, 2 green marbles. Find the probability of choosing a blue ball?
(a) $\frac{6}{13}$ (b) $\frac{3}{13}$ (c) $\frac{6}{11}$
(d) $\frac{3}{11}$ (e) $\frac{2}{11}$

**50.** A container carrying wine and water solution in the ratio 7 : 5. 58 litre of water has been added to dilute the solution further more and ratio of the wine and water has been reversed. Find the original volume of the solution?
(a) 130 litre (b) 244 litre (c) 248 litre
(d) 145 litre (e) 184 litre

**Directions (51-55):** What should come in place of question mark (?) in the following questions?

**51.** 7, 7, 23, 87, 231, ?
(a) 485 (b) 487 (c) 489
(d) 491 (e) 493

**52.** 27, 29, 26, 31, 24, ?
(a) 33 (b) 34 (c) 35
(d) 36 (e) 37

**53.** 170, 173, 178, 185, 196, ?
(a) 209 (b) 205 (c) 207
(d) 211 (e) 213

**54.** 2880, 480, 96, 24, 8, ?
(a) 12 (b) 4 (c) 2
(d) 6 (e) 8

**55.** 8, 9, 21, 68, 279, ?
(a) 1404 (b) 1395 (c) 1405
(d) 1415 (e) 1495

**Direction (56 – 60):** What approximate value should come in the place of question (?) marks in the given question?

**56.** $8399.99 \times 14.996 \div 374.982 + \sqrt{16.011} = ?$
(a) 564 (b) 340 (c) 320
(d) 324 (e) 384

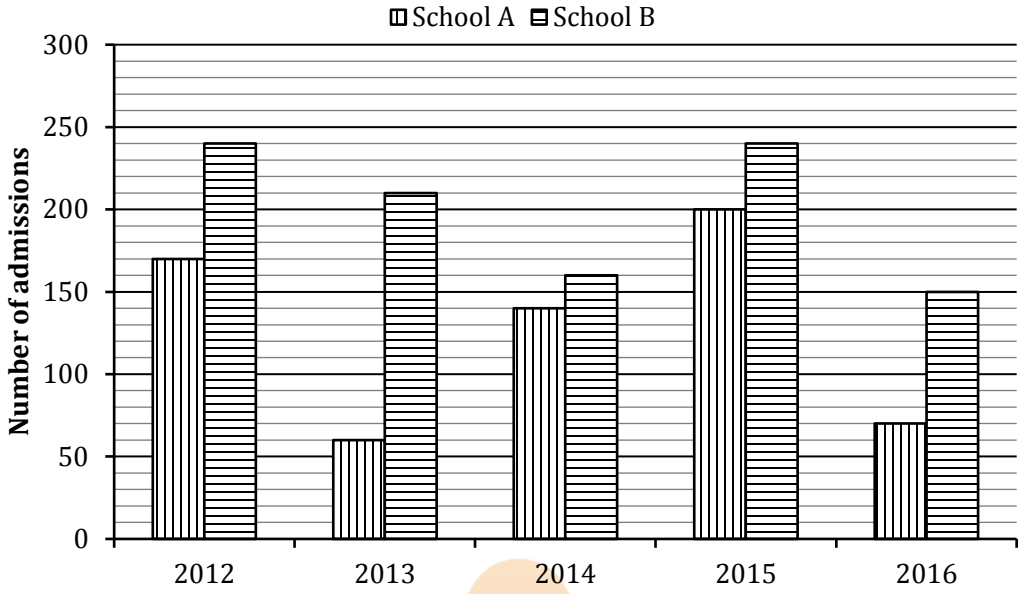
**57.** $\sqrt{2499.99} + 14.97\% \text{ of } 14 = ?$
(a) 40 (b) 45 (c) 52
(d) 58 (e) 64

**58.** 24.987% × 639.97 + 45.21% of 359 = ?
(a) 358 (b) 378 (c) 322
(d) 302 (e) 288

**59.** 33.30003% of 509.99 = ?
(a) 140 (b) 185 (c) 155
(d) 170 (e) 100

**60.** 74.79% of 1344.11 + 12.48% of 128.20 = ?
(a) 1048 (b) 1024 (c) 1072
(d) 1096 (e) 1120

**Directions (61-65):** Bar chart given below shows the total number of admissions took place in two different schools A and B from year 2012 to year 2016. Based on this bar chart, solve the following questions.




**61.** If in another school C, total student who took admission in year 2013 is $33\frac{1}{3}\%$ more than the difference of admissions took place in school A and B in same year then, find the average of admission in school C in year 2013 and school B in year 2015 together.
(a) 225 (b) 220 (c) 210
(d) 205 (e) 200

**62.** Ratio of boys to girls who take admission in school A in 2012 is 9 : 8 and number of boys taking admission in school A in 2015 is $11\frac{1}{9}\%$ more than boys taking admission in school A in 2012. Find the sum of girls who take admission in school A in 2012 and in school A in 2015 together.
(a) 180 (b) 220 (c) 195
(d) 150 (e) 240

**63.** If in year 2017 there is 60% increase in the total number of admissions in both schools from previous year, then find the total number of admission in 2017.
(a) 312 (b) 322 (c) 332
(d) 342 (e) 352

**64.** Total admission in year 2014 in both school together is what percent more or less than total admission in both school in year 2016.
(a) $35\frac{2}{11}\%$ (b) $36\frac{4}{11}\%$ (c) $44\frac{2}{9}\%$
(d) $38\frac{1}{11}\%$ (e) $39\frac{5}{11}\%$

**65.** Find the ratio of total admission in both school in year 2013 to total admission in both school in year 2016.
(a) 29 : 22 (b) 13 : 11 (c) 14 : 11
(d) 27 : 22 (e) 25 : 22

**Directions (66-75):** What should come in place of question mark (?) in the following questions?

**66.** $\sqrt[3]{729} + 37\frac{1}{2}\% \text{ of } 5\frac{1}{3} = ? + 2$
(a) 9 (b) $8\frac{1}{3}$ (c) 7
(d) $9\frac{1}{3}$ (e) 8

**67.** $? \times 65 \div 72 = 195 \times 352 \div 192$
(a) 369 (b) 396 (c) 594
(d) 297 (e) 376

**68.** $(444 \div 4) + (625 \div 25) + (2991 \div 3) = ?$
(a) 1153 (b) 1143 (c) 1113
(d) 1123 (e) 1133

**69.** $\sqrt{6.25} + 5\frac{1}{5} \times 7\frac{4}{13} + ? = 72$
(a) 30.5 (b) 32.5 (c) 31.5
(d) 29.5 (e) 25

**70.** $(\sqrt{7921} - \sqrt[3]{2197}) \times \frac{1}{4} = ?$
(a) 20 (b) 19 (c) 18
(d) 17 (e) 16

**71.** $266\frac{2}{3}\% \text{ of } 153 + 58\frac{1}{3}\% \; 300 = ?$
(a) 583 (b) 493 (c) 575
(d) 543 (e) 549

**72.** $77077 \div 7007 \times 125 \div 5 \times 2 = ?$
(a) 275 (b) 550 (c) 1100
(d) 2200 (e) 1650

**73.** 25% of 124 + 35% of 60 = ?
(a) 52 (b) 57 (c) 62
(d) 67 (e) 72

**74.** $8557 + 1723 - 1231 - 7321 = (?)^3$
(a) 11 (b) 12 (c) 13
(d) 14 (e) 15

**75.** $(?)^2 = 39 \times 1323 \times \frac{1}{117}$
(a) 19 (b) 21 (c) 24
(d) 27 (e) 18

**76.** Radha's age four years ago is twice of her age, 10 yrs ago. Also, the respective ratio between Raju's present age and Radha's present age is 3 : 4. Find Raju's age 3 years hence?
(a) 15 years (b) 12 years (c) 13 years
(d) 18 years (e) 21 years

**77.** How many different words can be formed with the letter of the word "REGRESSIVE"
(a) 16800 (b) 30240 (c) 151200
(d) 90720 (e) 15120

**78.** Average weight of A, B and C is 93 kg.. If another man D joins the group whose weight is 81 kg then new average of the four people will be equal to: -
(a) 65 kg (b) 67 kg (c) 86 kg
(d) 90 kg (e) 96 kg

**79.** A person covered 9 km at 3 km/hr, 15 km at 5 km/hr and 30 km at 10 km/hr. then find the average speed of person in covering the entire distance?
(a) 5 km/hr (b) 6 km/hr (c) 7 km/hr
(d) 8 km/hr (e) 7.5 km/hr

**80.** Two pipes A and B fill a tank in 30 min & 60 min respectively. Initially both the pipes are opened but after 10 minutes, pipe A was closed. What is the total time to fill the tank?
(a) 30 minutes (b) 45 minutes (c) 40 minutes
(d) 35 minutes (e) 25 minutes

# Mock 24 : Solutions

## REASONING ABILITY

**Direction (1-5):**

**1. (a);** **I.** O > P (True) **II.** S > R (False)

**2. (b);** **I.** B > E (False) **II.** D < C (True)

**3. (c);** **I.** Y < V (False) **II.** V = Y (False)

**4. (d);** **I.** R < M (False) **II.** N < R (False)

**5. (e);** **I.** G < J (True) **II.** L < J (True)

**Directions (6-10):**

**6. (d);** By using condition (i) the code of D9UPS4 will be ^^£&+^.

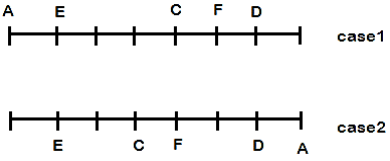
**7. (b);** The code of 9W0JX7 will be^®∞≠*@ .

**8. (c);** By using condition (iii) the code of U47LJ0 will be ∞%@$≠£

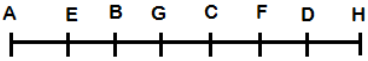
**9. (d);** By using condition (iv) the code of 4MD0W2 will be µ®∞#©%

**10. (a);** By using condition (ii) the code of 7PU49M will be ©&£%^© .

**Direction (11-15):**
A sits at one of the ends. Three persons sit between A and C, who is immediate left to F. Four persons sit between E and D, none of them sits at any end.




No one sits between B and G, So case2 gets eliminated as there is no place for G and B. No two persons are sitting adjacent to each other according to the English alphabet. Therefore, B cannot sit next to C. The final arrangement is:

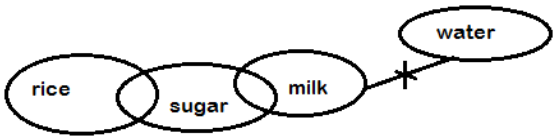



**11. (c);** **12. (a);** **13. (a);**

**14. (c);** **15. (b);**

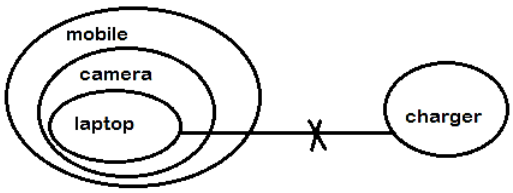
**Directions (16-20):**

**16. (a);**



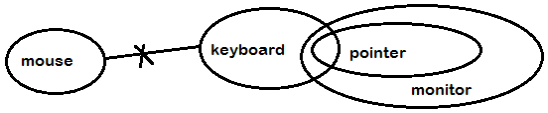

For I- From the venn diagram it is clear that some sugar is milk and no milk is water. So, some sugar which is milk will not be water. Hence, conclusion I can be concluded.
For II- Since there is no direct relation between the elements rice and water. So, possibility case will hold true. Therefore, we can conclude that some rice being water is a possibility.

**17. (c);**



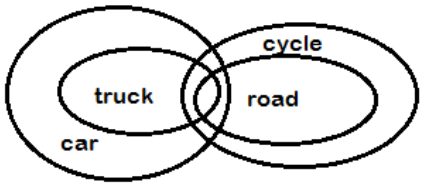
For I- From the venn diagram it is clear that some camera is laptop, So, possibility case will not hold true. Therefore, we cannot conclude that some camera being laptop is a possibility.
For II- From the venn diagram some mobile is laptop and since no laptop is charger. Therefore, some mobile is not charger can be concluded.

**18. (e);**



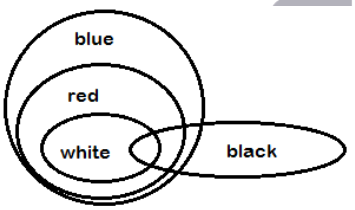

For I- From the venn diagram it is clear that some keyboard is definitely monitor. Therefore, we cannot conclude that no keyboard is Monitor.
For II- Since there is no direct relation between the elements mouse and pointer. Therefore, we cannot conclude that some mouse can never be pointer.

**19. (c);**




For I- From the venn diagram it is clear that some road is car. So, possibility case will not hold true. Therefore, we cannot conclude conclusion I.
For II- From the venn diagram it is clear that some cycle is definitely car. Hence, conclusion II follows.

**20. (d);**




For I- From the venn diagram it is clear that some blue is black. Therefore, we can conclude conclusion I.
For II- From the venn diagram it is clear that some red is definitely white. Hence, conclusion II does not follows.

**Directions (21-25):**

**21. (b);** 96,44

**22. (c);** 6

**23. (b);** 2

**24. (d); 9**

**25. (e);** Six- 45,97,15,13,13,47

**Directions (26-30):**
E lives on floor number 4. F lives immediately below E. There is a gap of more than three floors between D and B. D lives above B but not on top floor. C lives immediately above B.

| Case1 | | Case2 | |
|---|---|---|---|
| **Floor** | **Person** | **Floor** | **Person** |
| 8 | | 8 | |
| 7 | D | 7 | |
| 6 | | 6 | D |
| 5 | | 5 | |
| 4 | E | 4 | E |
| 3 | F | 3 | F |
| 2 | C | 2 | C |
| 1 | B | 1 | B |

A lives above G, who lives on an even numbered floor. So case 2 will be eliminated.

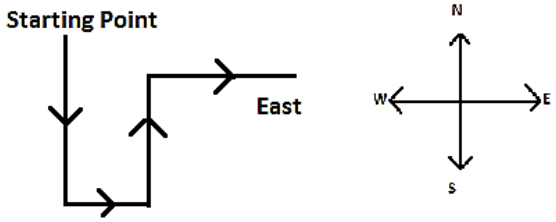
| | |
|---|---|
| 8 | A |
| 7 | D |
| 6 | G |
| 5 | Vacant |
| 4 | E |
| 3 | F |
| 2 | C |
| 1 | B |

**26. (a);** **27. (c);** **28. (b);**

**29. (a);** **30. (e);**

**31. (c);** Shiva's position from left end = 19th
Shiva's position from right end = 6th
Total number of students in the row=19+6-1=24

**32. (d);**




Jay started walking towards south.

**33. (e);**

| | | | | |
|---|---|---|---|---|
| ZXY | WUV | TRS | QOP | LNM |
| 26 24 25 | 23 21 22 | 20 18 19 | 17 15 16 | 12 14 13 |

**Directions (34-38):**

**34. (e);** SIT

**35. (a);** One letter between U and W i.e. V

**36. (e);** CTT, BDT, TTB, SHT

**37. (a);** BUT

**38. (c);** AFS, SVA

**39. (a);** 9876534567
7654356789
So, the digit is 7.

**40. (b);**

GURUGRAM

## QUANTITATIVE APTITUDE

**41. (c);** If MP is x Rs then after 10% discount, selling price of the product will be equal to 0.9x
But there is 5% tax on selling price which is also included in the price of the product.
5% of 0.9x ⇒ 0.045x
Net value of the product=0.9x+0.045x=0.945x
ATQ,
$0.945x = 9450 \quad \Rightarrow \quad x = \frac{9450}{0.945}$
$\Rightarrow x = 10000$

**42. (d);**

| | A | B |
|---|---|---|
| Income | 0.75x | x |
| Expenditure | 0.6y | y |

A's saving= (0.75x−0.6y)
B's saving = (x−y)
Given, 0.75x = 0.8y
Or, 15x = 16y
$\Rightarrow \frac{A's\ Savings}{B's\ savings} = \frac{0.8y-0.6y}{\frac{16y}{15}-y} = \frac{0.2y}{\frac{1}{15}y} = \frac{3}{1}$

**43. (b);** ATQ,
$\frac{3}{A} = \frac{1}{B} + \frac{1}{C}$ ... (i)
$\frac{4}{B} = \frac{1}{A} + \frac{1}{C}$ ... (ii)
$\frac{1}{A} + \frac{1}{B} + \frac{1}{C} = \frac{1}{24}$ ... (iii)
From equation (i) and (iii)
$\frac{4}{A} = \frac{1}{24}$
A = 96 Days

**44. (d);** Total time of travel required for A & B to meet
$= \frac{60}{10+5} = 4\ hr$
And dog will travel only for 4 hr (until A & B meet)
= 12 × 4 = 48 km

**45. (b);** Let the population of male and female in city X be x and y respectively.
Population of males after 3 years = $x + \frac{8}{100}x$
$= 1.08x$
Population of females after 3 years = $y + \frac{20}{100}y$
$= 1.2y$
ATQ,
$\Rightarrow \frac{1.08x}{1.2y} = \frac{3}{2} \Rightarrow \frac{x}{y} = \frac{5}{3}$
⇒ Male and Female population is 1,00,000 and 60,000 respectively

**46. (e);** Vol. of wooden block =7 × 3 × 3= 63 $cm^2$
Vol. of pyramid = $\frac{1}{3} \times 3^2 \times 7 = 21\ cm^3$
Wood wasted = 63 – 21 = 42 $cm^3$
∴ % of wood wasted = $\frac{42}{63} \times 100 = 66\frac{2}{3}\%$

**47. (a);** Let the total distance = x km
$\frac{x}{12-4} + \frac{x}{12+4} = \frac{90}{60}$
$\frac{x}{8} + \frac{x}{16} = 1.5$
$3x = 1.5 \times 16$
$x = 8km$

**48. (b);** Let the total population of city A and B is 5x and 6x respectively.

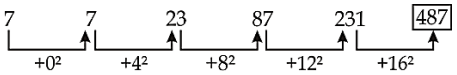
| | Total | $\xrightarrow{40\%}$ literate people | Illiterate people |
|---|---|---|---|
| A | 5x | 2x | 3x |
| B | 6x | $\xrightarrow{66\frac{2}{3}\%}$ 4x | 2x |

Given 3x – 2x = 600
x = 600
hence, total population of city A = 5x = 5 × 600
= 3000

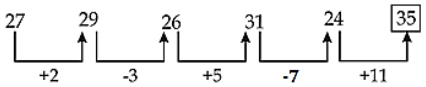
**49. (c);** No. of desired outcome = 6
Total no. of outcomes = 11
Probability = $\frac{6}{11}$

**50. (d);** Let the quantity of wine & water is 7x and 5x.
ATQ,
$\frac{7x}{5x+58} = \frac{5}{7}$
49x = 25x + 290
24 x = 290
x= $\frac{290}{24}$ litre
Total volume of original solution
= (7 + 5)x=12× $\frac{290}{24}$=145

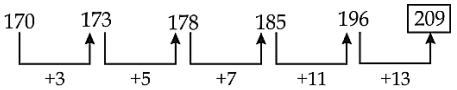
**51. (b);**



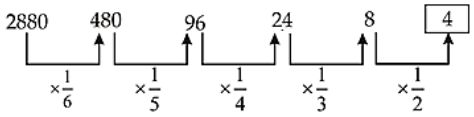

**52. (c);**



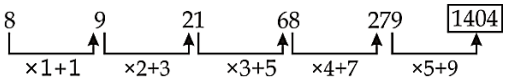

**53. (a);**



**54. (b);**




**55. (a);**




**56. (b);** $\frac{8400\times15}{375}+\sqrt{16}\approx ?$

$\frac{84\times100}{25}+4\approx ?$

$336+4\approx ?$

$340\approx ?$

**57. (c);** $\sqrt{2500}+\frac{15}{100}\times14\approx ?$

$50+2.1\approx ?$

$52\approx ?$

**58. (c);** $?\approx 25\%\times640+45\%\text{ of }360$

$?\approx 160+162\approx 322$

**59. (d);** $33.33\%\text{ of }510\approx ?$

$\frac{510}{3}\approx ?$

$?\approx 170$

**60. (b);** $75\%\text{ of }1344+12.5\%\text{ of }128\approx ?$

$\frac{3}{4}\times1344+\frac{1}{8}\times128\approx ?$

$1008+16\approx ?$

$1024\approx ?$

**61. (b);** Total admission in school 'C' in 2013

$=\frac{4}{3}\times(210-60)=\frac{4}{3}\times150=200$

Required average $=\frac{200+240}{2}=\frac{440}{2}=220$

**62. (a);** Boys who take admission in school A in 2012$=\frac{9}{17}\times170=90$

Girls who take admission in school A in 2012$=\frac{8}{17}\times170=80$

Boys who take admission in school A in 2015

$=90+11\frac{1}{9}\%\ of\ 90=90+10=100$

Girls who take admission in school A in 2015 = 200 – 100 = 100

Required sum = 100 + 80 =180

**63. (e);** Total number of admission in 2017

$=\frac{160}{100}\times(70+150)=\frac{8}{5}\times220=352$

**64. (b);** Total admission in year 2014 = 140 + 160 = 300

Total admission in year 2016 = 70 + 150 = 220

Required% $=\frac{300-220}{220}\times100=\frac{80}{220}\times100$

$=36\frac{4}{11}\%$

**65. (d)** Required ratio $=\frac{60+210}{70+150}=\frac{270}{220}=27:22$

**66. (a);** $9+\frac{3}{8}\times\frac{16}{3}=?+2$

$9+2=?+2$

$?=9$

**67. (b);** $?\times\frac{65}{72}=\frac{195\times352}{192}$

$?=\frac{195\times352\times72}{192\times65}$

$?=396$

**68. (e);** $111+25+997=?$

$1133=?$

**69. (c);** $2.5+\frac{26}{5}\times\frac{95}{13}+?=72$

$40.5+?=72$

$?=72-40.5$

$?=31.5$

**70. (b);** $[89-13]\times\frac{1}{4}=?$

$76\times\frac{1}{4}=?$

$?=19$

**71. (a);** $2[133.33\%\ ]of\ 153+\left(25+33\frac{1}{3}\right)\%\ 300=?$

$2\left[100+33\frac{1}{3}\right]\%\ of\ 153+\frac{300}{4}+\frac{300}{3}=?$

$2\left[153+\frac{153}{3}\right]+75+100=?$

$2\times204+175=?$

$408+175=?$

$583=?$

**72. (b);** $\frac{77077}{7007}\times\frac{125}{5}\times2=?$

$11\times25\times2=?$

$550=?$

**73. (a);** $\frac{1}{4}\times124+35\%\ of\ 60=?$

$31+\frac{7}{20}\times60=?$

$31+21=?$

$52=?$

**74. (b);** $8557+1723-1231-7321=(?)^3$

$1236+492=(?)^3$

$1728=(?)^3$

$?=12$

**75. (b);** $(?)^2=\frac{39\times1323}{13\times9}$

$(?)^2=441$

$?=21$

**76. (a);** Let Radha's present age = R

And Raju's present age = r

R – 4 = 2 (R - 10)

R – 4 = 2R – 20

R=16

R : r = 4 : 3

r = 12 years

After 3 years Raju's age = r + 3

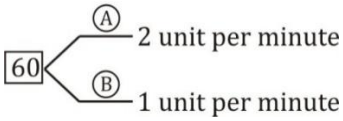
= 15 years

**77. (c);** REGRESSIVE
R R E E E G S S I V
Total no. of ways $= \frac{\lfloor 10}{\lfloor 2 \lfloor 3 \lfloor 2}$
$= \frac{10\times9\times8\times7\times6\times5\times4\times\lfloor 3}{2\times\lfloor 3\times2} = 151200$

**78. (d);** A + B + C = 93 × 3
A + B + C =279
A + B + C + D = 279 + 81 = 360
Required average $= \frac{360}{4} = 90$ kg

**79. (b);** Average speed $= \frac{total\ distance}{total\ time} = \frac{9+15+30}{\frac{9}{3}+\frac{30}{10}+\frac{15}{5}} = \frac{54}{9}$
= 6 km/hr

**80. (c);** LCM(60,30)=60
let 60 units is the total work.




In 10 minutes A and B will do = (2 + 1) × 10 = 30 units
Remaining work will be done by B alone in
$= \frac{60-30}{1} = 30$ minutes.
Total time to fill the tank = 10 + 30
= 40 minutes

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# Mock 25

# IBPS RRB Clerk Prelims

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $C \leq L = E \leq R \leq K = P \geq O$
**Conclusions:** **I.** $P = C$ **II.** $C < P$

**2.** **Statements:** $W > A = S \geq H < I \leq N \leq G$
**Conclusions:** **I.** $H < W$ II. $G > H$

**3.** **Statements:** $C < O \leq D = S > A \geq P \geq Q$
**Conclusions:** **I.** $Q < D$ **II.** $C < A$

**4.** **Statements:** $F \leq B = I \leq C = A \geq S > E$
**Conclusions:** **I.** $S \geq B$ **II.** $F > E$

**5.** **Statements:** $I \geq N = T \geq E > L \geq G > M$
**Conclusions:** **I.** $G < N$ **II.** $I \geq L$

**Directions (6-10):** Study the following sequence and answer the given questions.
P R $ 5 7 # L O & 1 Q A 6 @ N M 8 4 © V E 9 ® F U 3 1 S H 4

**6.** Which of the following element is 12th to the left of the one which is 19th from the left end of the given arrangement?
(a) O (b) L (c) #
(d) ® (e) None of these

**7.** If all the numbers are dropped from the series, which element will be sixth to the left of the one which is twelfth from the right end of the new arrangement?
(a) R (b) # (c) $
(d) E (e) None of these

**8.** How many such symbols are there in the given series which are immediately preceded or followed by a consonant?
(a) Two (b) Three (c) Four
(d) Five (e) None of these

9. How many such alphabets are there in the given series which are immediately preceded by or followed by a perfect cube?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**10.** What should come in place of question mark (?) in the following series based on the above arrangement?
P$R #OL Q6A M48 ?
(a) E9® (b) E®9 (c) V9E
(d) 9F® (e) None of these

**Direction (11-15):** Study the following information carefully and answer the question given below-
Eight people viz. L, M, N, O, P, Q, R and S live in a building of ten different floors. Two floors are vacant. The ground floor is numbered as 1, the floor just above it is numbered as 2 and so on till top floor which is numbered as 10 (but not necessarily in the same order).
More than three persons live between M and O. M lives on floor number 9. R lives immediately above S. N lives on floor number 5. L lives immediately below vacant floor. There is a gap of two floors between P and O. No odd numbered floor is Vacant. S lives below P and O. Q does not live on top floor.

**11.** Who among the following lives on ground number?
(a) O (b) R (c) S
(d) P (e) None of these

**12.** Who among the following lives on top floor?
(a) M (b) O (c) P
(d) L (e) No one

**13.** How many persons live between N and M?
(a) One (b) Two (c) Three
(d) Four (e) None of these

**14.** Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) O (b) N (c) P
(d) S (e) L

**15.** Who among the following lives immediately below the P?
(a) M (b) N (c) O
(d) L (e) None of these

**Directions (16-20):** Study the information and answer the following questions:
Eight persons P, Q, R, S, T, U, V and W are sitting in a row some are facing north and some are facing south (but not necessarily in the same manner).
(Note: Facing the same direction means if one is facing north then the other also faces north and vice versa. Facing

opposite direction means if one is facing north then the other faces south and vice versa).
R sits fifth to the right of W and both of them do not sit at any end of the row. Two persons sit between R and W. V sits second to the left of R. One person sits between U and V. T is not an immediate neighbor of R. Q sits second to the right of T. S sits to the immediate left of V. Immediate neighbors of V face opposite direction. U and Q faces south. Immediate neighbor of Q face opposite direction. Not more than four people face south.

**16.** Who among the following sits to the immediate right of T?
(a) P (b) Q (c) U
(d) V (e) None of these

**17.** How many persons sit between Q and V?
(a) None (b) One (c) Two
(d) Three (e) More than three

**18.** What is the position of W with respect to U?
(a) Second to the right
(b) Second to the left
(c) Immediate right
(d) Immediate left
(e) None of these

**19.** Who among the following sits at the extreme end of the row?
(a) S (b) R (c) V
(d) T (e) None of these

**20.** How many persons face north?
(a) One (b) Two (c) Three
(d) Four (e) More than four

**Direction (21-23):** Study the following information carefully and answer the questions given below.
Six friends P, Q, R, S, T and U have different numbers of coins. The person who has the second highest number of coins has 36 coins. P has more coins than Q but not the highest. S has more coins than R and U but not more than Q. R has more coins than only one person.

**21.** How many coins does T possibly have?
(a) 33 (b) 27 (c) 38
(d) 19 (e) 30

**22.** Who among the following has the third lowest number of coins?
(a) S (b) R (c) U
(d) Q (e) None of the above

**23.** If P and R together have 59 coins, then how many coins does R have?
(a) 15 (b) 23 (c) 12
(d) 29 (e) None of the above

**Directions (24-26):** Study the following information carefully and answer the questions given below.
Rohan started walking 2km in North direction then takes three consecutive right turns and walked distances 3km,6km,5km respectively and reached at point O.

**24.** What is the direction of Rohan's initial point (position) with respect to point O?
(a) north west (b) north east (c) south west
(d) southeast (e) none of these

**25.** If Rohan walks a distance of 4 km towards north from O, then what is the shortest distance between his new position to his initial position?
(a) 2 km (b) 3 km (c) 4 km
(d) 1 km (e) none of these

**26.** If Karan starts walking from point O for 1 km then what is the direction of Karan's final position with respect to Rohan's initial position?
(a) South (b) North (c) North-east
(d) South-west (e) Cannot be determined

**Directions (27-28):** Study the information and answer the following questions:

N is grandfather of L, who is son of E. N has two children i.e. one son and one daughter. J is sister-in-law of E and T is brother-in-law of S, who is sibling of E.T and J has no siblings.

**27.** How is J related to N?
(a) daughter-in-law
(b) son
(c) daughter
(d) son-in-law
(e) None of these

**28.** How is T related to L?
(a) uncle (b) grandfather (c) brother
(d) father (e) Cannot be determined

**Directions (29-33):** Study the information and answer the following questions:
In a certain code language
"No person is good" is coded as "lo mo ja sa"
"god is present everywhere" is coded as "ja mk ka la"
"good person no present " is coded as "la mo sa lo"
"No one god" is coded as "ka ro lo"

**29.** What is the code for "No"?
(a) ja (b) sa (c) lo
(d) ka (e) None of these

**30.** Which of the following is denoted as "ja"?
(a) good (b) present (c) everywhere
(d) person (e) is

**31.** What is the code for "good person"?
(a) ro ja (b) sa ka (c) lo ja
(d) sa mo (e) None of these

**32.** Which of the following is denoted as "ka mk"?
(a) god everywhere
(b) good present
(c) No one
(d) person is
(e) None of these

**33.** What can be the code of "some one"?
(a) ac sa (b) la ka (c) ro ac
(d) ja ro (e) mo ac

**34.** How many pairs of letters are there in the word" SCHEDULE" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

**35.** If in the number 7921456238, positions of the first and the last digits are interchanged, positions of the second and ninth digits are interchanged and so on till the positions of fifth and sixth digits are interchanged, then which digit will be 4th from the right end?
(a) 2 (b) 1 (c) 4
(d) 6 (e) None of these

**36.** Find the odd one out?
(a) BDE (b) GIJ (c) VYX
(d) QST (e) LNO

**Directions (37-40):** Each of the questions below consists of a question and two statements numbered I, and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the two statements and Give answer:

(a) If the data in Statement I is sufficient to answer the question while the data in Statement II is not required to answer the question
(b) If the data in Statement II is sufficient to answer the question, while the data in Statement I is not required to answer the question
(c) If the data in either Statement I alone or Statement II alone is sufficient to answer the question
(d) If the data neither in Statement I nor in Statement II together are sufficient to answer the question
(e) If the data in the Statement I and II together are necessary to answer the question

**37.** In which month of the year did Abhay go abroad for a meeting?
I. Abhay correctly remembers that he went for a meeting in the first quarter of the year.
II. Abhay's father correctly remembers that he went for a meeting after 31st January but before 1st March.

**38.** Among Six friends A, B, C, D, E and F, who is second heaviest?
I. C is heavier than only two friends. D is heavier than C but lighter than B. F is the heaviest.
II. A is lighter than only two friends. B is heavier than C but lighter than F. D is heavier than only E.

**39.** How many marks did Sumit score in the fifty marks exam?
I. Sumit scored two digits marks and his marks was perfect square.
II. Sumit scored more than 25 but less than 45 marks.

**40.** Who among A, B, C, D and E is the tallest?
I. A is taller than B. E is not the tallest.
II. C is taller than A. D is not the tallest.

## QUANTITATIVE APTITUDE

**Directions (41-45):** What value should come in place of (?) in the following questions?

**41.** $\frac{510}{?} = \sqrt{324} + \sqrt{256}$
(a) 20 (b) 5 (c) 10
(d) 15 (e) 25

**42.** $2^{?+2} = 32 \div 1024 \times 128 \div 8 \times 128$
(a) 6 (b) 5 (c) 4
(d) 8 (e) 3

**43.** $?^2 = 55\%$ of $440 - 80\%$ of $345 + 2 \times 7^2$
(a) 6 (b) 2 (c) 4
(d) 16 (e) 8

**44.** $\frac{209}{399} \times 21^2 - (11)^2 = ?$
(a) 110 (b) 320 (c) 100
(d) 120 (e) 80

**45.** $86 \times 5 + 26 \times 11 - 22 \times 13 = ?$
(a) 1002 (b) 716 (c) 430
(d) 144 (e) 380

**Direction (46 −50)**: Read the data carefully and answer the questions.
There are 900 students in school 'X' and they like two Indian cricket players, i.e. either **Virat Kohli** or **M.S. Dhoni.** The ratio of boys to girls like **M.S. Dhoni** is 13 : 7 and total number of boys like **Virat Kohli** is 30 less than total number of girls like **M.S. Dhoni**. Total number of girls like **Virat Kohli** is 60 less than boys like **Virat Kohli.**

**46.** Find difference between total number of boys like M.S. Dhoni & total number of boys like Virat Kohli?
(a) 210 (b) 220 (c) 225
(d) 230 (e) 250

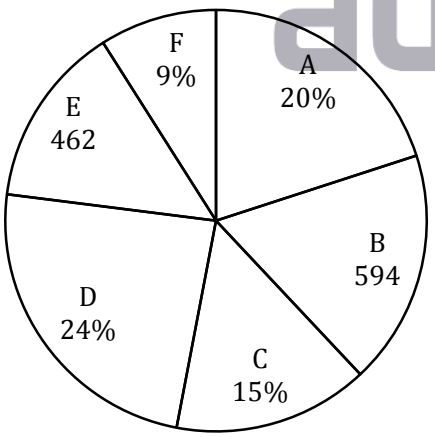
**47.** Find the ratio between total number of Girls Like M.S. Dhoni to total number of Girls Like Virat kohli?
(a) 8 : 5 (b) 7 : 4 (c) 7 : 3
(d) 7 : 2 (e) 7 : 9

**48.** Total number of boys like M.S. Dhoni & Virat Kohli together is what percent more than total number of girls like M.S. Dhoni & Virat Kohli together?
(a) $63\frac{8}{11}\%$ (b) $65\frac{8}{11}\%$ (c) $71\frac{8}{11}\%$
(d) $72\frac{8}{11}\%$ (e) $75\frac{8}{11}\%$

**49.** In school 'Y' number of boys like M.S. Dhoni and Virat Kolhi is $133\frac{1}{3}\%$ & 175% more than total number of girls like M.S. Dhoni & Virat Kolhi in school 'X' respectively. Find difference between total number of boys like M.S. Dhoni & Virat Kohli together in school 'X' to total number of boys like M.S. Dhoni & Virat Kohli together in school 'Y'?
(a) 225 (b) 220 (c) 230
(d) 250 (e) 260

**50.** Find average number of Boys & girls like M. S. Dhoni?
(a) 300 (b) 275 (c) 320
(d) 360 (e) 250

**Direction (51-55):** Date given below shows number of girls in six different schools. Some data is given in absolute value while some in percentage. Study the data carefully and answer the following questions




**51.** Find the central angle of girls in school B?
(a) 57.6° (b) 64.8° (c) 72°
(d) 79.2° (e) 86.4°

**52.** Total number of girls in school 'D' is how much more than total number of girls in school 'E'?
(a) 264 (b) 297 (c) 330
(d) 363 (e) 396

**53.** Find the total number of girls in school 'A' and 'D' together?
(a) 1364 (b) 1386 (c) 1408
(d) 1430 (e) 1452

**54.** If ratio between number of girls and number of boys in school 'F' is 9 : 8, then find total number of students in school 'F'.
(a) 561 (b) 550 (c) 528
(d) 539 (e) 572

**55.** Total number of girls in school 'C' is what percent less than total number of girls in school 'A'?
(a) $33\frac{1}{3}\%$ (b) 25% (c) $66\frac{2}{3}\%$
(d) 75% (e) 50%

**Directions (56-60):** What approximate value should come in place of (**?**) in the following questions?

**56.** 39.89% of 240.01 + 21.01 × 9.01 = 19.05 × ?
(a) 5 (b) 15 (c) 25
(d) 35 (e) 20

**57.** $? \times 24.9 = \sqrt{899.89} + 120.01$
(a) 40 (b) 20 (c) 10
(d) 8 (e) 6

**58.** $? = \frac{249.99}{165.01} \times \frac{180.01}{74.99} \times \frac{121.01}{19.99}$
(a) 22 (b) 11 (c) 15
(d) 33 (e) 44

**59.** $5^{?} = 124.99 \times 499.9 \div 99.99 \div 24.99$
(a) 5 (b) 4 (c) 3
(d) 2 (e) 1

**60.** 60.01% of 719.89 + 44.98% of 960.01 = 89.99% of ?
(a) 690 (b) 780 (c) 870
(d) 960 (e) 1050

**Directions (61-65):** What should come in place of the question mark (?) in the following number series?

**61.** 15, 35, 45, 55, 70, ?
(a) 95 (b) 90 (c) 80
(d) 100 (e) 110

**62.** ? , 12.7, 4.6 , 1.9 , 1, 0.7
(a) 35 (b) 37 (c) 28.9
(d) 85.6 (e) 25.4

**63.** 497, 466, 437, 414, ?, 378
(a) 395 (b) 397 (c) 399
(d) 401 (e) 393

**64.** 16, 7, 5, 7, 24, ?
(a) 191 (b) 189 (c) 187
(d) 185 (e) 183

**65.** ?, 60, 39, 66, 33, 72
(a) 45 (b) 42 (c) 39
(d) 48 (e) 36

**Directions (66-70):** What value should come in place of (?) in the following questions?

**66.** $(15)^2 + (?)^2 = 24 \times 22 + 23 \times 6$
(a) 23 (b) 22 (c) 11
(d) 9 (e) 21

**67.** $? + 312 + (2)^5 = (4)^5 - 17 \times 5$
(a) 575 (b) 585 (c) 595
(d) 605 (e) 615

**68.** 55% of 320 + 88% of 400 = ?
(a) 496 (b) 480 (c) 512
(d) 528 (e) 544

**69.** $\sqrt{?} = \sqrt{12^2 - 18 \times 9 + 26}$
(a) 4 (b) 8 (c) 64
(d) 16 (e) 2

**70.** $? \div 27 \times 48 = 288 \div 18 \times 9$
(a) 1 (b) 9 (c) 27
(d) 81 (e) 729

**71.** B's age 8 years ago is 60% more than A's age 8 years ago. If ratio between Present ago of A and B is 3 : 4, then find B's age four years hence
(a) 22 years (b) 24 years (c) 26 years
(d) 28 years (e) 32 years

**72.** If ratio between volume of a cylinder and volume of sphere is 3 : 1, then find the ratio between total surface area of cylinder to total surface area of sphere [Radius of sphere = Radius of cylinder]
(a) 2 : 1 (b) 5 : 2 (c) 4 : 1
(d) 3 : 2 (e) 7 : 2

**73.** 'X' men can complete a work in (X–2) days while (X–10) men can complete same work in 2X days. Find in how many days (X–6) men can complete half of the work?
(a) 8 days (b) 12 days (c) 16 days
(d) 20 days (e) 24 days

**74.** A container contains 60 *l* milk and 40 *l* water. How much quantity of water should be added in the container so that if shopkeeper sell the mixture of container at cost price of milk then he will earn 150% profit?
(a) 80 *l* (b)100 *l* (c) 30 *l*
(d) 40 *l* (e) 50 *l*

**75.** A box contains 12 red, 6 green and 'x' yellow balls. Probability of choosing one green ball out of the box is $\frac{2}{9}$, then find the probability of choosing one ball which can be either red or yellow?
(a) $\frac{4}{9}$ (b) $\frac{5}{9}$ (c) $\frac{2}{3}$
(d) $\frac{7}{9}$ (e) $\frac{8}{9}$

**76.** A train of length 180 meter cross a platform in 15 seconds with a speed of 60 km/h. A man cross the same platform in 4 minute find the speed of man?
(a) 1.05 km/h (b) 3 km/h (c) 2.05 km/h
(d) 2.1 km/h (e) 2 km/h

**77.** What is the 80% of a number, whose $\frac{3}{7}th$ is 60?
(a) 98 (b) 112 (c) 48
(d) 126 (e) 80

**78.** Find the no. of way to arrange the letters of word ' EDUCATION '.
(a) $\frac{8!}{2}$ (b) $\frac{10!}{2}$ (c) $\frac{6!}{2}$
(d) $\frac{7!}{2}$ (e) 9!

**79.** What is the probability of finding a red card or a queen from a well shuffled pack of 52 cards.
(a) $\frac{15}{26}$ (b) $\frac{7}{12}$ (c) $\frac{7}{13}$
(d) $\frac{5}{13}$ (e) $\frac{8}{13}$

**80.** If Bhavya's income is Rs 20,000 then he save Rs x . If his salary is Rs 35,000 then at what percent his saving increase such that saving percent neither increase or decrease.
(a) 75% (b) 80% (c) 90%
(d) 50% (e) 60%

# Mock 25 : Solutions

## REASONING ABILITY

**Direction (1-5):**

**1. (c);** **I.** P = C (False) **II.** C < P (False)

**2. (e);** **I.** H < W (True) **II.** G > H (True)

**3. (a);** **I.** Q < D (True) **II.** C < A (False)

**4. (d);** **I.** S ≥ B (False) **II.** F > E (False)

**5. (a);** **I.** G < N (True) **II.** I ≥ L (False)

**Direction (6-10):**

**6. (b);** L

**7. (c);** $

**8. (d);** Five – R$, #L, @N, ©V, ®F

**9. (c);** Three – 1Q, M8, 1S

**10. (b);** E®9

**Directions (11-15):**
More than three persons live between M and O. M lives on floor number 9. N lives on floor number 5. There is a gap of two floors between P and O. S lives below P and O. R lives immediately above S. We have three possibilities –

| Case1 | | Case2 | | Case 3 | |
|---|---|---|---|---|---|
| **Floor** | **Person** | **Floor** | **Person** | **Floor** | **Person** |
| 10 | | 10 | | 10 | |
| 9 | M | 9 | M | 9 | M |
| 8 | | 8 | | 8 | |
| 7 | P | 7 | | 7 | P |
| 6 | | 6 | P | 6 | |
| 5 | N | 5 | N | 5 | N |
| 4 | O | 4 | | 4 | O |
| 3 | R | 3 | O | 3 | |
| 2 | S | 2 | R | 2 | R |
| 1 | | 1 | S | 1 | S |

Now, L lives immediately below vacant floor. This will eliminate Case 1 and Case 3. No odd numbered floor is Vacant. Q does not live on top floor. So the final arrangement will be

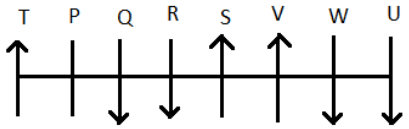
| Floor | Person |
|---|---|
| 10 | Vacant |
| 9 | M |
| 8 | Vacant |
| 7 | L |
| 6 | P |
| 5 | N |
| 4 | Q |
| 3 | O |
| 2 | R |
| 1 | S |

**11. (c); 12. (e); 13. (b);**

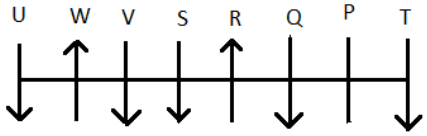
**14. (c); 15. (b);**

**Directions (16-20):** P sits fifth to the right of W and both of them do not sit at any end of the row. Two persons sit between R and W. V sits second to the left of R. One person sits between U and V. T is not an immediate neighbor of R. Q sits second to the right of T. S sits to the immediate left of V. Immediate neighbors of V face opposite direction. U and Q faces south. There are two possible cases

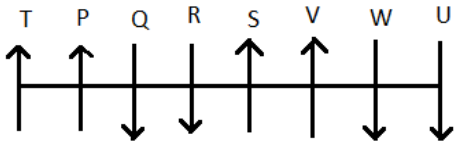
Case I




Case II




Now, Immediate neighbor of Q face opposite direction. Not more than four people face south. This will eliminate Case II. So final arrangement will be




**16. (a); 17. (c); 18. (c);**

**19. (d); 20. (d);**

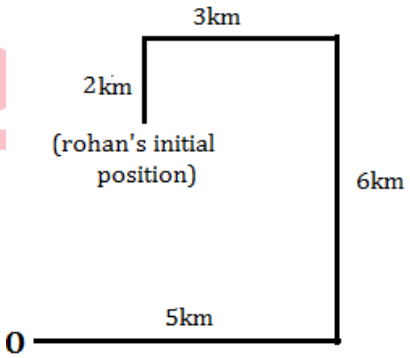
**Directions (21-23):**
T > P(36 coins) > Q > S > R > U

**21. (c); 22. (a);**

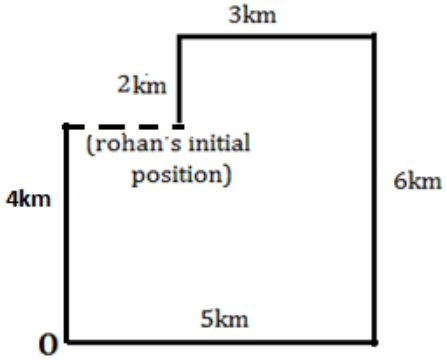
**23. (b);** Coins of R = (59 – P) = (59 – 36 ) = 23 coins

**Directions (24-26):**

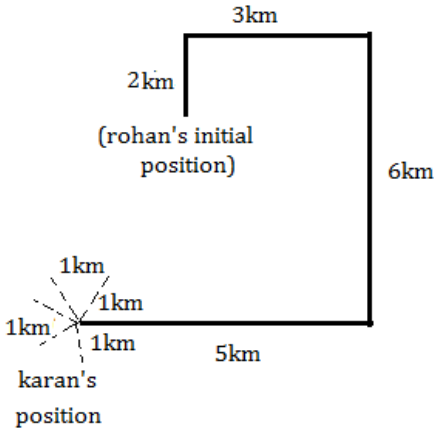
**24. (b);**



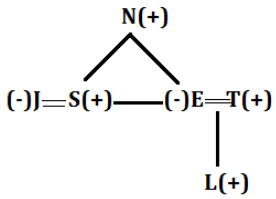

**25. (a);**



**26. (d);** Karan can walk in any direction still he will be in South-west direction from initial position of Rohan.




**Directions (27-28):**




**27. (a);** **28. (d);**

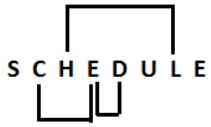
**Directions (29-33):**

| Element | Code |
|---|---|
| person/good | mo/sa |
| no | lo |
| is | ja |
| god | ka |
| present | la |
| everywhere | mk |
| one | ro |

**29. (c);** **30. (e);** **31. (d);**

**32. (a);** **33. (c);**

**34. (d);** Three




**35. (b);** **36. (c);**

**Directions (37-40):**

**37. (b);** From I, First quarter of the year i.e. Jan, Feb, March. Hence I alone is not sufficient.
From II, It is clear that Abhay went for meeting in Feb. Hence II alone is sufficient.

**38. (c);** From I, F > B > D > C > E/A > A/E
Hence B is second heaviest
From II, F > B > A > C > D > E
Hence B is the second heaviest

**39. (e);** From I, Sumit scores 16, 25, 36, 49
From II, Sumit scores 26 to 44
So From I and II Sumit scores 36 marks.

**40. (e);** From I, A > B , E is not the tallest
From II, C > A , D is not the tallest
From I and II C > A > B and neither E & D is tallest.
So C is the tallest.

## QUANTITATIVE APTITUDE

**41. (d);** $\frac{510}{?} = \sqrt{324} + \sqrt{256}$
$\Rightarrow \frac{510}{?} = 18 + 16 \Rightarrow ? = \frac{510}{34} = 15$

**42. (c);** $2^{?+2} = \frac{32}{1024} \times \frac{128}{8} \times 128 = 64 = 2^6$
$\Rightarrow ? + 2 = 6 \Rightarrow ? = 4$

**43. (e);** $?^2 = \frac{55}{100} \times 440 - \frac{80}{100} \times 345 + 2 \times 7^2$
$?^2 = 242 - 276 + 98 = 64$
$\Rightarrow ? = 8$

**44. (a);** $? = \frac{209}{399} \times 21^2 - (11)^2$
$? = \frac{19 \times 11}{19 \times 21} \times 21^2 - 11^2$
$? = 231 - 121 = 110$

**45. (c);** $? = 86 \times 5 + 26 \times 11 - 22 \times 13$
$? = 430 + 286 - 286$
$? = 430$

**S(46 – 50):**
Let total number of boys and girls like M.S. Dhoni is 13x & 7x respectively
And. Total number of boys like Virat Kohli = 7x – 30
While total number of girls like Virat Kohli = 7x –30 – 60 = $7x - 90$
ATQ –
13x + 7x + (7x –30) + $(7x - 90) = 900$
34x = 1020
x = 30

| Boys like M.S. Dhoni | Girls Like M.S. Dhoni | Boys Like Virat Kohli | Girls like Virat Kohli |
|---|---|---|---|
| 13× 30 = 390 | 7 × 30 = 210 | 7 × 30 – 30 = 180 | 7 × 30 – 90 = 120 |

**46. (a);** Required difference = 390 – 180 = 210

**47. (b);** Required ratio = $\frac{210}{120}$ = 7 : 4

**48. (d);** Total number of boys like M.S. Dhoni & Virat Kohli = 390 + 180 = 570
Total number of girls like M.S. Dhoni & Virat Kohli = 210 + 120 = 330
Required percentage = $\frac{570-330}{330} \times 100$
$= \frac{240}{330} \times 100 = 72\frac{8}{11}\%$

**49. (d);** Total number of boys like M.S. Dhoni & Virat Kohli together in school 'Y'
$= 210 \times \frac{7}{3} + 120 \times \frac{275}{100} = 490 + 330 = 820$
Required difference = 820 – (390 + 180) = 250

**50. (a);** Required average = $\frac{390+210}{2} = 300$

**Solution (51-55)**
Total number of girls in school B and E together
$\rightarrow [100-20-15-24-9]\% = 462 + 594$
$\Rightarrow 32\% = 1056$
$\Rightarrow 100\% = 3300$
Total number of girls in Six school together = 3300

**51. (b);** Required central angle = $\frac{594}{3300} \times 360 = 64.8°$

**52. (c);** Total number of girls in school D = $\frac{24}{100} \times 3300$
= 792
Required difference = 792 – 462 = 330

**53. (e);** Total number of girls in school A & D together
$= \frac{(20+24)}{100} \times 3300 = 44 \times 33 = 1452$

**54. (a);** Total number of students in school F
$= \frac{9}{9} \times \frac{17}{100} \times 3300 = 561$

**55. (b);** Required % = $\frac{20-15}{20} \times 100 = \frac{5}{20} \times 100 = 25\%$

**56. (b);** $? \approx \frac{96+189}{19} = \frac{285}{19} = 15$

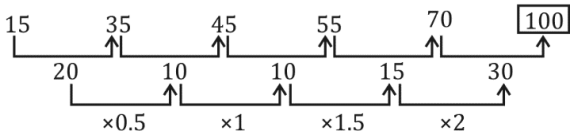
**57. (e);** $? \times 25 \simeq \sqrt{900} + 120 \Rightarrow ? \simeq \frac{30+120}{25} = 6$

**58. (a);** $? \simeq \frac{250}{165} \times \frac{180}{75} \times \frac{121}{20} = 22$

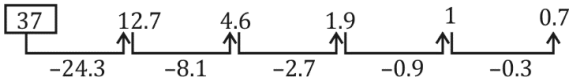
**59. (d);** $5^{?} \simeq \frac{125 \times 500}{100 \times 25} = 25$
$? = 2$

**60. (d);** $\frac{60}{100} \times 720 + \frac{45}{100} \times 960 \simeq \frac{90}{100} \times ?$
$\Rightarrow ? = \frac{(432+432)}{9} \times 10 \Rightarrow ? = \frac{864}{9} \times 10 = 960$

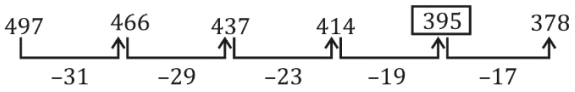
**61. (d);**



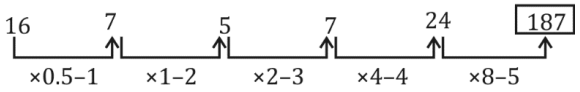

**62. (b);**



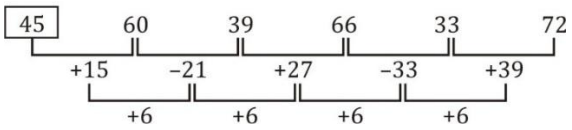

**63. (a);**




**64. (c);**




**65. (a);**




**66. (e);** $(15)^2 + (?)^2 = 24 \times 22 + 23 \times 6$
$\Rightarrow ?^2 = 528 + 138 - 225$
$\Rightarrow ?^2 = 441 \Rightarrow ? = 21$

**67. (c);** $? + 312 + 2^5 = 4^5 - 17 \times 5$
$\Rightarrow ? = 1024 - 85 - 312 - 32$
$\Rightarrow ? = 595$

**68. (d);** $? = \frac{55}{100} \times 320 + \frac{88}{100} \times 400$
$? = 176 + 352$
$\Rightarrow ? = 528$

**69. (b);** $\sqrt{?} = \sqrt{144 - 162 + 26}$
$\sqrt{?} = \sqrt{8} \Rightarrow ? = 8$

**70. (d);** $\frac{? \times 48}{27} = \frac{288}{18} \times 9 \Rightarrow ? = 81$

**71. (d);** Let Present age of A and B be a and b respectively
ATQ,
b – 8 = 1.6 (a–8)
5b – 40 = 8a – 64
$\Rightarrow$ 8a – 5b = 24 ... (i)
while $\frac{a}{b} = \frac{3}{4}$ ... (ii)
On solving (i) & (ii)
a = 18, b = 24
B's age four years hence = 24 + 4 = 28 years

**72. (b);** Volume of cylinder = $\pi r^2 h$ (r-radius , h – height)
Volume of sphere = $\frac{4}{3}\pi r^3$
ATQ
$\frac{\pi r^2 h}{\frac{4}{3}\pi r^3} = \frac{3}{1} \Rightarrow \frac{h}{r} = \frac{4}{1} \Rightarrow h = 4r$
T.S.A of cylinder = $2\pi r$ (r+h)
T.S.A of sphere = $4\pi r^2$
Required Ratio = $\frac{2\pi r\,(r+h)}{4\pi r^2} = \frac{4r+r}{2r} = \frac{5}{2}$

**73. (b);** Total work = (X) (X–2) = (X–10) (2X)
$\Rightarrow$ X – 2 = 2X – 20 $\Rightarrow$ X = 18
Let (X–6) men can complete half of the work in 'y' days
ATQ,
$(X-6) \times y = \frac{X(X-2)}{2}$
$\Rightarrow y = \frac{18 \times 16}{2 \times 12} = 12$ days

**74. (e);** On selling mixture, retailer earns 150% profit
⇒ If container contains 5 $l$ of mixture then quantity of milk is 2 $l$.
Let x $l$ of water is added in container
ATQ
$\frac{60}{40+x} = \frac{2}{3}$
⇒ 180 = 80 + 2x ⇒ $\boxed{x = 50\ l}$

**75. (d);** ATQ,
$\frac{6}{12+6+x} = \frac{2}{9} \Rightarrow x = \frac{18}{2} = 9$
Required probability = $\frac{9+12}{12+6+9} = \frac{21}{27} = \frac{7}{9}$
Alternate, Required Probability = 1 – Probability of choosing one green ball $= 1 - \frac{2}{9} = \frac{7}{9}$

**76. (a);** Speed of train in m/s $= \frac{60\times505}{18} = \frac{50}{3}$m/s
Distance covered by train in 15 seconds
$= \frac{50}{3} \times 15 = 250$ meter
Length of platform = 250 – 180 = 70 meter
Speed of man $= \frac{70}{4} \times \frac{60}{1000} = 1.05$ km/hr

**77. (b);** Let number is 'x'
$So \Rightarrow \frac{3}{7}x = 60$
x= 140
$80\%\ of\ x = \frac{80}{100} \times 140 = 112$

**78. (e);** Number of ways = 9!

**79. (c);** Total cards = 52
Red cards = 26
ueen cards = 4
Required Probability ⇒ $\frac{26+4-2}{52} = \frac{7}{13}$

**80. (a);** Total income = 20000 Rs
Saving = x Rs
Saving % $= \frac{x}{20000} \times 100 = \frac{x}{200}\%$
New, salary = 35000
New saving $= \frac{35000\times x}{200\times100} = \frac{7}{4}x\ Rs$
percentage increase in saving $= \frac{\frac{7}{4}x-x}{x} \times 100$
= 75%

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# Mock 26

# IBPS RRB Clerk Prelims

## REASONING ABILITY

**Directions (1-5):** In each of the question, relationships between some elements are shown in the statements. These statements are followed by conclusions numbered I and II. Read the statements and give the answer.
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

**1.** **Statements:** $E \geq J = O \geq T \geq Y < M > C$
**Conclusions:** **I.** $J > C$ **II.** $M < E$

**2.** **Statements:** $W > O \leq R < T \leq V = U > Q$
**Conclusions:** **I.** $U > O$ **II.** $V < W$

**3.** **Statements:** $P > U < C \geq Z = X \geq S > F$
**Conclusions:** **I.** $Z \geq P$ **II.** $S \leq C$

**4.** **Statements:** $A \leq B \leq D = E \leq C = H > G$
**Conclusions:** **I.** $B < C$ **II.** $C = B$

**5.** **Statements:** $I = N > K \geq P < O \leq T \leq S$
**Conclusions:** **I.** $P < I$ **II.** $S \geq O$

**Directions (6-10):** In each of the questions given below, a group of digits/letter is given followed by four combinations of symbols numbered(a) ,(b) ,(c) and(d) . You have to find out which one of the four combinations correctly represents the group of digits/letters based on the symbol codes and the conditions given below. If none of the four combinations represents the group of digits correctly, give(e) i.e. 'None of these' as the answer.

| Digit | I | G | 4 | 8 | E | N | 9 | P | K | W | 3 | U | 1 | R | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | ? | < | µ | > | = | © | $ | @ | # | & | ^ | * | % | + | ~ |

Condition for coding the group elements:
(i) If the first element is vowel and the last element is perfect cube, then both are to be coded as %.
(ii) If the first element is a consonant and the last element is even number, then both are to be coded by the code of the first element.
(iii) If the first element is an odd number and the last element is an alphabet, then both are to be coded by the code of the last element.
(iv) If the first element is an odd number and the last element is an even number, then the obtained code will be reversed.

**6.** G8NEI4
(a) <>©=?µ (b) ><©=?> (c) <>©=?>
(d) <>©=?< (e) None of these

**7.** 1PK9W8
(a) %@#$&> (b) <&$#@% (c) >&#$@%
(d) >&$#@% (e) None of these

**8.** 39K4RB
(a) ^$#µ+~ (b) ~$µ#+~ (c) ~$#µ+~
(d) ~$#µ+^ (e) None of these

**9.** 1UG8B9
(a) $*<>~$ (b) %*<>~$ (c) %*><~$
(d) %>*<~$ (e) None of these

**10.** U4RN91
(a) %µ+©$% (b) *µ+©$% (c) %µ+©$*
(d) %µ+$©% (e) None of these

**Directions (11-15):** In each of the questions below are given some statements followed by two conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer

**11.** **Statements:**
All fruits are flowers
Some flowers are vegetables
No vegetables is grain
**Conclusions**
I. Some grain are not flowers
II. Some fruits are vegetables
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**12.** **Statements:**
Some rice are wheat
Some wheat are pulses
All pulses are diet
Conclusions:
I. Some diet being rice is a possibility
II. All pulses are rice
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**13. Statements**
All film is movie
All movie is netflix
Some netflix is prime
Conclusions:
I. Some film being prime is a possibility
II. All film is netflix
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**14. Statements:**
Some cup are glass
Some glass are plate
No plate is vessel
Conclusions:
I. Some cup are not vessel
II. All cup are vessel
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**15. Statements**
Some red are white
Some white are pink
All red are blue
Conclusions:
I. Some blue are white
II. Some pink are blue
(a) Both I and II follow
(b) Either I or II follows
(c) Only II follows.
(d) Only I follows.
(e) Neither I nor II follows

**Directions (16-20):** Study the following information carefully and answer the given questions:
Eight friends A, B, C, D, E, F, G and H are sitting around a square table in such a way that four of them sit at four corners of the square while the other four sit in the middle of each sides. The ones who sit at the four corners face towards the centre while those who sit in the middle of the sides face outside.
E sits third to the left of B. Two persons sit between F and B. D sits to the immediate right of F. G sits second to the left of H. H is an immediate neighbor of C. C faces outside. A is not an immediate neighbor of D.

**16.** Who sits exactly between G and H?
(a) E (b) B (c) C
(d) D (e) None of these

**17.** What is the position of A with respect to B?
(a) Immediate right
(b) Second to the right
(c) Third to the right
(d) Fourth to the left
(e) None of these

**18.** Four of the following five are alike in a certain way and so form a group. Who among the following does not belong to that group?
(a) E (b) F (c) H
(d) D (e) G

**19.** Who sits opposite to B?
(a) G (b) H (c) A
(d) D (e) None of these

**20.** Who among the following pair sits at the corner?
(a) A, C (b) E, B (c) D, H
(d) F, G (e) None of these

**Directions (21-25):** Study the following information carefully to answer the given questions.

P, Q, R, S, T and U are six faculties. All faculties take lectures on different days of the week starting from Monday to Sunday (but not necessarily in the same order). One Day in the week is Holiday.

S takes lecture on Saturday. Not more than two persons take lecture between S and R. P takes his lecture immediately before R. T takes his lecture before U but not on Thursday. No one takes lecture after Q. Neither Monday nor Friday is a Holiday. T does not take his lecture on Monday.

**21.** On which of the following day of the week does P takes his lecture?
(a) Friday (b) Tuesday (c) Thursday
(d) Wednesday (e) Monday

**22.** How many persons take lectures between S and P?
(a) None (b) One (c) Two
(d) Three (e) More than three

**23.** Which among the following day is a Holiday?
(a) Tuesday (b) Wednesday (c) Thursday
(d) Sunday (e) None of these

**24.** Which of the following statement is not true?
(a) R takes his lecture on Tuesday
(b) U takes his lecture before S
(c) T takes his lecture after R
(d) P takes his lecture on Wednesday
(e) None of these

**25.** U takes his lecture on which day?
(a) Saturday (b) Friday (c) Tuesday
(d) Thursday (e) Monday

**26.** If "SHIP" is coded as "4721", "PLUS" is coded as "1854", then "HILL" will be coded as ?
(a) 1847 (b) 5421 (c) 7288
(d) 1788 (e) None of these

**27.** How many meaningful words can be formed from the second, third, fifth and seventh letter of the word "**BEAUTIFUL**" without repeating the letters?
(a) One
(b) Two
(c) Three
(d) More than three
(e) None of the above

**28.** If all the digits are rearranged in ascending order in number **89436521**, then which of the following will be fifth from the right end?
(a) 3 (b) 5 (c) 4
(d) 6 (e) None of these

**29.** If all the vowels are dropped from the word "**INCREDIBLE**", then which among the following will be fourth from the left end?
(a) R (b) D (c) B
(d) L (e) None of these

**30.** How many pairs of letters are there in the word" **FISCAL**" which have as many letters between them in the word as in alphabetical series?
(a) None (b) One (c) Two
(d) Three (e) Four

**Directions (31-35):** These questions are based on the following set of numbers.
428 527 139 814 729

**31.** If all the digits in each number are arranged in descending order within the number, then which of the following will form the second highest in the new arrangement?
(a) 428 (b) 527 (c) 139
(d) 814 (e) 729

**32.** If all the digits in each number are arranged in ascending order within the number, then which of the following will form the third lowest in the new arrangement?
(a) 428 (b) 527 (c) 139
(d) 814 (e) 729

**33.** What will be the difference between the third digit of the lowest number and second digit of the highest number?
(a) 6 (b) 3 (c) 5
(d) 8 (e) 7

**34.** If '1' is added to all the given numbers, then the resultant of how many numbers will not be divisible by 3?
(a) One (b) Two (c) Three
(d) Four (e) More than four

**35.** Which of the following will be the sum of the second digit of the highest number and third digit of the second lowest number?
(a) 10 (b) 9 (c) 8
(d) 6 (e) None of these

**Directions (36-40):** Study the information and answer the following questions:

Twelve persons are sitting in two parallel rows facing each other. A, B, C, D, E and F are sitting in row 1 facing north and P, Q, R, S, T and U are sitting in row 2 facing south (not necessarily in the same order).

E sits third to the right of B and one of them sits at an extreme end of the row. R faces B. R sits to the immediate right of S. Three persons sit between P and Q and one of them sits at an extreme end of the row. P does not face E or F. D sits to the immediate left of F and neither of them sits at any extreme end. U faces C. R is not an immediate neighbor of U.

**36.** Who among the following sit fourth to the right of T?
(a) P (b) U (c) R
(d) Q (e) None of these

**37.** What is the position of C with respect to D?
(a) Third to the left
(b) Third to the right
(c) Second to the left
(d) Immediate right
(e) Cannot be determined

**38.** Who faces E?
(a) U (b) P (c) R
(d) Q (e) None of these

**39.** Who faces the immediate neighbor of U?
(a) B (b) A (c) C
(d) D (e) Cannot be determined

**40.** Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?
(a) E (b) Q (c) U
(d) B (e) C

# QUANTITATIVE APTITUDE

**Directions (41-45):** Find the approximate value of question marks (?) in following questions?

**41.** $64.98\%\ of\ 360.01 - ?\%\ of\ 249.99 = 138.923$
(a) 45 (b) 38 (c) 52
(d) 32 (e) 25

**42.** $\sqrt{911.95 \div 24.11 + 184.01 - 52.937} = ?$
(a) 13 (b) 17 (c) 15
(d) $(17)^2$ (e) 169

**43.** $(14.9)^2 - (5.01)^3 + \sqrt{1520.98} + 8.933 \times 13.011 = (?)^2$
(a) 12 (b) 14 (c) 16
(d) 18 (e) 26

**44.** $(3749.98 - ?) \div 55.012 = 22.991$
(a) 2465 (b) 2445 (c) 2495
(d) 2475 (e) 2485

**45.** $(3416.023 \div 55.991) - (1133.96 \div ?) = 18.989$
(a) 13 (b) 17 (c) 23
(d) 27 (e) 37

**Direction (46-50):** The given table shows the data related to five students and the total number of movies watched by them during a period of ten years.
Total number of movies = Number of Hollywood movies + Number of Bollywood movies.

| Students | Total number of movies watched | Ratio of Hollywood to Bollywood movies |
|---|---|---|
| A | 350 | 4 : 3 |
| B | 400 | 11 : 9 |
| C | 250 | 3 : 7 |
| D | 200 | 13 : 12 |
| E | 375 | 16 : 9 |

**46.** What is average number of Bollywood movies watched by students A, B and D together?
(a) 132 (b) 138 (c) 142
(d) 144 (e) 146

**47.** The total number of Hollywood movies watched by student E is what percent more/less than the total number of movies watched by student B?
(a) 40% (b) 45% (c) 35%
(d) 30% (e) 50%

**48.** The total number of Hollywood movies watched by students C and B together is how much more/less than the total number of Bollywood movies watched by student D & E together?
(a) 54 (b) 74 (c) 60
(d) 64 (e) 70

**49.** Find the ratio of total number of movies watched by student C & D together to the number of Bollywood movies watched by B, C and E together?
(a) 49 : 45 (b) 45 : 49 (c) 90 : 97
(d) 10 : 11 (e) 9 : 11

**50.** The average of total number of movies watched by B and D is what percent of the average of total number of movies watched by A and C.
(a) 125% (b) 75% (c) 80%
(d) 120% (e) 100%

**51.** If the present population of a city is 55,566, which was 35000 2 years ago, then find the rate of increase of population per year.
(a) 24% (b) 25% (c) 23%
(d) 26% (e) 22%

**52.** Roni purchased a cycle for Rs. 12000 and sold it at a loss of 20% with that amount he purchased another cycle and sold it at 30% profit. What was his overall gain/loss ?
(a) 720 loss (b) 480 loss (c) 480 profit
(d) 720 profit (e) No profit no loss

**53.** On a sum Sima earn a interest of Rs. 1519 at S.I. in 7 years at 7% p.a. Find the sum.
(a) 3100 Rs. (b) 3000 Rs. (c) 2800 Rs.
(d) 3200 Rs. (e) 3500 Rs.

**54.** A certain amount was to be distribute between X, Y and Z in the ratio of 1 : 2 : 3 respectively. At the time of distribution amount distributed wrong in the ratio of 5 : 4 : 6 due to which X got 305 Rs. more. Find the actual amount get by Z.
(a) 915 Rs. (b) 477 Rs. (c) 610 Rs.
(d) 183 Rs. (e) 732 Rs.

**55.** Mahendra is 12 year younger than Niraj. Niraj's age 3 years ago was three times the present age of Bhavya. At present Mahendra's age is twice the age of Bhavya. What is the present age of Niraj.
(a) 18 (b) 30 (c) 27
(d) 9 (e) 15

**Directions (56-65):** Simplify and find the value of question marks (?) in following questions?

**56.** $\frac{2}{3}\ of\ \frac{4}{5}\ of\ \frac{3}{7}\ of\ 2205 = ?$
(a) 494 (b) 504 (c) 484
(d) 514 (e) 524

**57.** $2\frac{3}{7} - 3\frac{1}{4} + 4\frac{3}{8} - 1\frac{1}{56} = ?$
(a) $2\frac{15}{28}$ (b) $2\frac{31}{56}$ (c) $2\frac{1}{2}$
(d) $2\frac{25}{56}$ (e) $2\frac{4}{7}$

**58.** $119 + 34 - 67 + 259 - ? = 88$
(a) 15 (b) 9 (c) 39
(d) 29 (e) 19

**59.** $\sqrt{12^2 \times 32 \div 48 + 174 + 9 \times 6} = (?)^2$
(a) $2\sqrt{3}$ (b) $3\sqrt{2}$ (c) 3
(d) 6 (e) 9

**60.** $53 \times 48 - ? = 29 \times 70$
(a) 504 (b) 524 (c) 514
(d) 512 (e) 518

**61.** 85% of ? of 6755 = 3281
(a) $\frac{4}{7}$ (b) $\frac{2}{7}$ (c) $1\frac{1}{7}$
(d) $\frac{6}{7}$ (e) $1\frac{3}{7}$

**62.** $\sqrt[3]{?} \times \sqrt[3]{2197} = \sqrt[4]{(8281)^2}$
(a) 512 (b) 216 (c) 125
(d) 343 (e) 729

**63.** $\sqrt{9409} - \sqrt{1156} = 3339 \div ?$
(a) 43 (b) 63 (c) 53
(d) 47 (e) 57

**64.** $(320\% \ of \ 825) \div ? = 48$
(a) 55 (b) 45 (c) 65
(d) 58 (e) 75

**65.** $\frac{2}{21} \ of \ 2268 \div 12 + ? = \sqrt{3025}$
(a) 47 (b) 37 (c) 27
(d) 57 (e) 45

**66.** To make a 100 litre solution of acid 40% from 50%. How much water must added ?
(a) 50 litre (b) 75 litre (c) 15 litre
(d) 10 litre (e) 25 litre

**67.** 5 men can do a work in 16 days and 8 women can do the same work in 15 days. In how many days 2 man and 3 women can do the work together ?
(a) 22 days (b) 20 days (c) 21 days
(d) 18 days (e) 24 days

**68.** A car can cover a distance in 9 hour at the speed of 70 km/hr at what percent should the speed of car increase so distance can covered in 6 hr.
(a) 25% (b) 40% (c) 35%
(d) 50% (e) 60%

**69.** The number obtained by interchanging the two digits of a two digit number is lesser than the original number by 54. If the sum of the two digits of number is 12, then what is the original number ?
(a) 28 (b) 39 (c) 82
(d) 89 (e) 93

**70.** What is the speed of car (in km/hr), which overtakes a running train in 20 second. Length of train is 180 meter and its speed is 33⅓% less than speed of car. (Car's length is negligible)
(a) 100 km/hr (b) 81 km/hr (c) 105 km/hr
(d) 90 km/hr (e) 97.2 km/hr

**Direction (71–75):** What will come in the place of question (?) mark in the following number series.

**71.** ?, 46, 71,87,96,100
(a) 8 (b) 12 (c) 9
(d) 10 (e) 11

**72.** 218,231, 253,293,369,?
(a) 507 (b) 517 (c) 515
(d) 516 (e) 519

**73.** 1308, ?, 324,160,78,37
(a) 652 (b) 762 (c) 682
(d) 672 (e) 632

**74.** 64,71, 81,96,?,149
(a) 116 (b) 112 (c) 118
(d) 122 (e) 120

**75.** 18, 57,174, 525, 1578,?
(a) 4737 (b) 4677 (c) 4697
(d) 4717 (e) 4767

**76.** A man have two dice, if he rolled both dice, then find the probability that sum of digits will be 5 or 7 ?
(a) $\frac{1}{18}$ (b) $\frac{1}{12}$ (c) $\frac{5}{9}$
(d) $\frac{5}{18}$ (e) $\frac{7}{18}$

**Directions (77-80):** Each of the following questions below consists of a question and two statements numbered I and II given. You have to decide whether the data provided in the statements is sufficient to answer the questions.
Give answer
(a) if the data given in statement I alone is sufficient to answer the question while the data in statement II alone is not sufficient to answer the question.
(b) if the data given in statement II alone is sufficient to answer the question while the data in statement I alone is not sufficient to answer the question.
(c) if the data either in statement I alone or in statement II alone is sufficient to answer the question.
(d) If the data in neither statement I nor II is sufficient to answer the question.
(e) If the data in both statements I and II together is necessary to answer the question.

**77.** Find the cost price of article by shopkeeper on selling the article at Rs. 240 ?
(I) If the article sold at 25% more the profit earned will be Rs. 40.
(II) Marked price of article is Rs. 400 and profit% is equal to discount% and profit% is 40%.

**78.** Find the volume of right circular cone ?
(I) Height of cone is 100% more than radius of cone.
(II) Area of base of cone is 154 $cm^2$.

**79.** Find the value of $2^x \times 3^y$. x and y are natural numbers and x is greater than y.
(a) Sum of value of x and y is 8.
(b) Product of value of x & y is 12.

**80.** Find the speed of boat in still water?
(I) Time taken by boat to cover 64 km in downstream is half the time taken by same boat to cover same distance in still water.
(II) Speed of stream is 5 km/hr

# Mock 26 : Solutions

## REASONING ABILITY

**Direction (1-5):**

1. **(d);** **I.** J > C (False) **II.** M < E (False)
2. **(a);** **I.** U > O (True) **II.** V < W (False)
3. **(b);** **I.** Z ≥ P (False) **II.** S ≤ C (True)
4. **(c);** **I.** B < C (False) **II.** C = B (False)
5. **(e);** **I.** P < I (True) **II.** S ≥ O (True)

**Directions (6-10):**

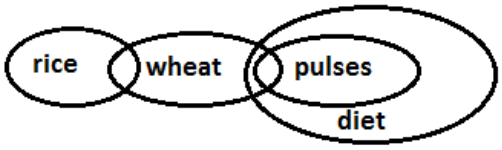
6. **(d);** By using condition (ii) the code for 'G8NEI4' will be <>©=?<
7. **(d);** By using condition (iv) the code for '1PK9W8' will be >&$#@%
8. **(c);** By using condition (iii) the code for '39K4RB' will be ~$#µ+~
9. **(b);** The code for '1UG8B9' will be %*<>~$
10. **(a);** By using condition (i) the code for 'U4RN91' will be %µ+©$%

**Directions (11-15):**

11. **(e);**

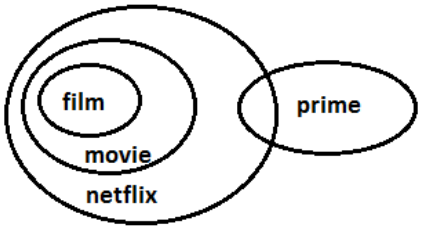

For I – Since, there is no direct relation between element flowers and grain. Hence, Conclusion I cannot be concluded.
For II – Since, there is no direct relation between element fruits and vegetables. Hence, Conclusion II cannot be concluded.

12. **(d);**




For I – Since, there is no direct relation between element rice and diet therefore possibility case will hold true. Hence, Conclusion I can be concluded.
For II – Since, there is no direct relation between element rice and pulses. Hence, Conclusion II cannot be concluded.

13. **(a);**

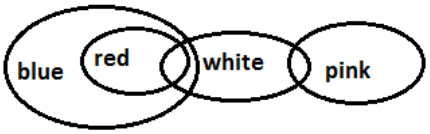



For I –Since there is no direct relation between element film and prime therefore possibility case will hold true. Hence, Conclusion I can be concluded.
For II – Since all film is movie and all movie is netflix therefore all film is netflix will hold true. Hence, Conclusion II can be concluded.

14. **(b);**


For I – Since, there is no direct relation between element cup and vessel. Hence, Conclusion I cannot be concluded.
For II – Since, there is a no direct relation between element cup and vessel. Hence, Conclusion II cannot be concludedince the elements are same and 'all' & 'some not' case is mentioned. Therefore, "Either –Or" case will be concluded

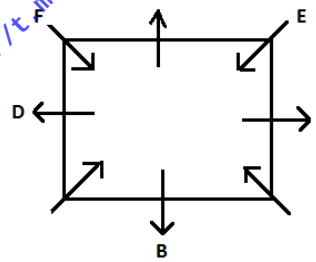
15. **(d);**

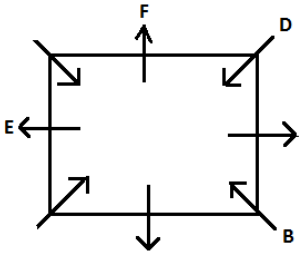



For I – Since, some red is white and all red is blue therefore some blue is white will hold true. Hence, Conclusion I can be concluded.
For II – Since, there is no direct relation between pink and blue. Hence, Conclusion II cannot be concluded.

**Directions (16-20);** E sits third to the left of B. Two persons sit between F and B. D sits to the immediate right of F. We got two possibilities

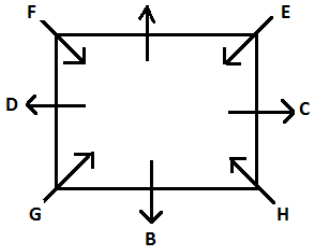
Case I Case II

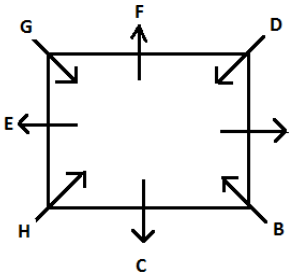


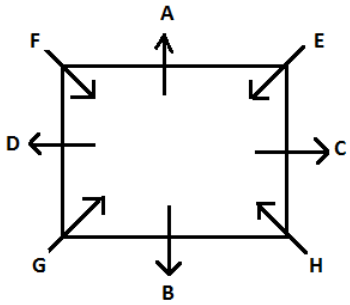

Now, C faces outside. H is an immediate neighbor of C. G sits second to the left of H.

Case I Case II




Now, A is not an immediate neighbor of D. This will eliminate Case II. The final arrangement will be




**16. (b); 17. (d); 18. (d);**

**19. (c); 20. (d);**

**Directions (21-25):** S takes lecture on Saturday. No one takes lecture after Q i.e. Q takes his lecture on Sunday. Not more than two persons take lecture between S and R. P takes his lecture immediately before R. We will have four possibilities

Case 1 Case 2

| Days | Person | Days | Person |
|---|---|---|---|
| Monday | | Monday | |
| Tuesday | | Tuesday | |
| Wednesday | | Wednesday | P |
| Thursday | P | Thursday | R |
| Friday | R | Friday | |
| Saturday | S | Saturday | S |
| Sunday | Q | Sunday | Q |

Case 3 Case 4

| Days | Person | Days | Person |
|---|---|---|---|
| Monday | | Monday | P |
| Tuesday | P | Tuesday | R |
| Wednesday | R | Wednesday | |
| Thursday | | Thursday | |
| Friday | | Friday | |
| Saturday | S | Saturday | S |
| Sunday | Q | Sunday | Q |

Now, T takes his lecture before U but not on Thursday. Neither Monday nor Friday is a Holiday. T does not take his lecture on Monday. This will eliminate Case 1, Case 2 and Case 3. The final arrangement will be –

| Days | Person |
|---|---|
| Monday | P |
| Tuesday | R |
| Wednesday | T |
| Thursday | Holiday |
| Friday | U |
| Saturday | S |
| Sunday | Q |

**21. (e); 22. (d); 23. (c);**

**24. (d); 25. (b);**

**26. (c);**

| | | | |
|---|---|---|---|
| H | I | L | L |
| 7 | 2 | 8 | 8 |

**27. (c);** FATE, FEAT, FETA

**28. (c); 4**

**29. (b);** D

**30. (b);**

F I S C A L

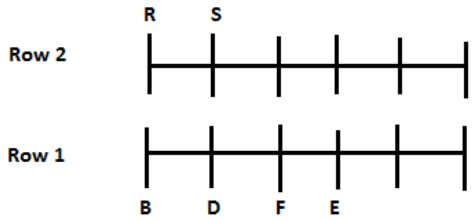
**Directions (31-35):**

**31. (c); 32. (a); 33. (d);**

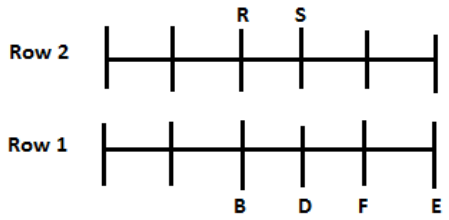
**34. (c); 35. (b);**

**Directions (36-40):** E sits third to the right of B and one of them sits at an extreme end of the row. R faces B. R sits to the immediate right of S. D sits to the immediate left of F and neither of them sits at any extreme end. We got two possibilities –

Case 1

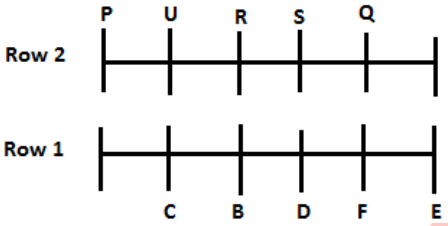



Case 2

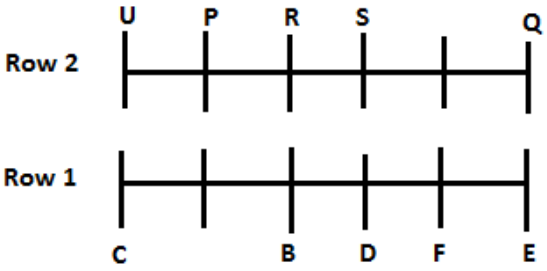



Now, three persons sit between P and Q and one of them sits at an extreme end of the row. This will eliminate Case 1. P does not face E or F. U faces C. Now we will have two possibilities in Case 2 –

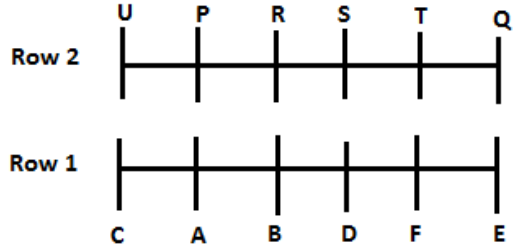
Case 2(a)




Case 2(b)




Now, R is not an immediate neighbor of U. This will eliminate Case 2(a). So the final arrangement will be –




**36. (b); 37. (a); 38. (d);**

**39. (b); 40. (d);**

## QUANTITATIVE APTITUDE

**41. (b);** $\frac{65\times360}{100}-\frac{?}{100}\times250\approx139$

$\Rightarrow 234-\frac{25\times?}{10}=139 \quad \Rightarrow ?=\frac{95\times10}{25}=38$

**42. (a);** $\sqrt{912\div24+184-53}\approx ?$

$\Rightarrow ?=\sqrt{169}=13$

**43. (c);** $(15)^2-(5)^3+\sqrt{1521}+9\times13\approx(?)^2$

$\Rightarrow 225-125+39+117=(?)^2$

$\Rightarrow ?=\sqrt{256}=16$

**44. (e);** $(3750-?)\div55\approx23$

$\Rightarrow ?=3750-55\times23$

$?=2485$

**45. (d);** $(3416\div56)-(1134\div?)\approx19$

$\Rightarrow 61-\frac{1134}{?}=19 \Rightarrow 42=\frac{1134}{?} \Rightarrow ?=27$

**46. (c);** Required average $=\frac{350\times\frac{3}{7}+400\times\frac{9}{20}+200\times\frac{12}{25}}{3}$

$=\frac{150+180+96}{3}=142$

**47. (a);** Total number of Hollywood movies watched by student

E = $375\times\frac{16}{25}=240$

Required percentage = $\frac{(400-240)}{400}\times100$

$=\frac{160}{400}\times100=40\%$

**48. (d);** Total number of Hollywood movies watched by students C and B together = $250\times\frac{3}{10}+400\times\frac{11}{20}$

= 75 + 220 = 295

Total number of Bollywood movies watched by students D and E together = $\frac{200\times12}{25}+\frac{375\times9}{25}$

= 96 + 135 = 231

Required difference = 295 – 231 = 64

**49. (b);** Required ratio = $\frac{250+200}{\frac{400\times9}{20}+\frac{250\times7}{10}+\frac{375\times9}{25}}=\frac{450}{490}=45:49$

**50. (e);** Required percentage = $\frac{(400+200)}{(350+250)}\times100=100\%$

**51. (d);** Let increase per year is $x\%$

So,

$35000\times\frac{(100+x)}{100}\times\frac{(100+x)}{100}=55566$

$x=26\%$

**52. (c);** 1st C.P. → 12000 Rs.
1st S.P. → $\frac{12000\times80}{100}$ = 9600 Rs.
Now,
2nd C.P. → 9600 Rs.
2nd S.P. → $\frac{9600\times130}{100}$ = 12480 Rs.
Profit ⇒ 480 Rs.

**53. (a);** Let sum = P
Now,
$\frac{P\times7\times7}{100}$ = 1519
P = $\frac{1519\times7\times7}{100}$
P = 3100 Rs.

**54. (e);** Let amount = 30x
So,
X, Y and Z was to get ⇒ 5x, 10x, 15x respectively
But
X, Y and Z actually get ⇒ 10x, 8x, 12x respectively
X got ⇒ 10x – 5x = 305 ⇒ x = 61
o Z get ⇒ 61 × 12 = 732 Rs.

**55. (b);** Let age of Mahendra = $x$
So age of Niraj = x + 12
Present age of Bhavya = $\frac{(x+12-3)}{3}=\frac{x+9}{3}$
Now,
$\frac{x}{\frac{x+9}{3}}=\frac{2}{1}$
$x = 18$
Niraj's age ⇒ 18 + 12 = 30

**56. (b);** $\frac{2}{3}\times\frac{4}{5}\times\frac{3}{7}\times2205=?$ ⇒ $?=504$

**57. (a);** $?=2-3+4-1+\left(\frac{3}{7}-\frac{1}{4}+\frac{3}{8}-\frac{1}{56}\right)$
$?=2+\left(\frac{24-14+21-1}{56}\right)=2\frac{30}{56}=2\frac{15}{28}$

**58. (e);** $-119+34-67+259-?=88$ ⇒ $?=19$

**59. (b);** $\sqrt{144\times32\div48+174+54}=(?)^2$
⇒ $(?)^2=\sqrt{324}$ ⇒ $(?)^2=18 \Rightarrow ?=3\sqrt{2}$

**60. (c);** $53\times48-?=29\times70$
⇒ $?=53\times48-29\times70$
$?=514$

**61. (a);** $\frac{85}{100}\times?\times6755=3281$ ⇒ $?=\frac{3281\times100}{85\times6755}=\frac{4}{7}$

**62. (d);** $\sqrt[3]{?}\times13=91$ ⇒ $?=(7)^3=343$

**63. (c);** $\sqrt{9409}-\sqrt{1156}=3339\div?$
⇒ $3339\div?=97-34=63$
⇒ $?=\frac{3339}{63}=53$

**64. (a);** $\left(\frac{320}{100}\times825\right)\div?=48$
⇒ $\frac{2640}{48}=?$ ⇒ $?=55$

**65. (b);** $216\div12+?=55$
⇒ $?=37$

**66. (e);** Present acid = 50 × 100 = 50 litre
Amount of water in final solution = $\frac{50}{40}\times60$
= 75 litre
Extra water add ⇒ 75 – 50 = 25 litre

**67. (b);** Let efficiency of 1 man and 1 women is m and w respectively.
So, total work
5m × 16 = 8w × 15
$\frac{m}{w}=\frac{3}{2}$
Work done in = $\frac{3\times5\times16}{6+6}$ = 20 days

**68. (d);** Total distance = 9 × 70 = 630
New speed = $\frac{630}{6}$ = 105 km/hr
Increase in speed = $\frac{105-70}{70}\times100=50\%$

**69. (e);** Let the two digits be $x$ & $y$ with $x$ on tens place.
ATQ, $10x+y-(10y+x)=54$
or, $9x-9y=54$ or $x-y=6$
and, $x+y=12$
$\therefore x=9$ and $y=3$
So number is 93

**70. (e);** Distance = 180 meter
Time = 20 second
Relative speed of train and car = $\frac{180}{20}$ = 9 m/s
Let speed of car = $x$ m/s
o speed of train = $\frac{2}{3}x$ m/s
$x-\frac{2}{3}x=9$ m/s
$x = 27$ m/s
peed of car in km/hr = $\frac{27\times18}{5}$ = 97.2 km/hr

**71. (d);**

| 10 | 46 | 71 | 87 | 96 | 100 |
|---|---|---|---|---|---|
| | $+6^2$ | $+5^2$ | $+4^2$ | $+3^2$ | $+2^2$ |

**72. (b);**

| 218 | 231 | 253 | 293 | 369 | 517 |
|---|---|---|---|---|---|
| | 13 | 22 | 40 | 76 | 148 |
| | | 9 | 18 | 36 | 72 |

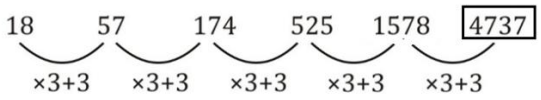
**73. (a);**

| 1308 | 652 | 324 | 160 | 78 | 37 |
|---|---|---|---|---|---|
| | ÷2–2 | ÷2–2 | ÷2–2 | ÷2–2 | ÷2–2 |

**74. (c);**

| 64 | 71 | 81 | 96 | 118 | 149 |
|---|---|---|---|---|---|
| | 7 | 10 | 15 | 22 | 31 |
| | | 3 | 5 | 7 | 9 |

**75. (a);**




**76. (d);** Total cases → 36
Favourable cases → (1, 4), (4, 1), (1, 6), (6, 1), (2, 3), (3, 2), (2, 5), (5, 2), (3, 4), (4, 3)
Required probability = $\frac{10}{36} = \frac{5}{18}$

**77. (c);** <u>From I</u>
Let C.P. of article be Rs. x.
$\frac{125}{100} \times 240 - x = 40$
$x = 300 - 40 = Rs\ 260$
<u>From II</u>
ince profit% & discount% is given and S.P. & marked price is given.
∴ cost price can be determined.
∴ Either from I or II.

**78. (e);** From I & II
Area of base of cone ($\pi r^2$) = 154
$\therefore \pi r^2 = 154$
$r^2 = 49$
∴ r = 7 cm
∴ height (h) = 7 × 2 = 14 cm.
Volume = $\frac{1}{3}\pi r^2 h$
$= \frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 14 = \frac{2156}{3}\ cm^3$

**79. (e);** <u>From I & II</u>
x + y = 8 ... (i)
xy = 12
$(x - y)^2 = (x + y)^2 - 4xy$
$(x - y)^2 = (8)^2 - 4 \times 12$
$(x - y)^2 = 16$
x – y = 4 ... (ii)
∴ x = 6 & y = 2

**80. (e);** From I & II
Let speed of boat in still water be x km/hr and speed of stream be y km/hr.
$\frac{64}{x+y} = \frac{1}{2}\frac{64}{x}$
x = y = 5 km/hr