Practice Set-9

Part—I
General Intelligence

Directions—(Q. 1–5) Each question consists of two/three statements followed by two conclusions I and II. Consider the statements to be true even if they are in variance with the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements using all the statements together. 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.

Statements for Q. 1 and 2 :

All rings are watches.
Some watches are caps.
All rings are pen.

1. **Conclusions :**
   I. All pens are caps is a possibility.
   II. All watches are pen.
2. **Conclusions :**
   I. Some caps are rings is a possibility.
   II. At least some pens are watches.

Statements for Q. 3 and 4 :

Some steels are irons.
Some aluminiums are steels.
No iron is copper.

3. **Conclusions :**
   I. Some coppers are not steels.
   II. Some irons are aluminiums.
4. **Conclusions :**
   I. No steel is copper.
   II. All coppers are aluminiums is a possibility.
5. **Statements :**
   Some rubbers are plastics.
   All glasses are plastics.
   Conclusions :
   I. Some rubbers are glasses.
   II. No glass is rubber.

Directions—(Q. 6–10) Study the following information carefully and answer the questions which follow—

7 students A, B, C, D, E, F and G are seated around a circular table, three of them are facing outside and rest of them are facing to the centre of the table. G is seated third to the left of B, who is not seated near to D. A is seated third to the right of E but not near to F. C is facing to the centre of the table and seated second to the left of D. Persons facing outside are not adjacent.

6. Which of the following group of students is facing outside ?
   (A) AEG (B) DFB
   (C) DAE (D) BGF
   (E) Cannot be determined
7. If 'D' is related to 'A' and 'F' is related to 'B' in a certain way, which of the following would 'C' be related to in the same pattern ?
   (A) E (B) G
   (C) D (D) F
   (E) Cannot be determined
8. Who is seated third to the right of D ?
   (A) F (B) B
   (C) E (D) G
   (E) Cannot be determined
9. What is the position of C with respect to A ?
   (A) Second to the left
   (B) Second to the right
   (C) Immediate left
   (D) Third to the right
   (E) Third to the left

10. Which of the following statements is true ?
(A) E is seated between C and D
(B) D is seated between G and F
(C) A is seated between B and D
(D) F is seated between A and G
(E) B is seated between A and E

Directions—(Q. 11–15) Study the following information carefully and answer the questions which follow :

8 students L, M, N, O, P, Q, R and S are sitting in a row facing to the same direction.

L is seated fourth to the right of S, who is not near to O. M is seated third to the left of R and second to the right of P. N is seated second to the left of Q.

11. Who is seated fourth to the left of N ?
(A) O (B) P
(C) S (D) M
(E) L

12. Which of the following two students are seated at the end of the row ?
(A) P and Q (B) S and Q
(C) P and L (D) S and L
(E) Cannot be determined

13. If 'R' is related to 'O' and 'N' is related to 'P' in a certain way then which of the following would 'Q' be related to in the same pattern ?
(A) R (B) S
(C) N (D) L
(E) M

14. Who is seated second to the right of O ?
(A) S (B) L
(C) N (D) P
(E) Cannot be determined

15. Which of the following statements is definitely true ?
(A) M is seated to the right of S
(B) O is seated to the left of L
(C) Q is seated to the right of L
(D) P is seated to the left of S
(E) N is seated to the right of M

Directions—(Q. 16–20) Study the following information carefully and answer the questions which follow :

A group of two females and three males, A, B, C, D and E are sitting around a circular table. Among the three males there is a singer, an actor and a dancer, while females are unemployed. C is a dancer and married to A, who is the mother of B. The actor is seated immediate right of E. The singer is seated between the actor and his wife while both the females are not adjacent to each other. All are facing to the centre of the table. B is not near to dancer.

16. If A is daughter-in-law of E, then how D is related to B ?
(A) Mother-in-law
(B) Son-in-law
(C) Grandson
(D) Grandmother
(E) Cannot be determined

17. Who is an actor ?
(A) B (B) D
(C) A (D) Either B or A
(E) Either D or A

18. Who is seated second to the left of A ?
(A) Actor (B) Singer
(C) Dancer (D) Unemployed
(E) Cannot be determined

19. Who is seated immediate right of B ?
(A) A (B) C
(C) D (D) E
(E) Cannot be determined

20. Which of the following statements is true ?
(A) C and D are adjacent to each other
(B) A and D are adjacent to each other
(C) B and C are adjacent to each other
(D) A and C are adjacent to each other
(E) More than one of the above are true

Directions—(Q. 21–23) In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions. Read both the statements and 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.

21. **Statements :**
$A > X, M > K, M = O \geq X$
Conclusions : I. $A > K$
II. $M > X$

22. **Statements :**
$M \leq T = P, N \geq K > P$
Conclusions : I. $N > M$
II. $K \geq T$

23. **Statements :**
$C \geq D = F > G < H \leq K = L > Q$
Conclusions : I. $K \geq D$
II. $F > K$

Directions—(Q. 24–26) Study the following information carefully and answer the questions which follow :

In a certain code language,

'mu la fa ta ku' means 'he likes cold drink water'.

'tu ko la mo' means 'people take alcohol drink'.

'fu do ku tu' means 'cold alcohol is harmful'.

'ta lu do ma' means 'they use harmful water'.

'ko lo fo lu' means 'people use hygienic food'.

24. What is the code for 'they take hygienic food' ?
(A) lo fo mo fu (B) ma fa fo lo
(C) mu fa ma mo (D) ma lo fo mo
(E) None of these

25. Which word is represented by 'fa' ?
(A) He (B) Cold
(C) Likes (D) Is
(E) Cannot be determined

26. What can be the code for 'water is harmful food' ?
(A) ta fu lo do (B) do fo mo ta
(C) ta fo lo fu (D) tu do fu fo
(E) ta lo fu ko

Directions—(Q. 27–30) Study the following information carefully and answer the questions which follow :

In a family, there are six members—P, Q, R, S, T and U, each of who belongs to different professions among Manager, Painter, Architect, Scientist, Doctor and Lawyer. There are two married couples in the family and each married couple has atleast one child. U is the son of P, who is a lawyer. The painter is niece of manager. Q is the daughter of R, who is an architect. T is not married and is the sister of the scientist, who is the father of the painter. S is the grandmother of Q.

27. How lawyer is related to architect ?
(A) Husband (B) Father-in-law
(C) Brother-in-law (D) Mother-in-law
(E) Father

28. Which of the pairs is unmarried ?
(A) Manager and Doctor
(B) Doctor and Scientist
(C) Painter and Manager
(D) Doctor and Painter
(E) Cannot be determined

29. How T is related to Q ?
(A) Grandfather (B) Grandmother
(C) Uncle (D) Aunt
(E) Mother

30. Who is the scientist ?
(A) U, a male (B) T, a female
(C) S, a female (D) U, a female
(E) Q, a female

Directions—(Q. 31–35) 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 both the statements and answer.

1. If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
2. 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.
3. If the data in statement I alone or II alone are sufficient to answer the question.
4. If the data even in both statements I and II together are not sufficient to answer the question.
5. If the data in the both statements I and II together are necessary to answer the question.

31. Deepak is shorter than Ravi and Rohit is taller than Arun. Who is the shortest among them ?

Statements :

I. Ravi is taller than Rohit.

II. Arun is taller than Ravi.

32. On which day of the week did Anil visit Agra ?

Statements :

I. Anil visited Agra after Thursday but before Sunday.

II. Anil visited Agra before Monday but after Thursday but not on Saturday.

33. A, B, C, D, E and F are standing in a row facing East. Who is on the immediate left of B ?

Statements :

I. C is second to the left of F, who is fourth to the right of A.

II. B is second to the right of E and D is immediate near to F.

34. What is the code for 'hand' in a code language ?

Statements :

I. 'ka dik fu' means 'hand and finger', 'do lu ka' means 'nose and ear' and 'lu fig fu' means 'finger in nose'.

II. 'na pik la' means 'eyes and nose', 'dik ni la' means 'hand covers eyes' and 'dik ha fa' means covers your eyes.

35. P, Q, R, S and T are sitting around a circular table facing the centre. Who is on the immediate right of P?

Statements :

I. T is seated immediate left of Q and R is not near to T.

II. Only S is seated between R and P.

Directions—(Q. 36–40) Study the following information carefully and answer the questions given below—

The candidate must :

I. Be a graduate in any stream with at least 60% marks.

II. Be at least 21 years and not more than 30 years old as on 01-03-2013.

III. Have post-qualification work experience of at least 2 years in the same field.

IV. Have secured at least 70% marks in interview.

V. Have scored at least 156 marks in written examination.

All these cases are given as on 01-03-2013.

In the case of a candidate who satisfies all the criteria except.

A. At (I) but has secured at least 60% marks in postgraduate diploma/degree. his/her case is to be referred to zonal office.

B. At (IV) but has post-qualification work experience of at least three years in the same field. his/her case is to be referred to the chairman.

In each of the questions given below is the detailed information of one candidate. You are not to assume anything other than the information provided in each question. Mark answer :

(A) If the candidate is to be selected.

(B) If the candidate is not to be selected.

(C) If the data provided are not sufficient.

(D) If the case is to be referred to zonal office.

(E) If the case is to be referred to the chairman.

36. Pooja has secured 76% marks in interview and 56% marks in graduation. She has been working in a financial institution after obtaining her postgraduate degree in economics. She was born on 11 March, 1988. Her score in written examination is 163.

37. Sachin has secured 62% marks in graduation then after he worked with a private bank for 30 months, his score in written examination is 152 and marks in interview is 81%. He was born on 26 January, 1992.

38. Ravi is a junior officer in XYZ Ltd. and have a experience of more than 4 years. His marks in interview and written examination are 65% and 166 respectively. He was born on 15 August, 1989 and completed his graduation with 74% marks.

39. Neelam has secured 65% marks in graduation. She has work experience of more than three years in banking sector. She is 26 years old and secured 68% marks in interview and 169 marks in written examination.

40. Deepesh was born on February 18, 1991 and has an experience of 3 years and 9 months in a co-operative bank. His marks in written examination is 160 and in interview is 74%. He has completed his graduation with 58% and post-graduation with 64%.

Directions—(Q. 41–45) Study the information carefully and answer the given questions—

A, D, E, F, H, J and K are sitting in a straight line facing north. (not necessarily in the same order)

(a) D sits fourth to the right of A.

(b) E is on the extreme left end of the line. There are five persons between E and K.

(c) J sits third to the left of K. F is not an immediate neighbour of D.

41. Which of the following represents the person sitting exactly in the middle of the line ?

(A) J (B) F
(C) H (D) A
(E) None of these

42. How many persons sit between A and H ?

(A) One (B) Two
(C) Three (D) Four
(E) More than four

43. Four of the following are alike in a certain way based on their seating positions in the above arrangement and so form a group.

Which pair **does not** belong to that group ?

(A) AF (B) JH
(C) EA (D) DK
(E) FH

44. What is the position of F with respect to H ?

(A) Second to the right
(B) Immediate to the right
(C) Immediate to the left
(D) Third to the right
(E) Second to the left

45. If the seating arrangement (from left to right) is taken as English alphabets, how many such pairs of letters are there in the arrangement each of which has as many letters between them (in both forward and backward directions) in the arrangement, as they have between them in the English alphabetical series ?

(A) None (B) One
(C) Two (D) Three
(E) More than three

Directions—(Q. 46–50) In each of the questions given below which one of the five answer figures on the right should come after the problem figures on the left, if the sequence were continued ?

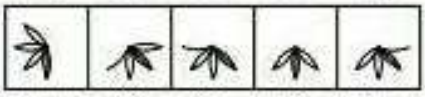
Problem Figures **Answer Figures**

46. 

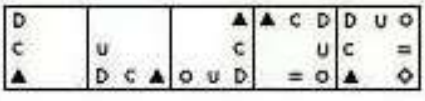
(A) 

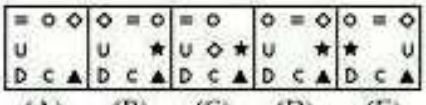
(A) (B) (C) (D) (E)

47. 

(A) 

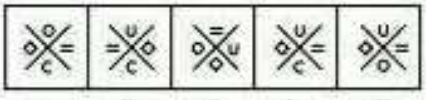
(A) (B) (C) (D) (E)

48. 

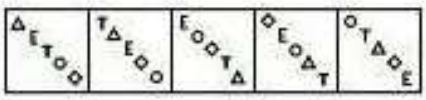
(A) 

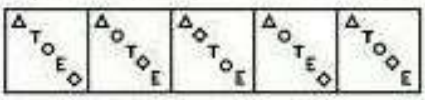
(A) (B) (C) (D) (E)

49. 

(A) 

(A) (B) (C) (D) (E)

50. 

(A) 

(A) (B) (C) (D) (E)

Answers with Explanations

For Solution Q. 1 and 2 :

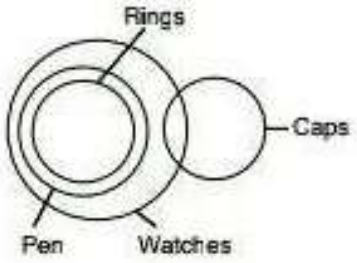


Fig. 1

Fig. 2

1. (A) Conclusion I follows through Fig. 2.
   Conclusion II does not follow through Fig. 1.
2. (E) Conclusion I follows through Fig. 2.
   Conclusion II follows through both the figures.

For Solution Q. 3 and 4 :

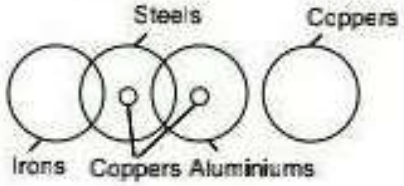


Fig. 2

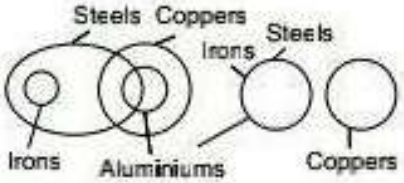


Fig. 2 **Fig. 3**

3. (D) Conclusion I does not follow through Fig. 1.
   Conclusion II does not follow through Fig. 1 and Fig. 2.
4. (B) Conclusion I does not follow through Fig. 3.
   Conclusion II follows through Fig. 1.

5. (C)

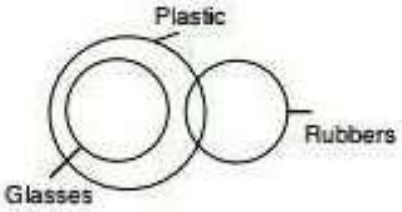


Fig. 1

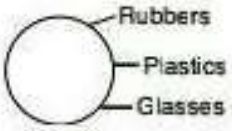
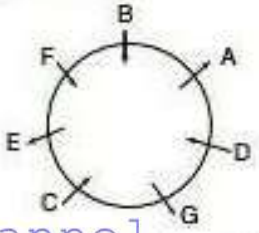


Fig. 2

There is no relation between rubbers and glasses. So either Conclusion I or Conclusion II follows.

For Solution Q. 6 to 10 :



6. (A) 7. (B) 8. (A) 9. (D) 10. (C)

For Solution Q. 11 to 15 :

There are two sitting arrangements

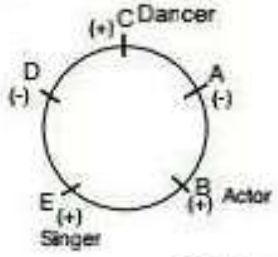
P O M S N R Q L

and

S P O M L N R Q

11. (B) 12. (E) 13. (E) 14. (E) 15. (E)

For Solution Q. 16 to 20 :



{A is married to C
E is married to D}

16. (D) 17. (A) 18. (B) 19. (A) 20. (E)

21. (D) $A > X \leq O = M > K$

Conclusion I does not follow, there is no relation between A and K.

Conclusion II does not follow, M is greater than and equal to X.

22. (A) $M \leq T = P < K \leq N$
Conclusion I follows.
Conclusion II does not follow. K cannot be equal to T.

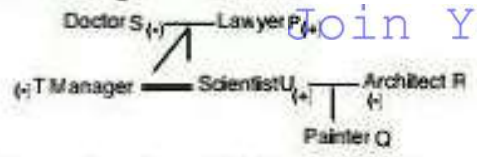
23. (D) Conclusion I does not follow. there is no relation between K and D.
Conclusion II does not follow, there is no relation between F and K.

For Solution Q. 24 to 26 :

la	→	drink
tu	→	alcohol
ku	→	cold
do	→	harmful
fu	→	is
ta	→	water
lu	→	use
ma	→	they
ko	→	people
mo	→	take
mu fa	→	he likes
lo fo	→	hygienic food

24. (D) 25. (E) 26. (A)

For Solution Q. 27 to 30 :



27. (B) 28. (C) 29. (D) 30. (A)

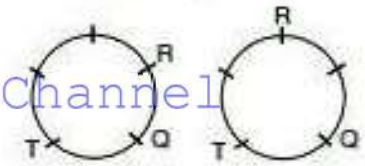
31. (B) Deepak < Ravi, Rohit > Arun
From statement I,
Ravi > Rohit > Arun
Ravi > Deepak
either Deepak or Arun is shortest.
From statement II,
Rohit > Arun > Ravi > Deepak
Deepak is the shortest.

32. (E) From statement I,
Anil visits Agra on Friday or Saturday.
From statement II.
Anil visits Agra on Friday or Sunday.
After adding of statement I and statement II together.
Anil visits Agra on Friday.

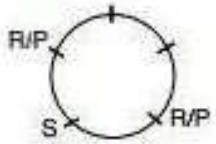
33. (E) From statement I,
A ..... C ..... F
From statement II.
E ..... B, D F
After adding of both statements I and II together.
E A B C D F
A is immediate left of B.

34. (A) From statement I.
The code for 'hand' is 'dik'
From statement II.
There is no common code for 'Covers eyes' so, the code for 'hand' cannot be determined.

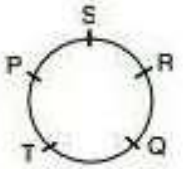
35. (E) From statement I.



From statement II.



After adding of both the statements I and II.



T is seated immediate right of P.

For Solution Q. 36 to 40 :

	I	II	III	IV	V	A/I	B/IV	Answer
36.	X	√	N.A.	√	√	N.A.	—	(B)
37.	√	√	√	√	X	—	—	(B)
38.	√	√	N.A.	X	√	—	—	(B)
39.	√	√	√	X	√	—	√	(E)
40.	X	√	√	√	√	√	—	(D)

For Solution Q. 41 to 45 :

E A F J H D K

41. (A) 42. (B)

43. (E) A F J H E A D K F H

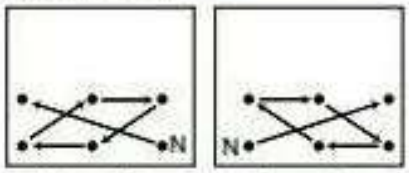
+1 +1 +1 +1 +2

44. (E)

45. (E) A D E F H J K

D—E, D—F, E—F and J—K

46. (A) In each subsequent figure the designs slide as follows and new designs form at the place of 'N' :

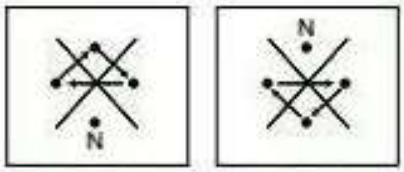


(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

47. (C) In each subsequent figure the leaf with line rotates 45° clock-wise next time after remaining in the same position this time and the half leaf forms new ahead in the same direction.

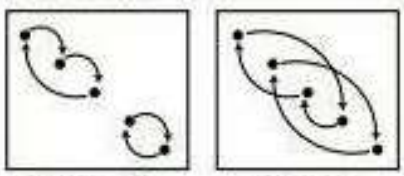
48. (D) In each subsequent figure the designs slide one side anticlock-wise and one new design forms at backside each time.

49. (D) In each subsequent figure the designs slide as follows and new designs form at the place of 'N'—



(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

50. (D) In each subsequent figure the designs slide as follows—



(1) to (2) (2) to (3)
(3) to (4) (4) to (5)
(5) to (6)

Part—II
English Language

Directions—(Q. 1–10) Some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the oval [●] corresponding to the appropriate letter (A), (B), (C). If a sentence is free from error, blacken the oval corresponding to (D) in the Answer Sheet.

1. I have/ known him / since two years. No error
(A) (B) (C) (D)

2. He is / your brother / isn't it ? No error
(A) (B) (C) (D)

3. This time you will have to work / hardly to
(A) (B)
pass / your qualifying examination. No error
(C) (D)

4. My ideas are not / the same as / my father.
(A) (B) (C)
No error
(D)

5. It was / approved answer / to the problem.
(A) (B) (C)
No error
(D)

6. Mumbai is / the richer of / all the Indian cities.
(A) (B) (C)
No error
(D)

7. "The two Towers" are / an excellent movie /
(A) (B)
produced recently. No error
(C) (D)

8. None / has initiated / action against him.
(A) (B) (C)
No error
(D)

9. Justice as well as mercy / allows / it. No error
(A) (B) (C) (D)

10. Ravi/sympathises for / this poor girl. No error
(A) (B) (C) (D)

Directions—(Q. 11–20) Sentences are given with blanks to the filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate oval [●] in the Answer Sheet.

11. Rather than reduce the commuter delays, the new toll road has ..... problems.
(A) aggravated (B) minimized
(C) refined (D) decreased

12. India has shown considerable ..... in the field of railways.
(A) efficient (B) proficiency
(C) effect (D) progress

13. Surya is suffering ..... a viral fever.
(A) from (B) with
(C) by (D) for

14. These talent-contests will enable the students to bring ..... their best.
(A) in (B) out
(C) off (D) up

15. Janet had always been afraid ..... flying.
(A) to (B) from
(C) of (D) for

16. Man is generally a..... animal.
(A) social (B) enterprising
(C) amicable (D) agile

17. Birds ..... from one place to another during winter.
(A) migrate (B) emigrate
(C) immigrate (D) transfer

18. The students jumped ..... the opportunity of going on a study tour.
(A) for (B) with
(C) on (D) at

19. Ravi's marriage was ..... the wishes of his parents.
(A) opposed (B) fighting
(C) against (D) anti

20. The guests ..... to arrive at 6 P.M.
(A) are expecting (B) are expected
(C) will surely (D) will be surely

Directions—(Q. 21–23) Out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

21. Feeble
(A) Small (B) Frail
(C) Trivial (D) Supple

22. Commence
(A) To end (B) To begin
(C) To run (D) To comment

23. Indict
(A) Indicate (B) Declare
(C) Charge (D) Designate

Directions—(Q. 24–26) Choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

24. Affected
(A) Genuine (B) Altered
(C) Confined (D) Feigned

25. Intricate
(A) Elaborate (B) Dainty
(C) Simple (D) Painstaking

26. Fiercely
(A) Gently (B) Coldly
(C) Slowly (D) Quickly

Directions—(Q. 27–29) Four alternatives are given for the Idiom/ Phrase **bold** in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

27. Ramu gave the dog **a wide berth**—
(A) to give it freedom
(B) to keep as far away from it as possible
(C) to teach a lesson to it
(D) to give false hopes to it

28. Invalids are **cared for** in hospitals—
(A) carried about
(B) looked after
(C) carelessly treated
(D) operated upon

29. Slum dwellers live **from hand to mouth**—
(A) living with limited earnings

(B) eating all the time
(C) not having anything to eat
(D) wasting time

Directions—(Q. 30–34) A sentence/part of the sentence is **bold**. Below are given alternatives to the **bold** part at (A), (B) and (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (D).

30. It's a fine day, **no** ?
(A) is it ? (B) isn't it ?
(C) yes ? (D) No improvement

31. The show **already begun** by the time we reached—
(A) was already begun
(B) had already begun
(C) already began
(D) No improvement

32. **The old man made clay pots who lived in a hut with his wife**—
(A) The old man lived with his wife in clay pots in a hut
(B) The old man lived in a hut with his wife who makes clay pots
(C) The old man who made clay pots lived in a hut with his wife
(D) No improvement

33. Copy this document **word by word** and show it to me—
(A) word on word (B) in between words
(C) word for word (D) No improvement

34. Rita **declined** the chance to go to America—
(A) refused (B) turned down
(C) turned off (D) No improvement

Directions—(Q. 35–39) Out of the four alternatives, choose the one which can be substituted for the given words/sentence.

35. A confused, complicated or embarrassing situation—
(A) Imbroglio (B) Inflammable
(C) Infinitesimal (D) Awkward

36. A form of a word, phrase, etc. that is shorter than the full form.
(A) Acronym (B) Abbreviation
(C) Conscription (D) Bibliography

37. A speech delivered without previous preparation is—
(A) Conversation
(B) Extempore
(C) Soliloquy
(D) Lecture

38. A person difficult to please—
(A) Fastidious (B) Unpleasant
(C) Irritable (D) Aggressive

39. Impossible to change—
(A) Impossible (B) Incorrigible
(C) Impregnable (D) Inert

Directions—(Q. 40–45) There are four different words out of which one is correctly spelt. Find the correctly spelt word and indicate it by blackening the appropriate oval [●] in the Answer Sheet.

40. (A) Acqueintence (B) Acquaintance
(C) Acquaintence (D) Acquentance

41. (A) Hypocrisy (B) Hypocracy
(C) Hypocricy (D) Hypocrasy

42. (A) Recommended
(B) Reccommended
(C) Recomended
(D) Recommendid

43. (A) Refrigerator (B) Refridgarator
(C) Refridgerator (D) Refrigarator

44. (A) Fourty (B) Forty
(C) Fortie (D) Fourtie

45. (A) Hankerchief (B) Handkercheif
(C) Hankercheif (D) Handkerchief

Directions—(Q. 46–50) You have a passage with 5 questions. Read the passage carefully and choose the best answer to each question out of the four alternatives and mark it by blackening the appropriate oval [●] in the Answer Sheet.

Passage

The greatest flourishing of northern Indian culture, art and imperial strength undoubtedly took place during the reign of the Mughal monarchs of the 16th and 17th centuries. The Mughals were

Central Asian descendents of the great Mongol warriors Ghengis Khan and Timur (Tamerlane), whose hordes of cavalry swept across the Eurasian steppe in the 13th and 14th centuries, conquering everything between Beijing and Budapest. But by the turn of the 16th century, the great Mongol empire has splintered: the many royal descendents of Ghengis and Timur fought over the territorial scraps and did their best to hold on to their own minor Sultanates.

One of these Sultans, Babur, was not satisfied with his small kingdom of Ferghana (now in modern-day Kyr-gyzstan and eastern Uzbekistan), and he tried and tried again to permanently reconquer Timur's greatest prize, Samarkand. He never succeeded. So instead, Babur turned his attention south to the Sultanate of Delhi in northern India, which had been ruled successively by five dynasties of Muslim warriors from Afghanistan since the late 12th century. As history would show, Babur's campaign against the Delhi Sultanate catalyzed the foundation of one of the greatest dynasties in the history of South Asia : the Mughal Empire.

46. The Mughals can trace their ancestry to—
    (A) Beijing
    (B) Budapest
    (C) Central Asia
    (D) The Eurasian steppes

47. The Mughals attacked the Delhi Sultanate because—
    (A) They were the royal descendants of Ghengis Khan
    (B) They wanted to expand their kingdom
    (C) They could not gain supremacy in the kingdom of Samar-kand
    (D) Both (B) and (C)

48. The Mughal rulers were responsible for—
    (A) Unleashing terror amongst their subjects
    (B) Organizing the Eurasian steppe region
    (C) Patronizing art and culture
    (D) In-fighting amongst themselves

49. The Mongols, in the 13th and 14th centuries—
    (A) Plundered the greater part of Asia and Eastern Europe
    (B) Gave rise to the Mughal dynasty
    (C) Encouraged imperial strength in northern India
    (D) None of the above

50. The word closest in meaning to catalyzed is—
    (A) Unrestricted (B) Exploited
    (C) Disseminated (D) Accelerated

Answers with Explanations

1. (C) 2. (C) 3. (B) 4. (B) 5. (B)
6. (B) 7. (A) 8. (B) 9. (D) 10. (B)
11. (A) 12. (D) 13. (A) 14. (B) 15. (C)
16. (A) 17. (A) 18. (C) 19. (C) 20. (B)
21. (B) 22. (B)
23. (C) Indict means accuse formally by legal process.
24. (A) 25. (C) 26. (A) 27. (B) 28. (B)
29. (A) 30. (B) 31. (B) 32. (C) 33. (D)
34. (B) 35. (A) 36. (A) 37. (B) 38. (B)
39. (B) 40. (B) 41. (A) 42. (A) 43. (A)
44. (B) 45. (A)
46. (C) According to the passage the Mughals were Central Asian descendants of the great Mongol worriors Ghengis Khan and Timur.
47. (D) 48. (B) 49. (B)
50. (D) Catalyzed is a word closest in meaning to be accelerated.

Part—III
Quantative Aptitude

1. What is the value of $\frac{\sqrt{24}+\sqrt{216}}{\sqrt{96}}$?
    (A) 4 (B) $2\sqrt{6}$
    (C) $4\sqrt{6}$ (D) 2

2. Price of milk has increased by 20%. To keep the expenditure unchanged, the present consumption is to be reduced by—

(A) $16\frac{2}{3}\%$ (B) 20%

(C) 18% (D) 10%

3. A man saves ₹ 2000 at the end of each year and invests the money at 5% compound interest. At the end of 3 years he will have—

(A) ₹ 2205 (B) ₹ 4305

(C) ₹ 6305 (D) ₹ 4205

4. The length of the largest possible rod that can be placed in a cubical room is $35\sqrt{3}$m. The surface area of the largest possible sphere that fit within the cubical room in sq m is—

$\left(\text{assuming } \pi = \frac{22}{7}\right)$

(A) 4250 (B) 3500

(C) 3850 (D) 2450

5. There are two pumps to fill a tank with water. First pump can fill the empty tank in 8 hours, while the second in 10 hours. If both the pumps are opened at the same time and kept open for 4 hours, the part of tank that will be filled up is—

(A) $\frac{1}{5}$ (B) $\frac{9}{10}$

(C) $\frac{1}{10}$ (D) $\frac{2}{5}$

6. The ratio of two numbers is 3 : 4 and their H.C.F. is 4, then their L.C.M. is—

(A) 48 (B) 12

(C) 24 (D) 36

7. A sum was lent at simple interest at a certain rate for 2 years. Had it been lent at 3% higher rate, it would have fetched ₹ 300 more. The original sum of money was—

(A) ₹ 4000 (B) ₹ 5000

(C) ₹ 6000 (D) ₹ 7000

8. A trader allows two successive discounts of 30% and 15% for selling an article. If he gets ₹ 476 for the article its marked price is—

(A) 900 (B) 800

(C) 750 (D) 600

9. A cyclist, after cycling a distance of 70 km on the second day, finds that the ratio of distances covered by him on the first two days is 4 : 5. If he travels a distance of 42 km on the third day, then the ratio of distances travelled on the third day and the first day is—

(A) 2 : 3 (B) 4 : 3

(C) 3 : 2 (D) 3 : 4

10. A profit of 10% is made after giving a discount of 5% in a T.V. If the marked price of the TV is ₹ 2640·00, the cost price of the TV was—

(A) ₹ 2396 (B) ₹ 2280

(C) ₹ 2296 (D) ₹ 2380

11. While selling to the retailer, a company allows 30% discount on the marked price of their products. If the retailer sells those products at marked price, his profit will be—

(A) $42\frac{6}{7}\%$ (B) 30%

(C) $42\frac{1}{7}\%$ (D) 40%

12. The average of 10 items was found to be 80 but while calculating, one of the items was counted as 60 instead of 50. Then the correct average would have been—

(A) 79·5 (B) 69

(C) 79·25 (D) 79

13. A man bought a horse and a carriage for ₹ 40.000. He sold the horse at a gain of 10% and the carriage at a loss of 5%. He gained 1% on his whole transaction. The cost price of the horse was—

(A) ₹ 20000 (B) ₹ 15000

(C) ₹ 16000 (D) ₹ 18000

14. If the diameter of a circle is increased by 8%, then its area is increased by—

(A) 16·46% (B) 16·64%

(C) 6·64% (D) 16%

15. A train covers a certain distance in 210 minute at a speed of 60 kmph the time taken by the train, to cover the same distance at a speed of 80 kmph is—

(A) 3 hours (B) $3\frac{5}{8}$ hours

(C) $2\frac{5}{8}$ hours (D) $4\frac{5}{8}$ hours

16. The value of $(\sqrt{4^3 + 15^2})^3$ is—
(A) 3943 (B) 4913
(C) 4313 (D) 4193

17. By selling 4 articles for 1 rupees, a man loses 4%. Had he sold three articles per rupee, the profit would have been—
(A) 12% (B) 30%
(C) 28% (D) 16%

18. If 5·5 of a = 0·65 of b, then $a : b$ is equal to—
(A) 110 : 13 (B) 13 : 11
(C) 11 : 13 (D) 13 : 110

19. An article is sold at a loss of 10%. Had it been sold for ₹ 90 more, there would have been a gain of 5%. The original sale price of the article (in ₹) is—
(A) 650 (B) 540
(C) 600 (D) 628

20. A contractor undertook to finish a work in 92 days and employed 110 men. After 48 days, he found that he had already done $\frac{3}{5}$ part of the work, the number of men he can withdraw so that the work may still be finished in time is—
(A) 30 (B) 45
(C) 40 (D) 35

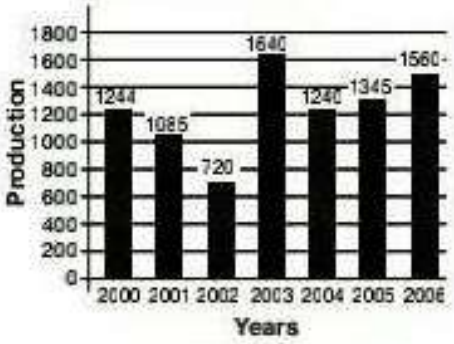
21. From a class of 42 boys, a boy aged 10 years goes away and in his place, a new boy is admitted. If on account of this change, the average age of the boys in that class increases by 2 months, the age of the newcomer is—
(A) 12 years 2 months
(B) 19 years
(C) 17 years
(D) 10 years 6 months

22. What is to be added to 15% of 160 so that the sum may be equal to 25% of 240 ?
(A) 36 (B) 24
(C) 84 (D) 60

23. Two trains starts from station A and B and travel towards each other at speeds of 16 mile/hour and 21 mile/hour respectively. At the time of their meeting, the second train has travelled 60 mile more than the first. The distance between A and B (in mile) is—
(A) 540 (B) 444
(C) 496 (D) 333

Directions—(Q. 24 and 25) The bar diagram below shows the production of potatoes (in quintal) from the year 2000 to 2006. Study the diagram and answer the questions.

Production of Potatoes (in quintal) from 2000 to 2006



24. Considering the average production during this period, the number of years in which the production is above average is—
(A) 4 (B) 1
(C) 2 (D) 3

25. During this period, the highest rate of decline in production is—
(A) 35·32% (B) 24·4%
(C) 28·22% (D) 33·64%

26. If the ratio of two numbers is 2 : 1 and their product is 1800, then the greater number is—
(A) 90 (B) 60
(C) 30 (D) 120

27. In a lake there are 10 steps labelled as A to J. Starting from step A, every minute a frog jumps to the 4th step. Where would the frog be at the 60th minute ?
(A) D (B) H
(C) A (D) B

28. In a family there are several brothers and sisters. Every 2 boys have as many brothers as sisters and each 2 girls has 2 brothers less

than the twice as many as brothers and sisters. Find the number of boys and girls—

(A) Boys–8, Girls–8
(B) Boys–6, Girls–8
(C) Boys–6, Girls–10
(D) Boys–8, Girls–6

29. Rohan ranks 7th from the top and 26th from the bottom in the class. How many students are there in the class ?

(A) 33 (B) 32
(C) 31 (D) 34

30. If 'a' means '÷', 'b' means '×', 'c' means '+', 'd' means '–', then find the value of the express 72 a 9 b 12 a 18 c 25 d 13 b 16 c 32 ?

(A) $-\frac{439}{9}$ (B) $-\frac{438}{5}$
(C) $-\frac{632}{7}$ (D) $-\frac{437}{3}$

31. When I started from home, the oil tank of car was $\frac{4}{5}$ full. After consuming 2 litres of petrol, the petrol tank was $\frac{2}{3}$ full. How many litres of petrol can this oil tank contain when full ?

(A) 12 litre (B) 10 litre
(C) 15 litre (D) 20 litre

32. Which of the following words cannot be made from the letters of the word 'REASONABLE' ?

(A) NOBLE (B) BONES
(C) BRAIN (D) ARSON

33. When a number is divided by another number, the remainder is 23. When twice of this number is divided by the same divisor the remainder is 11. The divisor is—

(A) 34 (B) 35
(C) 20 (D) 36

34. On dividing a number by 13, we get 1 as remainder. If the quotient is divided by 5, we get 3 as a remainder. If this number is divided by 65, what will be the remainder ?

(A) 28 (B) 18
(C) 16 (D) 40

35. Find three rational numbers between 2·5 and 3—

(A) 2·65, 2·701001071 ....., 2·75
(B) 2·8, 0, 2·75
(C) 2·625, 2·75, 2·875
(D) None of the above

36. Value of $\sqrt[4]{(81)^{-2}}$ is—

(A) $\frac{1}{9}$ (B) $\frac{1}{3}$
(C) 9 (D) $\frac{1}{81}$

37. $2\sqrt{3} - \sqrt{3} - 3\sqrt{3} + \sqrt{12}$ is equal to—

(A) $6\sqrt{3}$ (B) $5\sqrt{3}$
(C) 0 (D) 1

38. A man walked diagonally across a rectangular field whose length and width is 4 m and 3 m respectively. What was the per cent saved by not walking along the edges ?

(A) 28·4% (B) 30·5%
(C) 33·4% (D) 27·6%

39. In an examination of bank P.O., 40% students failed in Mathematics and 30% failed in English, while 20% failed in Mathematics and English both. What percentage of the students passed in both ?

(A) 48% (B) 50%
(C) 70% (D) None of these

40. 15 litre of a mixture contains 20% and rest water. If 3 litre of water is added in it, then percentage of alcohol in the new mixture will be—

(A) 25% (B) 20%
(C) 16·67% (D) 33·33%

41. The length of a rectangle is increased by 60%. By what percentage would the width have to be decreased to maintain the same area ?

(A) 75% (B) 60%
(C) $37\frac{1}{2}\%$ (D) $66\frac{2}{3}\%$

42. Due to an increase of 15% in the price of milk, a family reduces its consumption of milk by 15%. What is the effect in the expenditure of the family on account of milk ?
(A) 3% decrease (B) 2·25% decrease
(C) 2·50% decrease (D) 3·5% decrease

43. The number of boys and girls in the college are in the ratio 3 : 2. If 20% of the boys and 25% of the girls are adults, then the percentage of the students who are minor is—
(A) 76% (B) 67·5%
(C) 78% (D) 82·5%

44. Monthly incomes of two persons are in the ratio 5 : 4 and their expenditures are in the ratio 9 : 7. If each saves ₹ 500 per month, then what are their monthly incomes ?
(A) ₹ 4000, ₹ 3200 (B) ₹ 3500, ₹ 2800
(C) ₹ 5000, ₹ 4000 (D) ₹ 4500, ₹ 3600

45. The ratio between two numbers is 5 : 3 and difference between their squares is 144. Find the numbers—
(A) 15, 9 (B) 10, 6
(C) 5, 3 (D) 20, 12

46. A mixture contains milk and water in the ratio of 7 : 2. On adding 6 litres of water, the ratio of milk and water becomes 7 : 5. Then quantity of water in the final mixture will be—
(A) 10 litre (B) 4 litre
(C) 12 litre (D) None of these

47. If $(a+b) : (b+c) : (c+a) = 6 : 7 : 8$ and $a + b + c = 14$, then $c = ?$
(A) 8 (B) 7
(C) 6 (D) 14

48. If the total profit is 26% of selling price, then what per cent of selling price is equal to the 34% of the purchasing price ?
(A) 20·36% (B) 25·16%
(C) 17·16% (D) 24·76%

49. Priya purchased two mixers for ₹ 1500 and made a profit of 9% on one and loss 6% on the other. But overall there is no profit or loss, then the cost price of mixers are in the ratio—
(A) 5 : 3 (B) 2 : 3
(C) 3 : 2 (D) 3 : 5

50. A shopkeeper allows two successive discounts on an article whose marked price is ₹ 150 and selling price is ₹ 105. What is first discount if second discount is 12·5% ?
(A) 20% (B) 17·5%
(C) 16·67% (D) 25%

Answers with Explanations

1. (D) $\frac{\sqrt{24}+\sqrt{216}}{\sqrt{96}} = \frac{2\sqrt{6}+6\sqrt{6}}{4\sqrt{6}}$

$= \frac{8\sqrt{6}}{4\sqrt{6}}$

$= 2$

2. (A) $\therefore$ Reqd. reduction in percentage

$= \left(\frac{100 \times 20}{100 + 20}\right)\%$

$= \left(\frac{200}{12}\right)\%$

$= \frac{50}{3}\%$

$= 16\frac{2}{3}\%$

3. (C) Reqd. money at the end of 3 years

$= ₹\left[2000 + 2000\left(1 + \frac{5}{100}\right) + 2000\left(1 + \frac{5}{100}\right)^2\right]$

$= 2000\left[1 + \left(\frac{21}{20}\right) + \left(\frac{21}{20}\right)^2\right]$

$= ₹\,[2000 + 2100 + 2205]$

$= ₹\,6305$

4. (C) An edge of a cubical room

$= \frac{35\sqrt{3}}{\sqrt{3}} = 35$ m

Radius of the sphere

$= \frac{35}{2} = 17{\cdot}5$ m

$\therefore$ Reqd. surface area of the largest possible sphere.

$$= 4 \times \frac{22}{7} \times 17{\cdot}5 \times 17{\cdot}5 \text{ sq m}$$

$$= 3850 \text{ sq m}$$

5. (B) $\because$ Part of the tank filled by both the pipes in 1 hour

$$= \frac{1}{8} + \frac{1}{10}$$

$$= \frac{18}{80} \text{ part}$$

$\therefore$ Part of the tank filled in 4 hours

$$= \frac{18}{80} \times 4$$

$$= \frac{9}{10} \text{ part}$$

6. (A) Let the two numbers are $3x$ and $4x$, then their H.C.F. $= x$

$$\therefore \quad x = 4$$

Numbers are 12 and 16

$$\therefore \text{ Their L.C.M.} = \frac{12 \times 16}{4}$$

$$= 12 \times 4$$

$$= 48$$

7. (B) Let the principal sum be ₹ x and rate of annual simple interest be r%. Then—

$$\text{Simple Interest} = a$$

$$= \frac{x \times r \times 2}{100}$$

or $\quad 100\,a = 2xr \quad \ldots(1)$

and $\quad a + 300 = \frac{x \times (r+3) \times 2}{100}$

or $\quad 100\,(a + 300) = 2x\,(r + 3) \quad \ldots(2)$

$\Rightarrow \quad 100a + 30000 = 2xr + 6x$

$\Rightarrow \quad 2xr + 30000 = 2xr + 6x$ [from eq. (1)]

$\Rightarrow \quad 6x = 30000$

$$x = ₹ 5000$$

8. (B) Let the marked price be ₹ x. then single equivalent discount for two successive discounts

$$= (+30 + 15 - 4{\cdot}5)\%$$

$$= 40{\cdot}5\%$$

$\therefore \quad x \times \frac{(100 - 40{\cdot}5)}{100} = 476$

$\Rightarrow \quad 59{\cdot}5\,x = 47600$

$\therefore \quad x = ₹ 800$

9. (B) Let the distances covered by him in 2 days are $4x$ km and $5x$ km respectively.

$$5x = 70$$

$$\therefore \quad x = 14$$

$$\therefore \quad \text{Reqd. ratio} = 14 \times 4 : 42$$

$$= 4 : 3$$

10. (B) Let the cost price of the T.V. set be ₹ x then,

$\because \quad x \times \frac{110}{100} = 2640 \times \frac{95}{100}$

$\Rightarrow \quad 110\,x = 2640 \times 95$

$\therefore \quad x = \frac{264 \times 95}{11}$

$$= ₹ 2280$$

11. (A) $\therefore$ Reqd. gain percentage

$$= \frac{30}{70} \times 100\%$$

$$= 42\frac{6}{7}\%$$

12. (D) Reqd. correct average

$$= \frac{10 \times 80 - 60 + 50}{10}$$

$$= \frac{800 - 10}{10}$$

$$= 79$$

13. (C) Let the C. P. of horse ₹ x

and the cost price of the carriage ₹ y

Then, $x + y = 40000 \quad \ldots(i)$

and $\quad \frac{x \times 110}{100} + \frac{y \times 95}{100}$

$$= 40000 \times \frac{101}{100} \quad \ldots(ii)$$

Substitute the value of y from eq. (i) in eq. (ii) and on solving them—

$110x + (40000 - x)\,95$

$$= 40000 \times 101$$

$\Rightarrow \quad 15x = 6 \times 40000$

$$\therefore \quad x = ₹ 16000$$

14. (B) Reqd. increased percentage

$$= \frac{8\,(8+200)}{100}\,\%$$

$$= \frac{64+1600}{100}\,\%$$

$$= \frac{1664}{100}\,\%$$

$$= 16{\cdot}64\%$$

15. (C) Certain distance

$$= \frac{60\times 1000}{60}\times 210$$

$$= 210000 \text{ m}$$

$\therefore$ Required time

$$= \frac{210000}{80\times 1000}\text{hours}$$

$$= 2\frac{5}{8}\text{ hours}$$

16. (B) $(\sqrt{4^3+15^2})^3 = (\sqrt{64+225})^3$

$$= (\sqrt{289})^3$$

$$= (17)^3$$

$$= 4913$$

17. (C) Let the C. P. of one article be ₹ x. Then—

$\because$ $x\times\frac{96}{100} = \frac{1}{4}$

$\Rightarrow$ $x = ₹\frac{25}{96}$

$\therefore$ Reqd. profit percentage

$$= \left(\frac{1}{3}-\frac{25}{96}\right)\times\frac{96}{25}\times 100\%$$

$$= \frac{(96-75)}{3\times 96}\times\frac{96}{25}\times 100\%$$

$$= (7\times 4)\%$$

$$= 28\%$$

18. (D) $\because$ $a\times 5{\cdot}5 = b\times 0{\cdot}65$

$\Rightarrow$ $\frac{a}{b} = \frac{0{\cdot}65}{5{\cdot}50} = \frac{65}{550}$

$\therefore$ $a:b = \frac{13}{110}$

$= 13:110$

19. (C) Let the original sale price of the article be ₹ x, then,

$\because$ $x\times\frac{90}{100}+90 = x\times\frac{105}{100}$

$\Rightarrow$ $9x+900 = 10{\cdot}5x$

$\Rightarrow$ $1{\cdot}5x = 900$

$\therefore$ $x = ₹\,600$

20. (A) As per question, let the number of men be x, who can finish the remaining work

$$= \left(1-\frac{3}{5}\right)\text{ in 44 days.}$$

Then,

$\because$ $\frac{x\times 44}{2/5} = \frac{110\times 48}{3/5}$

$\Rightarrow$ $22x = 110\times 16$

$\therefore$ $x = 80$ men

$\therefore$ Reqd. number of men withdrawn by the contractor

$= 30$ men

21. (C) Let the original average age

$= x$ months and age of the newcomer

$= y$ months.

Then, as per question—

$\frac{42\times x-10\times 12+y}{42} = x+2$

$\Rightarrow$ $42x-120+y = 42x+84$

$\Rightarrow$ $y = 120+84$

$= 204$ months

$= 17$ years

22. (A) $\because$ $160\times\frac{15}{100}+x = 240\times\frac{25}{100}$

$\Rightarrow$ $24+x = 60$

$\therefore$ Reqd. number $(x) = 36$.

23. (B) Let both the trains meet after t hours. Then as per question—

$16\times t+60 = 21\times t$

$\Rightarrow$ $5t = 60$

$\therefore$ $t = 12$ hours.

The distance between A and B (in mile)

$= 16\times 12+21\times 12$

$= 192+252$

$= 444$ mile

24. (D) Average production during this period

$$= \frac{1244 + 1085 + 720 + 1640 + 1240 + 1345 + 1560}{7}$$

$$= \frac{8834}{7}$$

$$= 1262 \text{ quintal}$$

$\therefore$ Required the number of years

$$= (2003, 2005, 2006)$$

$$= 3 \text{ years}$$

25. (D) Reqd. highest rate of decline in production

$$= \frac{(1085 - 720) \times 100}{1085}\%$$

$$= \frac{365}{1085} \times 100\%$$

$$= 33{\cdot}64\%$$

26. (B) Let the greater number $= 2x$

and the smaller number $= x$

$\therefore \quad 2x \times x = 1800$

$\Rightarrow \quad x^2 = 900$

$\therefore \quad x = 30$

Hence, the greater number

$$= 2 \times 30 = 60$$

27. (C) At 5th min. the frog will be at level 'A'. Hence, in 12 rounds he will be again at 'A' level.

28. (D)

29. (B) Required number of present students in the class

$$= (7 + 26) - 1 = 32$$

30. (D) $72\,a\,9\,b\,12\,a\,18\,c\,25\,d\,13\,b\,16\,c\,32$

$$= 72 + 9 \times 12 + 18 + 25 - 13 \times 16 + 32$$

$$= 8 \times \frac{12}{18} + 25 - 208 + 32$$

$$= \frac{16}{3} + 25 - 208 + 32$$

$$= \frac{16}{3} - 151 = -\frac{437}{3}$$

31. (C) Let the oil tank contain x litre petrol when full. Hence, as per question

$$\frac{4x}{5} - \frac{2x}{3} = \frac{2x}{15} = 2$$

$$\therefore \quad x = \frac{2 \times 15}{2} = 15 \text{ litre}$$

32. (C) Letter 'I' is not present in the given word.

33. (B) Let the number is 'n', quotient k and divisor b

$$n = bk + 23$$

and $\quad 2n = 2bk + 46$

If $\quad b = 35$, then

$$2n = 35(2k + 1) + 11$$

Hence, the divisor will be 35.

34. (D) Let the number is n and the quotient is b, then

$$n = 13b + 1$$

and $\quad b = 5k + 3$

Here quotient is k.

$\therefore \quad n = 13(5b + 3) + 1$

$$= 65b + 39 + 1$$

$$= 65b + 40$$

Hence remainder = 40.

35. (C)

36. (A) $\sqrt[4]{(81)^{-2}} = \sqrt[4]{\frac{1}{(81)^2}}$

$$= \frac{1}{(81)^{2/4}}$$

$$= \frac{1}{(81)^{1/2}} = \frac{1}{9}$$

37. (C) $2\sqrt{3} - \sqrt{3} - 3\sqrt{3} + 2\sqrt{3}$

$$= 4\sqrt{3} - 4\sqrt{3} = 0$$

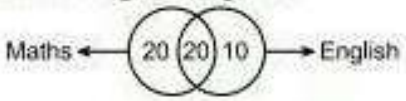
38. (A) Required saving per cent

$$= \frac{(7 - 5)}{7} \times 100\%$$

$$= \frac{200}{7}$$

$$= 28{\cdot}5\% = 28{\cdot}4\%$$

39. (B) By venn diagram, failed students in Maths and English subjects.



Hence, passed students in both the subjects

$$= (100 - 50)\% = 50\%$$

40. (C) Amount of alcohol in 15 litre

$$= \frac{15 \times 20}{100} = 3 \text{ litre}$$

Amount of water

$= (15 - 3)$ litre

$= 12$ litre

$\therefore$ Required percentage of alcohol in the new mixture

$$= \frac{3}{(15+3)} \times 100\%$$

$$= \frac{3}{18} \times 100\%$$

$$= 16{\cdot}67\%$$

41. (C) Let the length of rectangle is x, then new length

$$= \frac{160x}{100}$$

Let the breadth of rectangle is y and decreased by $a\%$. Then as per question

$$\frac{160x}{100} \times \frac{y(100-a)}{100} = xy$$

$$\Rightarrow \quad 100 - a = \frac{10000}{160}$$

$$\Rightarrow \quad 100 - a = 62{\cdot}5$$

$$\therefore \quad a = 37{\cdot}5\%$$

42. (B) Let the original price of milk

$= ₹\, x$

and the amount of milk = y litre

$\therefore$ Required effect in the expenditure of the family on account of milk

$$= \frac{(xy - 0{\cdot}85y \times 1{\cdot}15x)}{xy} \times 100$$

$$= 2{\cdot}25\%$$

43. (C) Let the number of boys is $3x$ and the number of girls is $2x$ then the number of adult students

$$= \frac{3x \times 20}{100} + \frac{2x \times 25}{100}$$

$$= \frac{3}{5}x + \frac{x}{2}$$

$$= \frac{11}{10}x = 1{\cdot}1x$$

Number of minor students

$$= (5x - 1{\cdot}1x) = 3{\cdot}9x$$

Required percentage

$$= \frac{3{\cdot}9x}{5x} \times 100\%$$

$$= 78\%$$

44. (C) Let the monthly income of two persons are ₹ $5x$ and ₹ $4x$ respectively and their expenditures are ₹ $9y$ and ₹ $7y$. Then

$$5x - 9y = 500$$

$$4x - 7y = 500$$

On solving,

$$x = 1000$$

$\therefore$ Required monthly incomes

$= ₹\, 5000$ and $₹\, 4000$

45. (A) Let, if $7x$ litre milk and $2x$ litre water in the mixtures, then

$$25x^2 - 9x^2 = 144$$

$$\Rightarrow \quad 16x^2 = 144$$

$$\Rightarrow \quad x^2 = 9$$

$$\therefore \quad x = 3$$

$\therefore$ Required numbers

$= 5 \times 3$ and 3×3

$= 15$ and 9

46. (A) Let, if $7x$ litre milk and $2x$ litre water in the mixture. then as per question,

$$7x + (2x + 6) = 7y + 5y$$

and $\quad 2x + 6 = 5y$

On solving, $\quad y = 2$ and $x = 2$

$\therefore$ Required quantity of water in the final mixture

$= (2 \times 2 + 6)$ litre

$= 10$ litre

47. (C) Let $(a + b)$, $(b + c)$ and $(c + a)$ are $6x$, $7x$ and $8x$ respectively, then

$$a + b + c = \frac{21x}{2}$$

$$\Rightarrow \quad x = \frac{4}{3}$$

$$\therefore \quad c = 14 - 6 \times \frac{4}{3}$$

$$= 14 - 8 = 6$$

48. (B) Let selling price is ₹100 then profit = ₹ 26.

$\therefore$ Cost price $= ₹\,(100 - 26)$

$= ₹\, 74$

34% of cost price

$$= ₹\, \frac{34}{100} \times 74 = ₹\, 25{\cdot}16$$

Which 25·16% of the selling price.

49. (B) Cost price of two mixers ₹ 1500, let one's cost pric = ₹ x

$$\text{Profit} = ₹ x \times \frac{9}{100}$$

$$\text{Loss} = ₹ (1500 - x) \times \frac{6}{100}$$

$$\therefore x \times \frac{9}{100} = (1500 - x) \times \frac{6}{100}$$

$$\Rightarrow 15x = 9000$$

$$\therefore x = 600$$

and the cost price of second only

= ₹ 900

∴ Required ratio

$$= \frac{600}{900} = \frac{2}{3} = 2 : 3$$

50. (A) Let the first successive discount is x% then as per question,

$$150 \times \frac{(100 - x)}{100} \times \frac{(100 - 12{\cdot}5)}{100} = 105$$

$$\Rightarrow (15000 - 150x)\ 87{\cdot}5 = 1050000$$

$$\Rightarrow 1312500 - 13125x = 1050000$$

$$\therefore x = \frac{262500}{13125}$$

$$= 20\%$$

Part—IV
General Awareness

1. Which of the following is a organic rock ?
   (A) Slate (B) Marble
   (C) Granite (D) Coal
2. What is the largest satellite of the planet saturn ?
   (A) Titan (B) Enceladus
   (C) Rhea (D) Lapteus
3. Which soil is found in Indo-Gangetic planes ?
   (A) Loam (B) Alluvial
   (C) Black (D) Dry
4. Which is the largest river of Indian sub continent ?
   (A) Ganges (B) Indus
   (C) Godavari (D) Kaveri
5. 'Leech' belongs to which group ?
   (A) Insect (B) Mammals
   (C) Parasite (D) None of these
6. Which is the most abundent gas in air ?
   (A) Nitrogen (B) Oxygen
   (C) Hydrogen (D) Ozone
7. Which is the most abundent element in atmosphere ?
   (A) Oxygen (B) Nitrogen
   (C) Neon (D) Ozone
8. Whose name is written on ten rupees note ?
   (A) Governor of RBI
   (B) Finance Secretary of India
   (C) Finance Minister of India
   (D) None of these
9. If speed of rotation of earth increase, then mass of earth would—
   (A) Decrease
   (B) Increase
   (C) No effect
   (D) May increase or decrease depends upon the speed of rotation
10. Rubber cultivation is done in which areas ?
    (A) Pampas
    (B) Savannah
    (C) Temporary Decidious Forest
    (D) None of these
11. Acid and base combine to form—
    (A) Salt and Water (B) Base and Water
    (C) Acid and Water (D) None of these
12. Radio waves reflects back from which layer ?
    (A) Troposphere (B) Stratosphere
    (C) Mesosphere (D) Ozone Layer
13. If lime is added to the soil, then—
    (A) Acidity of soil increases
    (B) Acidity of soil decreases
    (C) Salinity of soil increases
    (D) None of these
14. If a ship comes to sea water from river water, then its bottom will—

(A) Rises due to buoyancy
(B) Rise in water due to more mass of water
(C) Same in both sea of river water
(D) None of these

15. Liver digests—
(A) Proteins (B) Fats
(C) Amino Acids (D) Water

16. Which of the following does not exerete waste from the body ?
(A) Skin (B) Liver
(C) Large intestine (D) Kidney

17. Rickets is due to the deficiency of which ?
(A) Vitamin A (B) Vitamin C
(C) Vitamin D (D) Vitamin B_{12}

18. Monetary policy in India is formulated by—
(A) Finance Ministry
(B) RBI
(C) SEBI
(D) CLB

19. Which one of the following pairs of goods is an example for Joint Supply ?
(A) Coffee and Tea
(B) Ink and Pen
(C) Tooth Brush and Paste
(D) Wool and Mutton

20. Which countries are separated by the 49th parallel ?
(A) USA and Canada
(B) USA and Mexico
(C) France and Germany
(D) Russia and China

21. 'Tidal forest' is otherwise called as—
(A) Evergreen Forest
(B) Monsoon Forest
(C) Mangrove Forest
(D) Coniferous Forest

22. The rapid sliding of large masses of bed rocks is called—
(A) Mass wasting (B) Landslide
(C) Earthquake (D) Weathering

23. A solid needle placed horizontally on the surface of the water floats due to—
(A) Viscosity of Water
(B) Capillary Action
(C) Water Pressure
(D) Surface tension of water

24. Which one of the following is an indicator of air pollution ?
(A) Lichens (B) Cycas
(C) Algae (D) Bryophytes

25. Which one of the following acids is commonly found in nature ?
(A) Lactic acids (B) Sulphuric acids
(C) Nitric acids (D) Acetic acids

26. According to 2011 census, which is the second most populous state in India ?
(A) West Bengal
(B) Maharashtra
(C) Andhra Pradesh
(D) Bihar

27. The capillary action phenomenon of water climbing up a narrow tube dipped in water is due to—
(A) Surface tension
(B) Atmospheric pressure
(C) Differential temperature
(D) Surface friction

28. The smallest functional unit of kidney is—
(A) Nephron (B) Air Sac
(C) Ovaries (D) Neuron

29. Kwashiorkar is caused due to deficiency of which nutrient ?
(A) Protein (B) Vitamin D
(C) Iron (D) Fat

30. Vasco-de-gama was a native of—
(A) Britain (B) Portugal
(C) Australia (D) America

31. Who is the Governor of Maharashtra at present ?
(A) S. M. Krishna
(B) S. C. Jamir

(C) Kateekal Shankarnarayanan
(D) None of the above

32. The third battle of Panipat was fought between—
(A) Marathas and Ahmad Shah Abdali
(B) Humaun and Hemu
(C) Akbar and Shershah
(D) None of these

33. Who is the leader of the House in fifteenth Lok-Sabha ?
(A) Sonia Gandhi
(B) Sushil Kumar Shinde
(C) Meira Kumar
(D) None of these

34. Layer of the atmosphere which is closest to the Earth—
(A) Troposphere (B) Stratosphere
(C) Ionosphere (D) Mesosphere

35. The maximum strength of Lok Sabha as envisaged by the constitution is—
(A) 552 (B) 555
(C) 550 (D) 530

36. Deepika Kumari is a name associated with which game—
(A) Archery (B) Boxing
(C) Weightlifting (D) Wrestling

37. Acid Rain destroys vegetation because it contains—
(A) Sulphuric acid
(B) Nitric acid
(C) Carbon monoxide
(D) Ozone

38. Consider the London Olympics held recently. Identify the wrong match—
(A) Vijay Kumar —Silver in Shooting
(B) Saina Nehwal —Bronze in Badminton
(C) Gangan Narang —Bronze in Shooting
(D) Yogeshwar Dutt —Silver in Wrestling

39. Which country has launched Solar–B satellite to study the sun ?
(A) China (B) Japan
(C) Germany (D) India

40. Santhali language is chiefly spoken by more than six million people in India. Apart from the states of Bihar and Jharkhand, it is also spoken in the state of—
(A) Uttar Pradesh and Rajasthan
(B) Haryana and Jammu-Kashmir
(C) Himachal Pradesh and Jammu-Kashmir
(D) Assam, Orrisa, West Bengal and Tripura

41. The Higgs-boson particle which was recently discovered by scientists, is also known as—
(A) God Particle
(B) Atomic particle
(C) High mass particle
(D) Quantum Particle

42. Recently, over 140 countries have agreed on the first international treaty called Minamata Convention. It aims to reduce the emission and release of which element into air, water and land ?
(A) Sulphur (B) Mercury
(C) Cadmium (D) Lead

43. What is 'Support Price' for an agricultural commodity ?
(A) The floor price below which it cannot be sold
(B) The minimum price at which the government is prepared to buy it
(C) Money paid to agriculturists in the case of draught
(D) Subsidy paid by the government over the prices already available in the market

44. Which one of the following items comes under the Concurrent List of the Indian Constitution ?
(A) Trade Unions
(B) Citizenship
(C) Local Government
(D) Inter-State rivers

45. The authority to alter the boundaries of states in India rests with—

(A) President (B) Prime Minister
(C) Parliament (D) State Government

46. The President can nominate two members of the Lok Sabha to give representation to—
(A) Indian Christians
(B) Parsis
(C) Buddhists
(D) The Anglo-Indians

47. Electoral disputes arising out of Presidential and Vice-Presidential elections are settled by—
(A) Joint Committee of Parliament
(B) Election Commission of India
(C) Supreme Court of India
(D) Central Election Tribunal

48. ..... is not a Central Government tax.
(A) Custom Duty (B) Land Revenue
(C) Service Tax (D) Income Tax

49. Pranab Kumar Mukherjee, was declared elected as ..... President of India on 22nd July, 2012.
(A) 11th (B) 12th
(C) 13th (D) 10th

50. Who among the following players won Australian Open men's Single Title, 2013 ?
(A) Novak Djokovic (B) Gisela Dulko
(C) Daniel Nestor (D) Bob Bryan

Answers with Explanations

1. (D)

2. (A) Titan is Saturn's largest moon and the second largest in the solar system.

3. (B)

4. (B) If largest means longest than Indus with 3200 km as against Ganges with 2510 km.

5. (C)

6. (A) Gaseous composition of atmosphere is as below—

Nitrogen	—	78·08%
Oxygen	—	20·95%
Others	—	·97%

7. (B) 8. (A) 9. (C) 10. (D)

11. (A) Arrhenius bases form salt and water with acids such as—

$$HCl + NaOH = NaCl + H_2O$$

but Lewis basis may form only salt as—

$$NH_3 + HCl = NH_4Cl$$

12. (C) Radio waves are reflected off the ionosphere a part of Mesosphere and exosphere. It is at about 85 km to 600 km attitude.

13. (B) If lime (Hydrated lime, $Ca(OH)_2$ and Quick lime, CaO) is added/used in acid soils, it improved the acid soil condition say-reduces the acidity of soil pH. If affects on physical/chemical/biological effect on acid soils inspect of increasing aerobic bacterial acidity in soil. The reaction of hydrated lime in acid soils on acid stone to improve it, can be expressed as :

$$CaO + MgO + 2H_2O \rightarrow Ca(OH)_2 + Mg(OH)_2$$

14. (A) Since the density of sea water is greater than the density of fresh water, object in sea water floats higher than they do in fresh water. Buoyancy is why Ships float.

15. (B) 16. (B) 17. (C) 18. (B) 19. (D)

20. (A) 49th parallel is the boundary between USA and Canada.

21. (C) 22. (B) 23. (D) 24. (A) 25. (C)

26. (B) 27. (A) 28. (A) 29. (A) 30. (B)

31. (C) 32. (A) 33. (B) 34. (A) 35. (A)

36. (A) 37. (A)

38. (D) Sushil Kumar won silver medal in wrestling.

39. (B) 40. (D) 41. (A) 42. (B) 43. (B)

44. (A) 45. (C) 46. (D) 47. (B) 48. (B)

49. (C) 50. (A)