

1. A man on tour travels first 160 km at 90 Kmph and the next 160 km at 54 Kmph. The average speed for the first 320 km of the tour is
A) 67.5 Kmph B) 36 Kmph C) 71.11 Kmph D) 71 Kmph
2. A man covers half of his journey by train at 60 km/hr, half of the remaining by bus at 30 kmph and the rest by cycle at 10 kmph. Find his average speed during the entire journey?
A) 32 kmph B) 20 kmph C) 18 kmph D) 24 kmph
3. A man walking at the rate of 5 kmph crosses a bridge in 15 minutes. The length of the bridge (in meters) is
A) 600 B) 750 C) 1000 D) 1250
4. The distance of the college and home of Rajeev is 80km. One day he was late by 1 hour than the normal time to leave for the college, so he increased his speed by 4kmph and thus he reached to college at the normal time. What is the changed (or increased) speed of Rajeev?
A) 28 kmph B) 30 kmph C) 40 kmph D) 20 kmph
5. The distance between two cities A and B is 330 Km. A train starts from A at 8 A.M. and travel towards B at 60 kmph. Another train starts from B at 9 A.M and travels towards A at 75 Kmph. At what time do they meet?
A) 10 A.M B) 10.30 A.M C) 11 A.M D) 11.30 A.M
6. A man reaches his office 20 min late, if he walks from his home at 3 kmph and reaches 30 min early if he walks 4 kmph. How far is his office from his house?
A) 20 km B) 16 km C) 14 km D) 10 km
7. A train overtakes two girls who are walking in the opposite direction in which the train is going at the rate of 3 kmph and 6kmph and passes them completely in 36 sec and 30 sec respectively. The length of the train is:
A) 120m B) 150m C) 125m D) None of these
8. Two boys starting from the same place walk at a rate of 5kmph and 5.5kmph respectively. What time will they take to be 8.5km apart, if they walk in the same direction?
A) 15 hours B) 16 hours C) 17 hours D) 18 hours
9. A man traveled from the village to the post-office at the rate of 25 kmph and walked back at the rate of 4 kmph. If the whole journey took 5 hours 48 min, find the distance of the post-office from the village?
A) 40 km B) 30 km C) 20 km D) 10 km
10. A train 575 m long crosses a tunnel of length 325 m in 90 sec. What is the speed of the train in kmph.
A) 28 B) 32 C) 36 D) 24
11. Two trains are running in opposite directions in the same speed. The length of each train is 120 meter. If they cross each other in 12 seconds, the speed of each train (in kmph) is
A) 42 B) 36 C) 28 D) 20
12. A train of length 110 meter is running at a speed of 60 kmph. In what time, it will pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?
A) 10 Sec B) 8 Sec C) 6 Sec D) 4.5 Sec
13. Two stations P and Q are 110 km apart on a straight track. One train starts from P at 7 A.M. and travels towards Q at 20 kmph. Another train starts from Q at 8 A.M. and travels towards P at a speed of 25 kmph. At what time will they meet?
A) 10.30 A.M B) 10.00 A.M C) 8.45 A.M D) 9.30 A.M
14. A train moves pass a telegraph post and a bridge 264 m long in 8 seconds and 20 seconds respectively. What is the speed of the train?
A) 69.5 kmph B) 70 kmph C) 79 kmph D) 79.2 kmph
15. A goods train runs at the speed of 72 kmph and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?
A) 230 m B) 240 m C) 260 m D) 270 m

16. A train 125 m long passes a man, running at 5 kmph in the same direction in which the train is going, in 10 seconds. The speed of the train is?
- A) 45 kmph B) 25 kmph C) 30 kmph D) 50 kmph
- 17) A jogger is running at 9 kmph alongside a railway track is 240 meters ahead of the engine of a 120 meters long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?
- A) 48 sec B) 36 sec C) 18 sec D) 72 sec
- 18) Two trains are moving in opposite directions at 60 kmph and 90 kmph. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is?
- A) 42 sec B) 44 sec C) 46 sec D) 48 sec
19. A person riding a bike crosses a bridge with a speed of 54 kmph. What is the length of the bridge, if he takes 4 min to cross the bridge?
- A) 3600 m B) 2800 m C) 3500 m D) 4500 m
20. A boat sails 15 km of a river towards upstream in 5 hours. How long will it take to cover the same distance downstream, if the speed of current is one-fourth the speed of the boat in still water?
- A) 1.8h B) 3h C) 4h D) 5h
21. A steamer moves with a speed of 4.5 km/h in still water to a certain upstream point and comes back to the starting point in a river which flows at 1.5 km/h. The average speed of steamer for the total journey is
- A) 12 km/h B) 10 km/h C) 6 km/h D) 4 km/h
22. A boy can swim in still water at 4.5 km/h, but takes twice as long to swim upstream than downstream. The speed of the stream is?
- A) 1.8 kmph B) 2 kmph C) 2.2 kmph D) 1.5 kmph
23. A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat in still water and speed of the current respectively?
- A) 7:4 B) 11:4 C) 4:7 D) 8:3
24. A man can row upstream at 16 km/hr and downstream at 24 km/hr. Find the ratio speed of the current to that speed of man in still water.
- A) 1 : 5 B) 1 : 4 C) 1 : 3 D) 1 : 2
25. If sum of upstream and downstream speed of a boat is 82 kmph, and the boat travels 105 km. upstream in 3 hr, Find the time taken by boat to cover 126.9 km downstream.
- A) 2.8 hrs B) 2.7 hrs C) 2.6 hrs D) 2.5 hrs
26. A train Express A leaves Delhi at 5 A.M and reaches Mumbai at 9 A.M. Another train Express B leaves Mumbai at 7 A.M and reaches Delhi at 10.30 A.M. At what time do they cross each other after 7 A.M ?
- A. 50m B. 52m C. 54m D. 56m E. None
- 27) Two trains of equal length, running with the speeds of 40 kmph and 60 kmph, take 40 seconds to cross each other while they are running in the same direction. What time will they take to cross each other if they are running in opposite directions?
- A. 8 sec. B. 10 sec. C. 12 sec. D. 9 sec. E. 6 sec.
- 28) The respective ratio between the speed of the boat upstream and speed of the boat downstream is 4: 9. What is the speed of the boat in still water if it covers 84 km downstream in 2 hours 20 minutes? (in km/h)
- A. 24 B. 26 C. 22 D. 28 E. 30
- 29) A train 350m long takes 35s to cross a man running at a speed of 5 kmph in the direction same to that of train. What is the speed of the train?
- A. 40kmph B. 41kmph C. 42kmph D. 43kmph E. None
- 30) A train 200 m long running at 36 kmph takes 55 seconds to cross a bridge. The length of the bridge is
- A. 375 m. B. 300 m. C. 350 m. D. 325 m. E. None

Subject	Module	Topic	Handout
QUANTS	Arithmetic	Time & Distance	1

- a) 600 b) 500 c) 400 d) 800
 17. In a kilometer race, Ram beats Shyam by 200 m and Shyam beats Tarun by 200 m. Find the distance (in m) by which Ram beats Tarun in the same race.
 a) 400 b) 360 c) 390 d) 410
- a) 270 b) 300 c) 240 d) 330
 18. In a 900 m race, A beats B by 1 minute and B beats C by 30 seconds. A beats C by 225 m. Find the time (in seconds) taken by A to run the race.
- a) 270 b) 330 c) 300 d) 360
 19. Anil is 20% faster than Sunil. In the race, Anil gave Sunil a head start of 50 m. If both finished simultaneously, then find the length of the track (in m).
- a) 270 b) 330 c) 300 d) 360
 20. In a 100m race, Ramesh gave Suresh a head start of 10m and he beat Suresh by 10m or 2 seconds. Find Ramesh's speed (in m/sec).
 a) $\frac{15}{2}$ b) 6 c) $\frac{25}{4}$ d) none of these
- a) 120 b) 150 c) 90 d) 100
 21. Ganesh and Harish started running simultaneously from a point on a circular track, 600m long, in opposite directions. The speed of Ganesh and Harish was 3m/sec and 2m/sec respectively. Find the time taken by them to meet for the first time (in seconds).
- a) 630 b) 945 c) 1260 d) 1575
 22. Pavan, Sathish and Ravi started running simultaneously from a point on a circular track 1260m long. Pavan ran in a direction opposite to that run by the other two. The speed of Pavan, Sathish and Ravi was 3 m/sec, 4 m/sec and 6 m/sec respectively. Find the time taken by all the three to meet for the first time (in seconds).
 a) 20 b) 25 c) 40 d) 60
- a) 25 b) 30 c) 5 d) 45
 24. One day a Cheetah sighted a doe, 'Harini' at a distance of 70 m. It started chasing at a speed of 20 m/s. After two seconds Harini saw Cheetah which was nearing it and started running instantaneously with a speed of 19 m/s. If both are strong enough to run for an hour continuously, after how much time from the time Harini spotted Cheetah, (in sec) will Cheetah catch Harini?
- a) $\frac{1}{2}$ b) $\frac{3}{4}$ c) $\frac{1}{3}$ d) $\frac{3}{4}$
 25. Without stoppages, a train can cover 60 km in an hour whereas with stoppages it can cover 40 km in an hour. Find its stoppage time per hour in a journey it covers with stoppages (in hours).
 a) 2.5 b) 2 c) 1.6 d) none of these
- a) 5.4 b) 7.2 c) 6 d) 6.6
 27. The speed of a boat in still water is thrice the speed of the stream. If took 5 hours to cover a 40 km upstream journey. How many hours would it take to cover a 32 km downstream journey?
 a) 2.5 b) 2 c) 1.6 d) none of these
- a) 14 b) 12 c) 11 d) 13
 28. A boat takes $2\frac{1}{2}$ hours more to cover a 24 km upstream journey in a river than the time it takes to cover the same distance downstream in that river. If the speed of the river was 5 kmph, then find the speed of the boat in still water (in kmph).
 a) 4.2 b) 4.5 c) 4.8 d) 5.1
- a) 3.6 b) 5 c) 4.5 d) 4
 30. The time taken by a boat to cover a 20 km upstream journey in a river is equal to twice that taken by it to cover a 30 km downstream journey in it. The speed of the river is less than twice the speed of the boat in still water by 12 kmph. Find the speed of the river (in kmph).

Name	Regd No	Date

Subject	Module	Topic	Handout
QUANTS	Arithmetic	Time & Distance	1

Directions for questions 1 to 30: Select the correct alternative from the given choices.

1. Convert the following into kmph.
 i) 25 m/sec a) 72 b) 80 c) ~~90~~ d) 99
 ii) 32.5 m/sec a) 108 b) ~~117~~ c) 126 d) 135
2. Ramesh travelled 360 km at a constant speed. If his speed was 5 kmph less, then he would have taken 1 hour more for the journey. Find his speed (in kmph).
 a) 60 b) 72 c) 50 d) 45
3. Ajay covered a total of 400 km in 7 hours. He covered the first 150 km by car and the remaining distance by bus. Had he covered the first 150 km by bus and the remaining distance by car, he would have taken 40 minutes less for the entire journey. Find the speed of the bus (in kmph)
 a) 60 b) 50 c) 75 d) 40
4. If Mohan's speed was 20% more than his usual speed he would have reached his office 10 minutes earlier than usual, from his home. By how many minutes would he be late if his speed was 20% less than his usual speed?
 a) 10 b) 8 c) 12 d) 15
5. Raju reached his school 5 minutes late when he walked from his home to his school at 4 kmph. He would have reached his school 5 minutes early had he walked at 6 kmph. Find the distance between his home and his school (in km)
 a) 2 b) 4 c) 3 d) 5
6. The average speed of Anil while travelling from Mumbai to Pune was 60 kmph. He covered $\frac{3}{4}$ th of the total distance in $\frac{5}{8}$ th of the total travel time. Find his speed for the remaining journey (in kmph)
 a) 40 b) 50 c) 60 d) 72
7. Kabir travelled $\frac{2}{5}$ th of a certain distance at 40 kmph and the remaining distance at 36 kmph. Find his average speed for the entire journey (in kmph)
 a) 38 b) 37.5 c) 39 d) 36.5
8. In how many seconds can a 360 m long train cross an electric pole when travelling at 45 kmph?
 a) 12 b) 24.4 c) 16 d) 28.5
9. A train can cross a 340 m long platform in 30 seconds whereas it can cross a 370m long platform in 32 seconds. Find its length (in m)
 a) 130 b) 100 c) 120 d) 110
10. Ramu and Somu started in opposite directions from towns R and S respectively. Each of them started simultaneously and travelled towards the starting point of the other person. After meeting, Ramu and Somu took 20 minutes and 80 minutes respectively to reach their destinations. Find the time taken by them to meet each other (in minutes)
 a) 30 b) 36 c) 40 d) 50
11. At 7 am Anil started from town A towards town B at 30 kmph. At 8:00 am, Pavan started from A towards B at 40 kmph. At what time would Pavan overtake Anil?
 a) 10:30 am b) 11 am c) 9:30 am d) 10 am
12. A train took 20 seconds and 30 seconds to overtake Madan and Sumanth respectively. The speeds of Madan and Sumanth were 18 kmph and 36 kmph respectively. Find the speed of the train (in kmph)
 a) 72 b) 63 c) 81 d) 54
13. Train X started from town A towards town B at 6 am and reached B at 2 pm. Train Y started from B towards A at 7 am and reached A at 3 pm. At what time do both the trains cross?
 a) 10:30 am b) 10 am c) 9:30 am d) 11 am
14. The average speeds of a train without stoppages and that with stoppages are 90 kmph and 75 kmph respectively. Find the number of minutes it stops each hour on an average?
 a) 5 b) 10 c) 15 d) 20
15. A car travelling at 60 kmph is 6 km behind a bus. After 15 minutes, it will be 3 km ahead of the bus. Find the speed of the bus (in kmph)
 a) 24 b) 20 c) 30 d) 36
16. Manish and Satish started in opposite directions from towns A and B respectively. Both started simultaneously towards each other's starting point. The speed of Manish and Satish was 60 kmph and 40 kmph respectively. After meeting, the time taken by Satish to reach his destination was 5 hours more than that taken by Manish. Find AB (in km).

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DATA SUFFICIENCY-1

Direction for questions 1 to 25: Each question is followed by two statements, I and II. Answer each question using the following instructions:

Mark (A)--- if the question can be answered using one of the statements alone, but cannot be answered using the other statement alone.

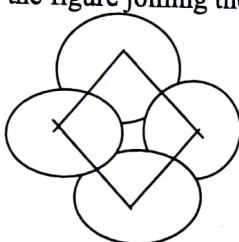
Mark (B)--- if the question can be answered using either statement alone.

Mark (C)--- if the question can be answered using I and II together but not using I or II alone.

Mark (D)--- if the question cannot be answered even using I and II together.

1. Is the given year X a leap year?
 - I. In the year X, 1st of January and 15th of July or on the same day of the week.
 - II. In the year X, 9th of January and 23rd of October are on the same day of the week.
2. In how many days can 8 men and 3 women do the work?
 - I. 15 men and 18, women can do the work in 45 days
 - II. 24 men and 9 women can do the work in 30 days.
3. Is the given triangle ABC an isosceles right triangle?
 - I. The circumcentre of the triangle lies on the triangle.
 - II. The perpendiculars from at least two vertices to the opposite sides are equal in length.
4. If a, b, c, d are e are integers, then is $\sqrt{a} - \sqrt{b} > \sqrt{d} + \sqrt{e}$?
 - I. a, b, c, d and e are consecutive numbers in descending order.
 - II. $\sqrt{a} + \sqrt{b} > \sqrt{d} + \sqrt{e}$.
5. Five persons - A, B, C, D and E, sit in a row facing towards north, not necessarily in the same order. What is the order (from left to right) in which these five persons are sitting?
 - I. C sits at the middle of the row and exactly two persons sit between B and E
 - II. A sits to the left of D but not adjacent to E.
6. Train A left Hyderabad for Tirupati at 6.00 a.m. and A train B left Tirupati for Hyderabad at 7.00 a. m. both trains travel at their respective uniform speeds. When will the two trains meet?
 - I. The distance between Tirupati and Hyderabad is 600 Km.
 - II. Train A reaches Tirupati at 4.00 p.m. and Train B reaches Hyderabad at 5.00 p.m.
7. What is 9th term of a geometric progression?
 - I. The fifth and third terms of the geometric progression are 16 and 4 respectively.
 - II. The second and seventh terms of the geometric progression are 2 and 64 respectively.
8. How are A and B related to each other?
 - I. A's maternal grandmother is D, who is the paternal grandmother of B.
 - II. A's paternal grandfather is C, who is the grandfather of B.
9. Each one of Ayush, Dhruv and Gaurav is a different height and a different weight. Is the heaviest person the tallest?
 - I. Ayush is neither the heaviest nor the tallest.
 - II. Dhruv is neither the heaviest nor the shortest and Gaurav is shorter than at least one of the other two.
10. Find the value of P, if P is a three-digit number and X is integer.
 - I. $\log_3 P = X$
 - II. $\log_7 P = X$
11. The average age of four persons A, B, C and D is 20 Years. Who is the youngest among the four?
 - I. The average age of A and C is 17 Years and that of B and D is 23 Years.
 - II. The average age of A and B is 16 years and that of C and D is 24 Years.
12. From among six boys – Ajay, Abhiram, Anand, Anirudh, Avinash and Ashok three teams were formed with two boys in each team. Who is the other member in the team with Abhiram?
 - I. Anand is teamed with either Ajay or Anirudh.
 - II. Abhiram did not team with Avinash or Ashok. Ajay did not team with Anand or Avinash.
13. Four players – A, B, C, and D are competing in a chess tournament, where each player plays exactly once with every other player. Did each of the four players win the same number of matches?

14. I. In the tournament, no match ended in a draw.
 II. A won against B and D and lost to C.
 If the cost of prices of two particles A and B are in the ratio 8: 15, is the profit on selling B more than the profit on selling article A?
 I. The selling prices of the two articles A and B are in the ratio 1: 2.
 II. The marked prices of the two articles A and B are in the ratio 2: 3.
15. In a bottle manufacturing unit, the number of bottles produced in the day shift is exactly twice those produced in the night shift. The number of defective bottles produced in the day shift is what percentage of the number of defective bottles produced in the night shift?
 I. The defective bottles in the day shift are one – fifth of the total production of bottles in the night shift.
 II. The defective bottles in one complete day's production are 10%.
 How many persons are there in the queue?
 I. In the queue, Akash is 15th from the front and Agni is 20th from the end.
 II. In the queue, there are eight persons in between Agni and Akash.
16. 17. If A saves 20% of his income, what is his expenditure?
 I. A's income is RS6000 less than B's income.
 II. A's savings and B's expenditure are equal, and B's income is Rs12000.
18. If the cost of 7 cone ice creams, 5 toffees and 3 lollipops, is Rs71. What is the total cost of cone ice cream, a toffee and a lollipop?
 I. The total cost of a cone ice cream, 3 toffees and 5 lollipops is Rs33.
 II. The total cost of 4 cone ice creams, 3 toffees and 2 lollipops is Rs42.
19. Does Amar have more money than Bhavan if they have a total of Rs120 with them?
 I. If Bhavan gives Rs20 to Amar, the differences of the amounts with them will be Rs40.
 II. If Amar gives Rs 10 to Bhavan, the differences of the amounts with them will be Rs20.
20. Is the figure joining the centers of the four circles, a square?



- I. The radii of opposite circles are equal.
 II. The radii of any two adjacent circles are equal.

21. If a, b, c and d are four positive integers, then is $(a+b)(c-d)$ an odd number?
 I. $a+b+c$ is an even number.
 II. $b+c-d$ is an odd number.
22. Raju went to the market to buy some apples and bananas. Each apple and each banana cost Rs7 and Rs11 respectively. He spent a total of Rs233 on both fruits. Did he buy more than 28 fruits?
 I. He bought more apples than bananas.
 II. If the cost of each apple was Rs2 more, his total expenditure on fruits would have been Rs 10 more.
23. A and B are the roots of a quadratic equation. Is $A^4B + AB^4$ negative?
 I. Product of the roots is negative and sum of the roots is negative.
 II. Product of the roots is positive and sum of the roots is negative.
24. A cube of the largest possible dimensions is cut from a wooden cuboid, whose length is equal to its breadth. Is the height of the cuboid at least twice its length?
 I. The largest cube that can be cut out of the remaining piece of wood has a volume equal to that of the piece cut initially.
 II. The length of the cuboid is less than twice its height.
25. Is $X^2 > X^4$, given that X is a real number?
 I. $X^3 > X^4$
 II. $X^3 > X^5$

CUBES AND DICE

Directions for questions 1 to 8: Select the correct alternative from the given choices.

1. If five cuts are made on a cube, what is the minimum number of pieces obtained? (Ans) $2^5 \times 2^4 \times 2^3 = 240$
a) 18 b) 6 c) 16 d) 25
2. If six cuts are made on a cube, what is the maximum number of identical pieces obtained? $2^6 \times 2^5 \times 2^4 = 384$
a) 16 b) 18 c) 36 d) 27
3. If two, three and four cuts are made parallel to different faces of a cube, then what is the number of identical obtained?
 $3+1 \times 4^2 = 12 \times 4 + 1 = 60$
a) 60 b) 30 c) 48 d) 24
4. What is the minimum number of cuts required to cut a cube into 216 identical pieces?
 $(6-1) + (6-1) + (6-1) = 18$
a) 36 b) 18 c) 15 d) 12
5. What is the minimum number of cuts required to cut a cube into 24 identical pieces?
 $2 \times 3 \times 4 = 1 + 2 + 3 = 6$
a) 6 b) 8 c) 9 d) 12
6. If 10 cuts are made on a cube; what is the maximum number of identical pieces obtained?
 $3 \times 3 + 4 = 4 \times 4 + 5 = 80$
a) 80 b) 100 c) 64 d) 125
7. 27 identical cubes are arranged to form a large cube. How many such cubes are required to completely, cover the large cube, so that the figure obtained also must be a cube?
 $5^3 - 3^3 = 98$
a) 125 b) 98 c) 64 d) 80
8. A large cube is formed using 125 identical smaller cubes and is placed at the corner of a large room. How many such smaller cubes are required to cover the large cube completely, so that the figure obtained also must be a cube?
 $(5+1)^3 - 5^3 = 96$
a) 91 b) 96 c) 75 d) 127

Directions for questions 9 to 11: These questions are based on the following information

A cube, painted on all its faces, is cut into 125 identical smaller cubes.

9. How many smaller cubes have no face painted?
a) 100 b) 81 c) 64 d) 27
10. How many smaller cubes have only one face painted?
a) 36 b) 54 c) 64 d) 108
11. How many smaller cubes have exactly two faces painted?
a) 36 b) 54 c) 48 d) 60

$$A = 5 \\ n = 3(A-2) \\ 3^3$$

$$9 \times 6 = 54$$

Directions for questions 12 to 14: These questions are based on the following information

Each of 216 small identical cubes are painted blue on all faces and all these cubes are arranged to form a large cube. Now all the faces of the large cube are painted pink.

12. How many small cubes have only one colour on them?
a) 96 b) 125 c) 64 d) 48
13. How many small cubes have exactly two faces painted pink?
 $216 = 6 \times 6 \times 6$
 $(6-2)^3 = 64$

- a) 36 b) 48 c) 64 d) 80
 14. How many small cubes have exactly three faces painted blue?
 a) 8 b) 4 c) 2 d) 6

$$12 \times 6 - 2 = 70$$

$$12 \times 4 = 48$$

Directions for questions 15 and 16: These questions are based on the following information.

Each of 125 small identical cubes are painted black on all faces and all these cubes are arranged to form a large cube. This large cube is placed at the corner of a large room and all the visible faces of this cube are painted white.

15. How many smaller cubes have at least two faces with white paint?
 a) 13 b) 16 c) 15 d) 10 $4+4+5$
 16. How many smaller cubes have no face painted white?
 a) 27 b) 100 c) 64 d) 81 $(5-1) \times (5-1) \times (5-1)$

Directions for questions 17 to 20: These questions are based on the following information.

216 small identical cubes are arranged to form a large cube. Now three faces of the large cube are painted yellow, of which no two faces are opposite each other. Of the remaining faces, two are painted green and the other black.

17. How many small cubes have all three colours on them?
 a) 1 b) 2 c) 3 d) 4
 18. How many small cubes have exactly two colours of them?
 a) 28 b) 30 c) 37 d) 44 $8 \times (n-2) \Rightarrow 8 \times (4) = 32 + 5 = 37$
 19. How many small cubes have exactly three faces painted in the same colour?
 a) 0 b) 1 c) 2 d) 3
 20. How many small cubes have black and green but not yellow colour on them?
 a) 8 b) 9 c) 10 d) 12 $2 \times 4 + 1$

Direction for the questions 21 to 24: These questions are based on the following information

A large cube is painted on all six faces and then it is cut into certain number of smaller but identical cubes. It was found that out of the smaller cubes there were twenty seven cubes which had no face painted at all.

21. How many smaller cubes have exactly one face painted?
 a) 54 b) 36 c) 48 d) 60
 22. How many smaller cubes have three faces painted?
 a) 8 b) 6 c) 10 d) 12
 23. How many smaller cubes were formed after cutting the original cube?
 a) 216 b) 343 c) 225 d) 125
 24. How many smaller cubes have exactly two faces painted?
 a) 24 b) 36 c) 48 d) 60

Training and Placement Cell				
Subject	Module	Topic	Semester	Work Sheet
Reasoning Ability	Logical Reasoning	Seating Arrangement	3.1	2
Name:		Regd No:		Date:

Direction(1-5) : Study the given information carefully and answer the given question:

Ten people are sitting in two parallel rows containing five people each, in such a way that there is equal distance between adjacent persons.

In row-1 J, K, L, M, and N are seated (not necessarily in the same order) and all of them are facing south.

In row-2 V, W, X, Y and Z are seated (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.

Z sits third to the right of W. V sits second to the left of Z. The person facing V sits to the immediate right of K. Only one person sits between K and M. J is not an immediate neighbour of K. Only two people sit between J and L. Neither K nor J faces Y.

(1) Who amongst the following is facing X?

- A) L B) N C) M D) K E) J

(2) What is the position of Z with respect to Y?

- A) immediate left B) Second to the right C) immediate left D) immediate right E) None

(3) Which of the following statements is true regarding M?

- A) L sits to the immediate right of M B) None of the given statements is true
 C) K is one of the immediate neighbours of M. D) M faces one of the immediate neighbours of X.
 E) Only one person sits between M and N.

(4) Who amongst the following is facing N?

- A) V B) X C) Y D) Z E) W

(5) Four of the given five are alike in a certain way based on the given arrangement and hence form a group. Which of them does not belong to that group?

- A) Y B) W C) J D) N E) M

Direction(6-9) : Study the given information to answer the given question;

Eight people- A, B, C, D, E, F, G and H are sitting around a circular table (facing the centre) with equal distances between each other, but not necessarily in the same order.

C sits third to the right of G. Only one person sits between G and F. A sits to the immediate left of F. B is neither an immediate neighbour of G nor C. H sits second to the left of B. D is one of the immediate neighbours of H.

(6) Which of the following statements is NOT TRUE with respect to the given arrangement?

- A) B is an immediate neighbour of both E and D
 B) C sits second to the left of D C) C sits to the immediate right of F
 D) Only three people sit between A and E E) All the given options are true

- (7) Who amongst the following sit/s exactly between F and D, when counted from the left of D ?
- A) Both C and H B) Only E C) Only C D) Both H and A
- (8) If all the people are made to sit in alphabetical order in anti-clockwise direction starting from A, the positions of how many people (excluding A) will remain unchanged?
- A) Three B) One C) Two D) More than three E) None
- (9) Who amongst the following sits to the immediate right of E ?
- A) H B) C C) B D) A E) G
- Direction(10-14) :** Study the following information carefully and answer the given question:
- Eight friends F, G, H, I, L, M, N and O are sitting around a circle with equal distance between each other - NOT facing the centre (They are all facing opposite of the centre) but not necessarily in the same order. H is an immediate neighbour of both N and G and F is third to the left of N. M is second to the right of H. I is third to the right of O.
- (10) Based on the seating arrangement, if M is to H, and following the same logic I is to F, then N is to
- A) L B) G C) I D) O E) H
- (11) Based on the given arrangement, four of the following five are similar to each other and hence make a group. Which of the following does NOT belong to the group?
- A) OI B) IG C) NM D) HL E) GF
- (12) Which of the following is N's position ?
- A) Exactly between H and M B) Immediate left of M C) Second to the left of L D) Immediate right of H E) None
- (13) Based on the given arrangement, four of the following five are similar to each other and hence make a group. Which of the following does NOT belong to the group?
- A) ONI B) GLI C) MIN D) HFL E) FHG
- (14) Which of the following is O's position ?
- A) Immediate left of M B) Immediate right of F C) Immediate left of L D) Immediate right of I E) None

Direction(15-19) : Study the information carefully and answer the question:

A, B, C, D, E, F, G and H are sitting around a circular area with equal distance amongst each other but not necessarily in the same order. Only two people face the centre and the rest face outside (i.e. in a direction opposite to the centre). B sits second to left of G. G faces outside. C sits third to right of B. Only two people sit between C and H. Immediate neighbours of H face outside. E sits second to right of H. One of the immediate neighbours of E faces the centre. D is not an immediate neighbour of B. F is not an immediate neighbour of H.

(15) Which of the following is true regarding A as per the given seating arrangement?

A) F sits second to left of A

B) B is one of the immediate neighbours of A

- C) E sits to immediate left of A D) Only three people sit between A and H

E) A faces the centre

(16) Which of the following groups represents the immediate neighbours of G ?

A) FH

B) AD

C) CF

D) DH

E) CE

(17) Who is sitting third to the right of H ?

A) D

B) F

C) C

D) A

E) G

(18) What is D's position with respect to B ?

A) Second to the right

B) Third to the left

C) Fourth to the right

D) Second to the left

E) Fifth to the left

(19) 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) E

B) F

C) B

D) D

E) C

Direction(20-24) : Study the following information carefully and answer the given question

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 four sit in the middle of each of the four sides. The ones who sit at the four corners face the centre of the table while those who sit in the middle of the sides face outside. Each one of them holds a different position in the office viz Manager, CEO, Chairman, Director, Associate, Trainee, Supervisor and Peon. (None of the information given is necessarily in the same order)

* The CEO sits fourth to right of G. G sits at the middle of one of the sides. Only two people sit between H and the CEO.

* A sits third to left of the Associate. Neither G nor H is the Associate. The Associate is neither an immediate neighbour of G nor H.

* Only one person sits between A and F. One of the immediate neighbours of F is the Manager.

* The Trainee sits to immediate right of C. C is neither the Associate nor Supervisor.

* E is the Director. E is not an immediate neighbour of H.

* The Peon sits to immediate left of D.

(20) Who amongst the following is the Supervisor?

A) B

B) A

C) H

D) F

E) D

(21) What is the position of the Trainee with respect to E ?

A) Third to the right

B) Third to the left

C) Fourth to the left

D) second to the left

E) Second to the right

(22) Which of the following positions does B hold in the office ?

A) Peon

B) Supervisor

C) Associate

D) Manager

E) CEO

(23) Which of the following is true regarding C ?

A) C is an immediate neighbour of the Peon

B) C is the Chairman

C) C sits second to left of B

D) F is one of the immediate neighbours of C

A) The CEO is an immediate neighbour of C

(24) Who amongst the following sits exactly between F and E ?

A) A

B) B

C) The director

D) The Trainee

E) Q sits second to the left of S

Direction(25-29) : Study the following information and answer the question:

Seven Friends, namely P, Q, R, S, T, U and V visit seven different companies namely, Samsung, Asus, Dell, Nokia, Cipla, Flipkart and Indigo, not necessarily in the same order, starting from Monday to Sunday (of the same week).

T visits a company on Thursday. Only two people visit between T and the one who visits Cipla.

Only four people visit between the one who visits Cipla and Q.

The one who visits Dell visits immediately after Q.

Only three people visit between the one who visits Dell and V.

Only one person visits between R and the one who visits Indigo.

R visits before the one who visits Indigo but not on Tuesday.

The one who visits Asus visits immediately before the one who visits Flipkart.

T does not visit Asus.

P visits immediately after the one who visits Nokia.

U neither visits Asus nor Dell.

S does not visit on Sunday.

(25) Which of the following companies does R visit ?

A) Cipla

B) Nokia

C) Asus

D) Flipkart

E) Dell

(26) Who amongst the following visits Samsung ?

A) V

B) S

C) Q

D) U

E) T

(27) Which of the following is true about S ?

A) S visits Asus.

B) S visits a company immediately before P.

C) All the given statements are true

D) S visits a company on Wednesday

E) Only three people visit between S and R.

(28) As per the given arrangement Q is related to the one who visits Nokia in a certain way and P is related to the one who visits Cipla in the same way. To which of the following is T related to in the same way ?

A) The one who visits Indigo

B) The one who visits Samsung

C) The one who visits Asus

D) The one who visits Flipkart

E) All options are not follows

Training and Placement Cell				
Subject	Module	Topic	Semester	Work Sheet
Reasoning Ability	Analytical Reasoning	Puzzles & DI	3.1	3
Name:		Regd No:		Date:

Directions(1-5): Read the information given below and answer the questions that follow:
A popular cricket website selected a cricket team called "chak de cricket" the conditions for the selection were:

- * The team has five batsmen, one wicket keeper, one all rounder and four bowlers.
- * The bats men have to play only at positions 1 to 5, the wicket keeper and all rounder play at positions 6 and 7 (in no specific order) and the bowlers play at positions 8 to 11.
- * Once the voting was comprising players of 6 months. Some of the points that were noted were.
- * India and England were the only countries that had one player each.
- * West Indies had three players in the team, which was the most for any country.
- * Warne from South Africa, play at position Six.
- * In terms of positions, Gavasker immediately succeeded Akram and immediately preceded Bradman.
- * Marshall did not play for England.
- * Lara, who was from India, was the wicket-keeper and he immediately preceded Tendulkar in the playing order.
- * Sobers and McGrath were from Pakistan and they played at positions second and tenth respectively.
- * The bowler who played at position ninth was from England.
- * Hayden and Akram played for the same country, which was not Australia and exactly one player played between them.
- * Two of the batsmen were Australian.
- * Gilchrist is one of the bowlers.
- * Tendulkar did not play for West Indies.

- (1) For which country did Tendulkar play?
 A) South Africa B) West Indies C) Pakistan D) Australia E) India
- (2) At which position did Gavaskar play?
 A) One B) Two C) Three D) Four E) Five
- (3) Who immediately followed Akram in the batting order?
 A) Tendulkar B) Gavaskar C) Haydon D) Marshall E) Lara
- (4) How many players play between Sobers and Warne?
 A) One B) Three C) Two D) Four E) None
- (5) Who among the following is the first Bowler?
 A) Akram B) Tendulkar C) Lara D) Marshall E) Warne

Directions (6-10) Study the following table carefully to answer the question.

Population Abstract of country 'A' (all the numbers are in thousands)

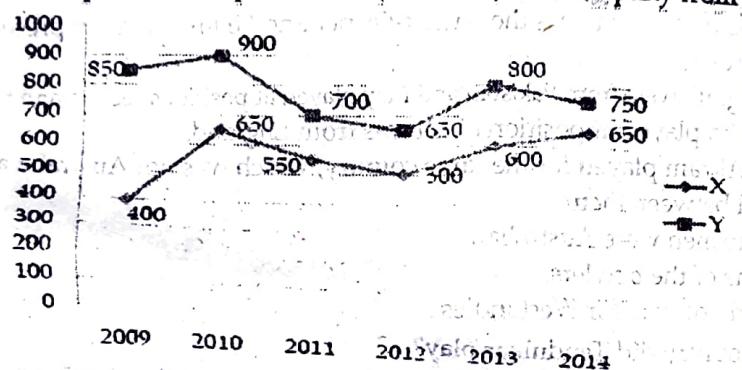
State	Total Population	0-6 Years	Literate	Below Poverty Line
R	3200	240	2400	64
S	4500	225	3600	60
T	2400	280	1800	18
W	3960	240	3200	72
X	4200	280	3500	21
Y	3890	300	3000	15

- (6) What percent of the population from states S, W & Y together is in the age group 0 - 6 years? (rounded off to two digits after decimal)
 - A) 5.69
 - B) 6.19
 - C) 6.32
 - D) 6.24
 - E) 5.86

- (7) Out of the total population in age group 0 - 6 years of age, 48% are girls and out the total number of girls 12% are school going. How many girls in this age group are not school going?
 A) 5,88,216 B) 6,22,586 C) 7,12,566 D) 5,29,456 E) None
- (8) What percent of the total population for states R, S & T together is below poverty line? (rounded off to two digits after decimal)
 A) 1.21 B) 1.31 C) 1.81 D) 1.71 E) 1.41
- (9) What is the difference between total literate population from states R, S & T together and the total illiterate population from these three states together?
 A) 23,00,000 B) 42,00,000 C) 45,00,000 D) 33,00,000 E) 55,00,000
- (10) If the sex ratio (female : male) of state W among total population is 980 / 1000 and that for state Y among total population is 945 / 1000, what is the total number of women (in thousands) from these two states together?
 A) 3620 B) 3450 C) 3240 D) 3850 E) 3540

Directions (11-17) study the graph carefully and answer the following questions.

The graph given below represents the production (in tonnes) of a company from 2009-2014.



The table given below represents the ratio of the production (in tonnes) by company A to the production (in tonnes) by company B and the ratio of the sales (in tonnes) by company A to the sales (in tonnes) by company B.

Year	Production	Sales
2009	9:8	2:3
2010	8:7	11:15
2011	5:9	4:7
2012	15:11	3:7
2013	5:3	7:5
2014	12:13	1:1

- (11) What is the approximate percentage increase in the production of company A from the year 2012 to the production of company A in the year 2013?
 A) 33% B) 30% C) 36% D) 26% E) 28%
- (12) What is the average production of company B (in tonnes) from the year 2009 to the year 2014?
 A) 368 B) 362.5 C) 378.5 D) 372.5 E) 376
- (13) The sales of company A in the year 2012 was approximately what percent of the production of company A in the same year?
 A) 44% B) 40% C) 36% D) 38% E) 42%

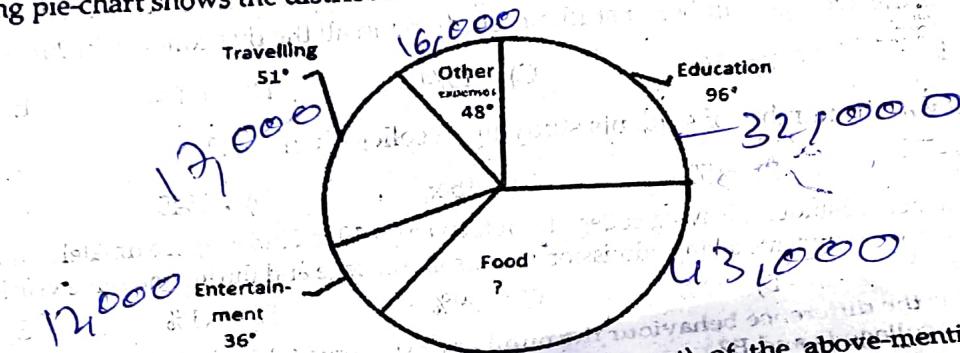
- (14) What is the ratio of the total production (in tonnes) of company A to the total sales (in tonnes) of company B in all the years together?
 A) 161 : 125 B) 161 : 126 C) 161 : 123 D) 169 : 126 E) 158 : 126

- (15) What is the average sales of company A from the year 2009 to the year 2014?
 A) 254 B) 243 C) 234 D) 256 E) 248

- (16) What is the ratio of production of company B in the year 2009 to the production of company B in the year 2011?
 A) 9 : 10 B) 6 : 7 C) 7 : 8 D) 5 : 6 E) 8 : 9

- (17) What was the approximate percentage more in the production of company B in the year 2014 as compared with the production of Company A in the year 2014?
 A) 6% B) 7% C) 8% D) 10% E) 12%

Directions (18-22): Study the following the pie-chart and table carefully to answer the questions given below:
 The following pie-chart shows the distribution of the monthly family budget of a person.



The following table shows the further distribution (in percent) of the above-mentioned items among the five family members i.e P (the person himself), W (his wife), Rahul (son), Rohit (son), and Preeti (his daughter). His monthly family budget is Rs. 1,20,000

	Education	Food	Entertainment	Travelling	Other expenses
P	10	30	10	40	20
W	15	25	30	10	25
Rahul	40	20	20	25	20
Rohit	25	15	25	10	10
Preeti	10	10	15	15	25

- (18) What is the average expenses of P?
 A) Rs. 5620 B) Rs. 5640 C) Rs. 5460 D) Rs. 5480 E) None

- (19) What is the approximate percentage increase in the amount which Rahul enjoys for entertainment as compared to Preeti for the same?
 A) 33% B) 31% C) 37% D) 35% E) None

- (20) The average expenses of Rohit are approximately what percent of the average expenses of W (Wife)?
 A) 76.4% B) 81.5% C) 79.5% D) 83.5% E) None

- (21) Find the difference (in percentage of the budget) between the average expenses of Education and the average expenses on Entertainment of the couple?
 A) 13% B) 0.9% C) 2% D) 2.5% E) None

- (22) 20 The total amount spent by Rahul on Travelling and Food is approximately what percent of the total amount spent by Preeti on Education and Food?
- A) 168% B) 171% C) 175% D) 174% E) None

Directions (23-27): Study the table carefully answer the questions given below.
In six years, the number of students taking admissions and leaving from the five different colleges which were founded in 2010 is given below.

College	A		B		C		D		E	
Years↓	A	L	A	L	A	L	A	L	A	L
2010	1125	1050	1200	1600	1550
2011	330	220	450	250	420	230	440	250	350	225
2012	290	210	325	215	400	250	400	260	380	230
2013	345	200	285	210	360	225	395	220	410	220
2014	380	250	300	190	340	240	420	225	440	210
2015	350	230	340	220	410	280	460	240	425	215

Note: A- Admitted L- Leaving

- (23) What is the average number of students studying in all the five colleges in 2012?
- A) 1594 B) 1694 C) 1574 D) 1584 E) None
- (24) What was the number of students studying in college B in 2014?
- A) 1445 B) 1555 C) 1545 D) 1645 E) None
- (25) The number of students leaving college from the year 2010 to 2015 is approximately what per cent of the number of students taking admission in the same college and during the same year?
- A) 37% B) 43% C) 39% D) 41% E) None
- (26) What is the difference behaviour the number of students taking admission between 2011 and 2015 in college D and B?
- A) 415 B) 395 C) 435 D) 385 E) None
- (27) In which of the following colleges, is the percentage increase in the number of students from the year 2010 to 2015 the maximum?
- A) D B) E C) B D) A E) C