

REASONING

Directions (1-3) : In each of the questions given below four statements followed by three Conclusions numbered I, II and III are given. You have to consider the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given Conclusions logically follows from the given statements, irrespective of commonly known facts.

1. Statement :

Some pens are erasers.
Some erasers are blades.
All blades are knives.
All knives are peelers.

Conclusions :

- I. At least some pens are blades.
 - II. At least some pens are peelers.
 - III. At least some blades are peelers.
- (1) Only II and III follow.
 - (2) Only I and II follow.
 - (3) Only I and III follow.
 - (4) All I, II and III follow
 - (5) None follows.

2. Statement :

Some doors are windows
Some windows are rods.
All rods are sticks
All sticks are weights.

Conclusions:

- I. At least some weights are windows.
 - II. At least some sticks are windows.
 - III. All rods are weights.
- (1) Only conclusion III follows.
 - (2) Only conclusion I and III follow.
 - (3) All Conclusions follow.
 - (4) None of the Conclusions follows
 - (5) None of these

3. Statements :

Some leaves are flowers.
Some flowers are petals.

Some petals are fruits.
Some fruits are plants.

Conclusions :

- I. Some plants are leaves.
 - II. Some petals are plants.
 - III. Some fruits are flowers.
- (1) Only Conclusions I and III follow.
 - (2) Only II and III follow.
 - (3) Only I and II follow.
 - (4) None follows.
 - (5) None of these

Directions (4-5) : The questions given below consist of six statements followed by five options each containing three statement group. You have to select the group in which related statements are logically.

4. A All scholars are fools.
B All those who are fools, are not scholars.
C All those who are fools are uneducated.
D All scholars are educated.
E All those who are fools are educated.
F Scholars are uneducated.
- (1) ABE (2) ADF
 - (3) ACF (4) BCE
 - (5) None of these
5. A Some polishes are made of oil.
B All oils are made of combs.
C All combs are used for polish.
D Some oils are combs.
E Some polishes are used for oils.
F Some combs are used for oils.
- (1) CEF (2) CBA
 - (3) ABE (4) BDF
 - (5) None of these

Directions (6-11) : Read the following information carefully and answer the questions given below :

Ten persons — Anupam, Ankur, Abhisar, Abhijeet, Anoop, Abhigyan, Animesh, Abhinav, Ankit and Abhishek are seated in two parallel

rows with equal distance and facing each other but not necessarily in the same order. The persons seated in row I are facing South while the persons seated in row II are facing the North. Among them, each of the persons like different games — Chess, Cricket, Kabbadi, Tennis, Kho-kho, Wrestling Carrom, Football, Badminton and Hockey. Each of them are wearing shirts of different colours — White, Blue, Brown, Green, Violet, Black, Red, Sky-blue, Yellow and Rose but not necessarily in the same order. All are staying in a building having ten floors. They stay on different floors but not necessarily in the same order. The ground floor is numbered as first floor and the immediate upper floor is numbered as second floor and so on till the topmost floor is numbered ten. Ankur is sitting in front of the neighbour of the person wearing green shirt. The person who likes kho-kho is sitting in the middle of the row and he is sitting in front of a person who is wearing Red shirt and he stays in the floor having even number. Only one person is staying in between the floors of Animesh and him. Ankit stays in the immediate upper floor of Anupam. Ankit stays in the floor having even number and a person wearing sky-blue shirt is sitting immediate right to him. Abhigyan is sitting in front of the neighbour of the person wearing yellow shirt and he stays in the floor having odd number. Only two persons are sitting in between Animesh and Ankur. Ankur does not stay in the ground (first) floor. Only one person is sitting between Ankur and the person wearing Red shirt. Anupam does not like cricket. Anupam does not stay either on third or the fifth floor. Two persons are staying between Anupam and the person who likes Badminton. Abhishek is sitting in front of the person wearing blue shirt. Abhishek does not like kho-kho. The person who is not wearing violet colour shirt is sitting in front of Animesh.

Anupam does not like wrestling. The person wearing Rose coloured shirt is sitting to the right of the person wearing violet shirt. The person wearing sky-blue colour shirt is facing North and he stays on the first floor. Abhijeet is not wearing sky-blue colour shirt and an immediate neighbour of Animesh is sitting in front of him. Only one person in that building is staying in between the floors of the persons who like badminton and chess. The person who likes wrestling stays in the immediate lower floor of the person who likes Badminton. Animesh is the immediate neighbour of Abhinav and Ankit is the immediate neighbour of Abhishek. The person wearing green shirt is the immediate neighbour of Abhijeet. Anoop stays in the immediate upper floor of Abhisar, only one person is staying in between the floors of the person who likes tennis and Abhisar. Abhigyan is sitting in front of the person wearing brown shirt. Abhigyan likes carrom and he is not wearing white colour shirt. Two persons are sitting in between Abhigyan and the person wearing brown shirt. Abhijeet is not sitting next to Abhishek. Ankit is sitting in front of the person wearing black shirt. Abhijeet is not the immediate neighbour of the person wearing brown colour shirt. Anoop is not sitting in front of the person wearing sky-blue shirt. Abhijeet is sitting to the right of the person wearing Rose shirt. The person who likes football is staying in the floor immediate upper to the person who likes Hockey. Two persons are staying in between Anupam and the person who likes Badminton. Ankur is wearing a blue shirt.

6. Who among the following is sitting third to the left of Abhishek?

- (1) Animesh (2) Abhigyan
- (3) Ankit (4) Abhisar
- (5) None of these

7. Which among the following combinations is sitting at the two ends of any row?

- (1) Abhishek, Anupam
- (2) Abhigyan, Animesh
- (3) Anupam, Abhijeet
- (4) Ankur, Abhinav
- (5) None of these

8. Who among the following does like wrestling?

- (1) Abhisar (2) Ankit
- (3) Animesh (4) Ankur
- (5) None of these

9. Which among the following games are liked by the immediate neighbours of the person wearing black shirt?

- (1) Tennis, Badminton
- (2) Badminton, Chess
- (3) Chess, Kabbadi
- (4) Tennis, Kabbadi
- (5) None of these

10. Based on the given arrangement, there is same relation among Abhishek-Badminton-Black shirt and Chess-Blue-Ankit. How is pink related to in the same way?

- (1) Kho-Kho-Abhigyan
- (2) Abhisar-Kho-Kho
- (3) Tennis-Anupam
- (4) White-Football
- (5) None of these

11. Who among the following is sitting in the middle of the row facing south?

- (1) Person wearing yellow shirt
- (2) Person who stays on the third floor
- (3) Person who likes cricket
- (4) Person who likes badminton
- (5) Other than the given option.

Directions (12-15) : Read the given information carefully and answer the questions given below :

In a certain code language, 'enjoy your trip immensely' is written as 'U s j 16 F o k p 25 J n n f o t m 25 z p v 18'

'economic journey has a good feeling' is written as 'B k p v s o f 2 5 G f f m j o 7 H p p 4 I b 19 F d p o p n j 3.'

'People like to travel abroad' is written as 'U s b w f l 2 Q f p q m 5 B c s p b 4 U 1 5 M j l 5'

12. Which among the following is the code for 'wish you a happy journey'?

- (1) k p v s o f 25 20 21 x j t 8 B I b q q 25
- (2) I b q q 25 B X j t 8 Z p 21 K p v s o f 25

(3) B k p u s p f 26 I b q q 25 x j t 82 p 21

(4) v h r 8 x n 21 I n t q m d 25 G z 0 0 25 B

(5) None of these

13. What will be the code for 'make an economic trip'?

- (1) ssj21 zm Lyj5 Dbnmnh3
- (2) Usj16 B14 Nbj5 Fdpopj3
- (3) B14 Usj16 Nbl5 Fdpopnj3
- (4) Fdpopnj3 B14 Nbl5 Utj16
- (5) None of these

14. Which among the following is the code of 'Ljo4 Hp4 Bm12 J19 U15'?

- (1) God is kind of all
- (2) God makes all kind.
- (3) God is kind to all
- (4) Cannot be determined
- (5) None of these

15. Which among the following is the code for 'keep smiling always'?

- (1) Bmxbz24 Lff16 Tmjnj07
- (2) Lff16 Bmxbz22 Tnjm07
- (3) Tnjmj07 Bmxbz19 Lff16
- (4) Tnjnj07 Bnxbz24 Lff17
- (5) None of these

Directions (16-20) : Read the given information carefully and answer the questions given below :

A word and number arrangement machine, when given an input line of words and numbers arranges them following a particular rule in each step. The following is an illustration of input and rearrangement. (All numbers are two digit numbers)

Input : tell 17 weep 25 age 67 still 53 hand 58 vein 90

Step I : 89 weep tell 17 25 age 67 still 53 hand 58 vein

Step II : 68 vein 89 weep tell 17 25 age still 53 hand 58

Step III : 57 tell 68 vein 89 weep 17 25 age still 53 hand

Step IV : 54 still 57 tell 68 vein 89 weep 17 25 age hand

Step V : 26 hand 54 still 57 tell 68 vein 89 weep 17 age

Step VI : 18 age 26 hand 54 still 57 tell 68 vein 89 weep and

Step VI is the last step for the above rearrangement as the desired arrangement is reached.

As per the rules followed in the above steps, find out in each of the following questions, the appropriate step for the given Input. (All numbers are two digits.)

Input : store 96 clean 57 take 16
break 29 feet 36 wait 70
ice 72

16. Which Step is the given arrangement?
58 ice 69 store 71 take 95 wait
break clean 16 29 feet 36
(1) Step IV (2) Step II
(3) Step VI (4) Step VII
(5) No such step
17. Which element is fifth to the left of the third from the left in step V?
(1) 95 (2) take
(3) 71 (4) feet
(5) ice
18. What will be the square root of the product of the seventh element from the right and eighth element from the left?
(1) 256 (2) 1024
(3) 65536 (4) 16
(5) None of these
19. What will be the position of 'wait' in step III?
(1) fourth from the left
(2) tenth from right
(3) fourth from the right
(4) tenth from left
(5) sixth from the left
20. Which element will be exactly in the middle of 'store' and '29' in step II?
(1) 57 (2) take
(3) break (4) 16
(5) None of these

Directions (21-23) : Read the following information carefully and answer the questions given below :

The seven members of a family are — P, Q, R, S, T, V and W. Two among them are married couple of different generations. Each of the family members works in different banks — IDBI, HDFC, ICICI, PNB, SBI, BOI and UCO but not necessarily in the same order. None of the females work in either HDFC or ICICI bank. In the family the grandfather works in BOI. S is the son of P, and 'P' works in IDBI. W is the daughter-in-law of R. 'R' works in SBI. Q is the grandfather of V and 'V' works in PNB bank. 'R' is the mother of T and 'T' works in HDFC bank.

21. In which bank the two married females work?
(1) UCO and SBI
(2) PNB and UCO
(3) SBI and PNB
(4) ICICI and SBI
(5) None of these
22. How is 'V' related to 'T' ?
(1) Sister (2) Daughter
(3) Aunt
(4) Data not sufficient
(5) None of these
23. Which of the following statements is true ?
(1) P and T are brothers
(2) R is the grandmother of V
(3) The members of the family are of three generations
(4) T and W are married couple
(5) None of these

Directions (24-28) : Read the following information carefully and answer the questions given below:

Ten persons — A, B, C, D, E, U, W, X, Y and Z — are sitting around a circular table facing the centre and facing each other but not necessarily in the same order. Each of them is related to D in some way or the other.

Only two persons are sitting between X and C. The wife of D is sitting third to the right of B. The father of D is not the immediate neighbour of D. C is sitting to the right of X. Only three persons are sitting in between C and the sister of D. A is sitting immediate right to Y. D is sitting second to the left of X. The son of D is sitting second to the right of D's sister. Only one person is sitting between Z and the son of D. Y is neither the son nor mother of D. Z is the immediate neighbour of the mother of D. Only three persons are sitting between the mother and brother of D. The daughter of D is sitting second to the left of D's brother. Four persons are sitting between D and the father of D.

24. How many persons are sitting between B and the mother of B when counted to the right of B?
(1) Five (2) Two
(3) Six
(4) Data not sufficient
(5) None of these

25. How is C related to X ?
(1) Husband (2) Wife
(3) Son (4) Nephew
(5) Data not sufficient
26. Who is sitting to the immediate left of Y?
(1) A (2) B
(3) D
(4) Data are inadequate
(5) None of these
27. Who is the brother of D ?
(1) A (2) B
(3) Y
(4) Cannot be determined
(5) None of these
28. Which of the following statements is **NOT TRUE**?
(1) Z is the aunt of B
(2) D has the same relation with A as C has with X.
(3) X is sitting immediate left to her daughter
(4) The daughter of D is sitting third to the right of D.
(5) None of these

Directions (29-30) : Read the following information carefully and answer the questions given below:

Six Cricket players — Tendulkar, Dhoni, Dravid, Lakshman, Kumble and Shewag played different matches in a session against different countries. Kumble had played more matches than Shewag and Lakshman only. Dravid had played more matches than Dhoni but less than Tendulkar. Shewag has not played the least number of matches. The player who had played the second highest number of matches has played eight matches. The person who had played the least number of matches has played only two matches.

29. Which of the following players has probably played eleven matches?
(1) Tendulkar (2) Kumble
(3) Shewag (4) Dravid
(5) Lakshman
30. If it is given that Kumble has played four matches less than Dravid, then how many matches Dhoni has played ?
(1) 4 (2) 8
(3) 6 (4) 9
(5) 11

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

Seven persons — Ravish, Ravindra, Ranvijay, Ranveer, Ramashankar, Ramendra and Ritesh are to deliver lecture in seven months of a year—such as — January, February, March, June, August, October and December but not necessarily in the same order. The subjects for lecture are — Anthropology, Psychology, Statistics, Organisational behaviour, Economics, Computer Science and Environmental awareness. Each of the persons likes different fruits — Mango, Litchi, Papaya, Banana, Grapes, Oranges and Apple but not necessarily in the same order.

The lecture on Computer Science is neither in February nor in October. The lecture of Ranvijay is in the month that has less than 31 days. The lecture of Ravish is immediately before the lecture of Ramashankar. Ritesh likes apples. The lecture of psychology is held immediately before the lecture on environmental awareness. The person who likes grapes delivers his lecture in the month having less than 31 days. The person who has to deliver lecture in March, does not like oranges. The lecture on statistics is not in August. Only two persons deliver lectures between the lectures of Ranvijay and Ranveer. The lecture on Anthropology is immediately before the lecture on economics. Only one person delivers lecture before the lecture of the person who likes papaya. The lecture of the person who likes bananas is immediately before the lecture of Ramashankar. The lecture on Anthropology is not delivered in January. The lecture of Ravindra is immediately before the lecture of the person who likes papaya. Three lectures were delivered between Ravindra and the person who likes mangoes. Ramashankar likes neither mango nor papaya.

31. The last lecture is delivered on which subject?

- (1) Computer Science
- (2) Anthropology
- (3) Economics
- (4) Cannot be determined
- (5) None of these

32. Which of the following combination is **NOT TRUE**?

- (1) August — Ravish — Banana — Environmental Awareness
- (2) December — Ranveer — Oranges — Anthropology
- (3) June — Ranvijay — Grapes — Computer Science
- (4) January — Ritesh — Apple — Organisational behaviour
- (5) March — Ravindra — Litchi — Statistics.

33. Who among the following likes Mangoes ?

- (1) Ravindra (2) Ramendra
- (3) Ranveer
- (4) Cannot be determined
- (5) None of these

34. In the given arrangement if months are written in reverse order, eg., January is written as December, February as October and so on, then in which of the following months the lecture of the person, who likes grapes, will be delivered ?

- (1) February (2) October
- (3) June (4) March
- (5) None of these

35. How many lectures are delivered there between Ritesh and Ravish ?

- (1) 5 (2) 3
- (3) 2
- (4) Cannot be determined
- (5) None of these

Directions (36-38) : 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 sufficient to answer the questions.

Read both the statements and

Mark 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.

Mark answer (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.

Mark answer (3) if the data either in statement I alone or in statement II alone are sufficient to answer the question.

Mark answer (4) if the data in both statements I and II together are not sufficient to answer the question.

Mark answer (5) if the data in both statements I and II together are necessary to answer the question.

36. What is the position of Yugal from the left in a group of 25 students, each of them facing North?

- I. Prakash is exactly in the middle of the row. There are five students between Prakash and Yugal. Yugal is sitting to the right of Prakash.
- II. There are two students between Sonam and Prakash and there are another two students between Sonam and Yugal.

37. Are Mohan, Sohan and Narendra in a straight line ?

- I. Narendra is in 6 metres East of Mohan. Om is 4 metres North of Narendra. Tejas is in 3 metres West of Om. Sohan is in 4 metres south of Tejas.
- II. Mohan is at the distance of 6 metres in North of Prem. Kaushal is exactly in the middle of Prem and Mohan. Ramesh is at the distance of 3 metres in East of Kaushal. Sohan is in 3 metres South of Ramesh, Narendra east of Sohan.

38. What is the code for 'Sunday' ?

- I. 'Forgiveness is virtue' is coded as '12T 18T 44F'
- II. 'Might is right' coded as 'M ∞ 20 R ∞ 19 I ∞ 20'.

Directions (39-41) : In each of these questions, two statements marked as I and II are provided. These statements may either be independent causes or may be the effects of independent causes of a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choices correctly depicts the relationship between these two statements.

Mark answer (1) if statement I is the cause and statement II is its effect.

Mark answer (2) if statement II is the cause and statement I is its effect.

Mark answer (3) if both the statements I and II are independent causes.

Mark answer (4) if both the statements I and II are the effects of independent causes.

Mark answer (5) if both the statements I and II are effects of some common causes.

39. I. All India Truck owners association went on a nation wide strike due to hike in cost of diesel.

II. Government has withdrawn its proposal to levy additional taxes on diesel.

40. I. Supreme court directed private engineering colleges to admit students through entrance test.

II. Supreme court directed private medical colleges to admit students through entrance test.

41. I. Many people are suffering from water borne diseases.

II. There are huge water logging in many parts of the city due to heavy downpour during past few days.

Directions (42-44) : In the following questions, the symbols \neq , \odot , $\%$ and $@$ are used with the following meaning :

- $P \neq Q$ means 'P is neither greater nor equal to Q'.
- $P \odot Q$ means 'P is neither equal to nor smaller than Q'.
- $P \% Q$ means 'P is neither smaller nor greater than Q'.
- $P \$ Q$ means 'P is not smaller than Q'.
- $P @ Q$ means 'P is not greater than Q'.

42. Statements :

$Z \neq F$, $R @ F$, $D \odot R$

Conclusions :

I. $Z \neq R$

II. $F \neq D$

III. $D \% Z$

(1) Only Conclusions I and III are true.

(2) Only Conclusions II and III are true.

(3) Only Conclusions I is true.

(4) All are true

(5) None of these

43. Statements :

$R @ D$; $D \odot W$; $B \$ W$

Conclusion :

I. $W \neq R$

II. $B \odot D$

III. $W \$ R$

(1) Only Conclusions I, II and III are true.

(2) Only Conclusions I and III are true.

(3) None is true.

(4) Only Conclusions II and III are true.

(5) None of these

44. Statements :

$H \$ V$, $V \% M$, $K \odot M$

Conclusions :

I. $K \odot V$

II. $M @ H$

III. $H \odot K$

(1) Only Conclusions II and III are true.

(2) Only Conclusions I and II are true.

(3) Only Conclusion II is true.

(4) All are true

(5) None of these

Direction (45-46) : In the questions below is given a statement followed by three courses of action numbered I, II and III. A course of action is a step or administrative decision to be taken for improvement, follow up or further action in regard to the problem, policy etc. On the basis of the information given in the statement you have to assume everything in the statement to be true, then decide which of the suggested courses of action logically follow (s) for pursuing.

45. Statement : A large number of MBA institutes are mushrooming all over the country. Most of the MBA Institutes are not at all as per standards.

I. The government should follow stringent norms for granting permission to management studies.

II. The students taking admissions to the management studies institutes should examine the accreditation for their degree.

III. The employers should make MBA as an essential qualification only for the positions for which it is genuinely essential.

(1) None follows.

(2) Only I and II follow

(3) Only I and III follow.

(4) Only II and III follow.

(5) All follow.

46. Statement : The occurrence of natural calamities has increased by manyfolds as compared to situation 5 years ago.

I. Government should always be ready with the action plan for disaster management.

II. Government should not permit development activities which are likely to cause harm to nature

III. Government should set up a committee of environmentalists and scientists to work out plans to handle various calamities.

(1) Only I and III follow

(2) Only II and III follow

(3) All follow

(4) None follows

(5) None of these

47. If Neha says, Anuradha's father Ramesh is the only son of my Father-in-law Mahesh, then how Bindu, who is sister of Anuradha is related to Mahesh?

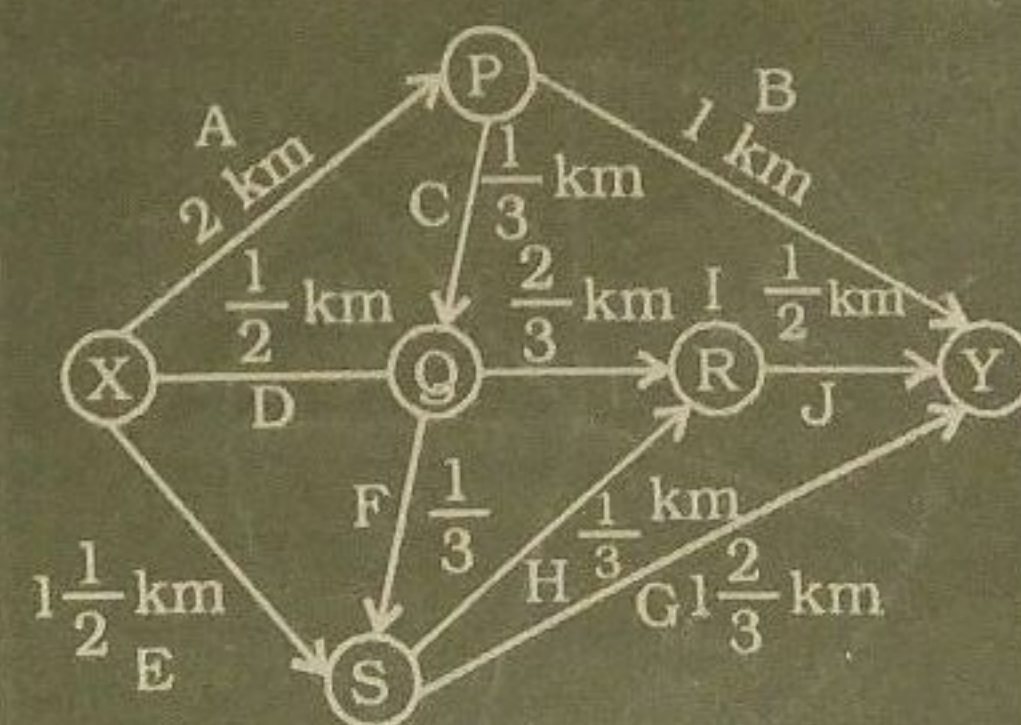
(1) Daughter (2) Wife

(3) Daughter-in-law

(4) Niece

(5) None of these

Directions (48-50) : Ten flyovers are built to join two places X and Y of a city. The flyovers are — A, B, C, D, E, F, G, H, I and J. These flyovers are joined at four junctions — P, Q, R and S. All are of single lane. The distances between all the routes are also shown. The fuel used by the vehicles on these routes is ₹ 6 per kilometre. The whole arrangement is shown by the diagram given below :



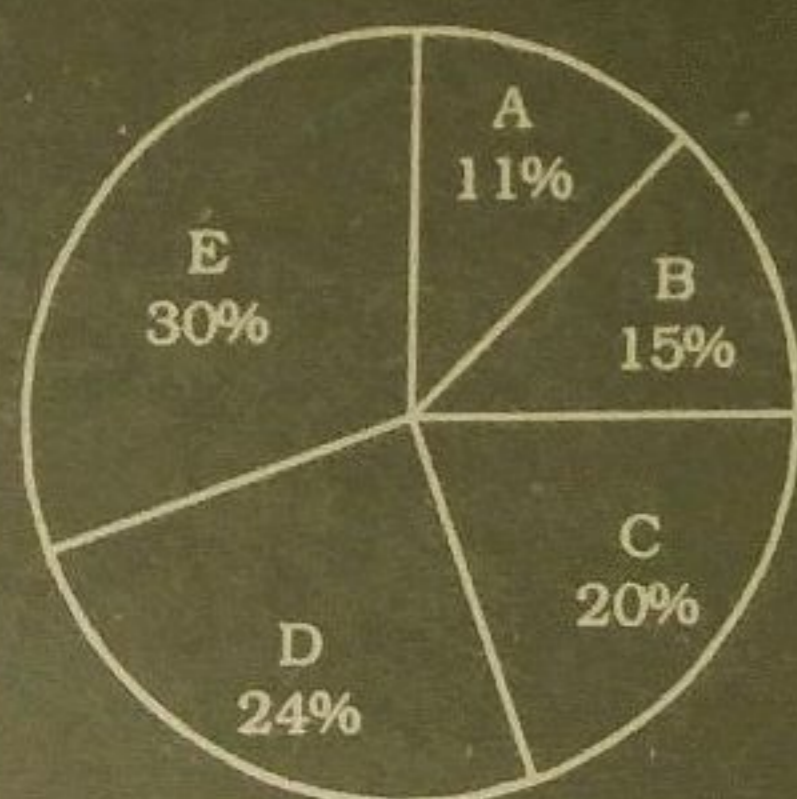
48. If the routes QS and PQ are under-construction and unavailable for transportation, then what should be the toll taxes for each of junctions P, Q, R, S respectively so that the fuel cost of each vehicle must be the same upto Y?
- (1) ₹ 2, ₹ 3, ₹ 4, ₹ 0
 (2) ₹ 0, ₹ 6, ₹ 5, ₹ 2
 (3) ₹ 2, ₹ 2, ₹ 3, ₹ 4
 (4) ₹ 5, ₹ 2, ₹ 3, ₹ 4
 (5) None of these
49. If the route PQ is unavailable for transportation and the toll taxes for the junctions P, Q, R and S are ₹ 4, ₹ 10, ₹ 5 and ₹ 6 respectively, then from which of the following routes the least number of the vehicles will pass?
- (1) X Q R Y (2) X S Y
 (3) X Q S R Y (4) X Q S Y
 (5) None of these
50. If all the functions are made toll-free, then which of the following routes will be the busiest one?
- (1) X P Y (2) X Q S Y
 (3) X Q S R Y (4) X S Y
 (5) None of these

QUANTITATIVE APTITUDE

Directions (51-55): Read the following pie-chart carefully and answer the questions given below it:

In a city there are five institutes, A, B, C, D and E which provide coaching for both engineering and medical entrance examinations. The total number of candidates who qualified these examinations in the year 2015 is shown in the Pie-chart below:

Total number of candidates qualified = 6000



51. What is the central angle corresponding to the total number of candidates qualified from institute D?
- (1) 74.2° (2) 76.8°
 (3) 82.5° (4) 86.4°
 (5) None of these
52. The total number of candidates qualified from institute B is 72% of the total number of candidates enrolled at institute B. What is the total number of candidates from institute B who didn't qualify?
- (1) 252 (2) 350
 (3) 648 (4) 540
 (5) None of these
53. In 2016, if the total number of candidates qualified increased by 15% for institute A and by 11% for institute E, then the total number of candidates qualified from A and E together in 2016 is
- (1) 2185 (2) 2569
 (3) 2757 (4) 3254
 (5) None of these
54. If the number of candidates who qualified medical entrance examination from institutes C and E are equal and the ratio between the number of candidates who qualified Engineering entrance examination from C to that from E is 4 : 7, then the number of candidates who qualified medical entrance exam from E is
- (1) 400 (2) 450
 (3) 500 (4) 600
 (5) None of these
55. From all the five institutes taken together if total number of candidates who qualified engineering entrance examination is 52% of the total number candidates who qualified medical or engineering entrance examination, then the difference between the number of candidates who qualified engineering and those who qualified medical entrance examination is
- (1) 220 (2) 240
 (3) 250 (4) 275
 (5) None of these
56. 2 years ago, the average age of A, B and C was 30 years. The present average age of A and B

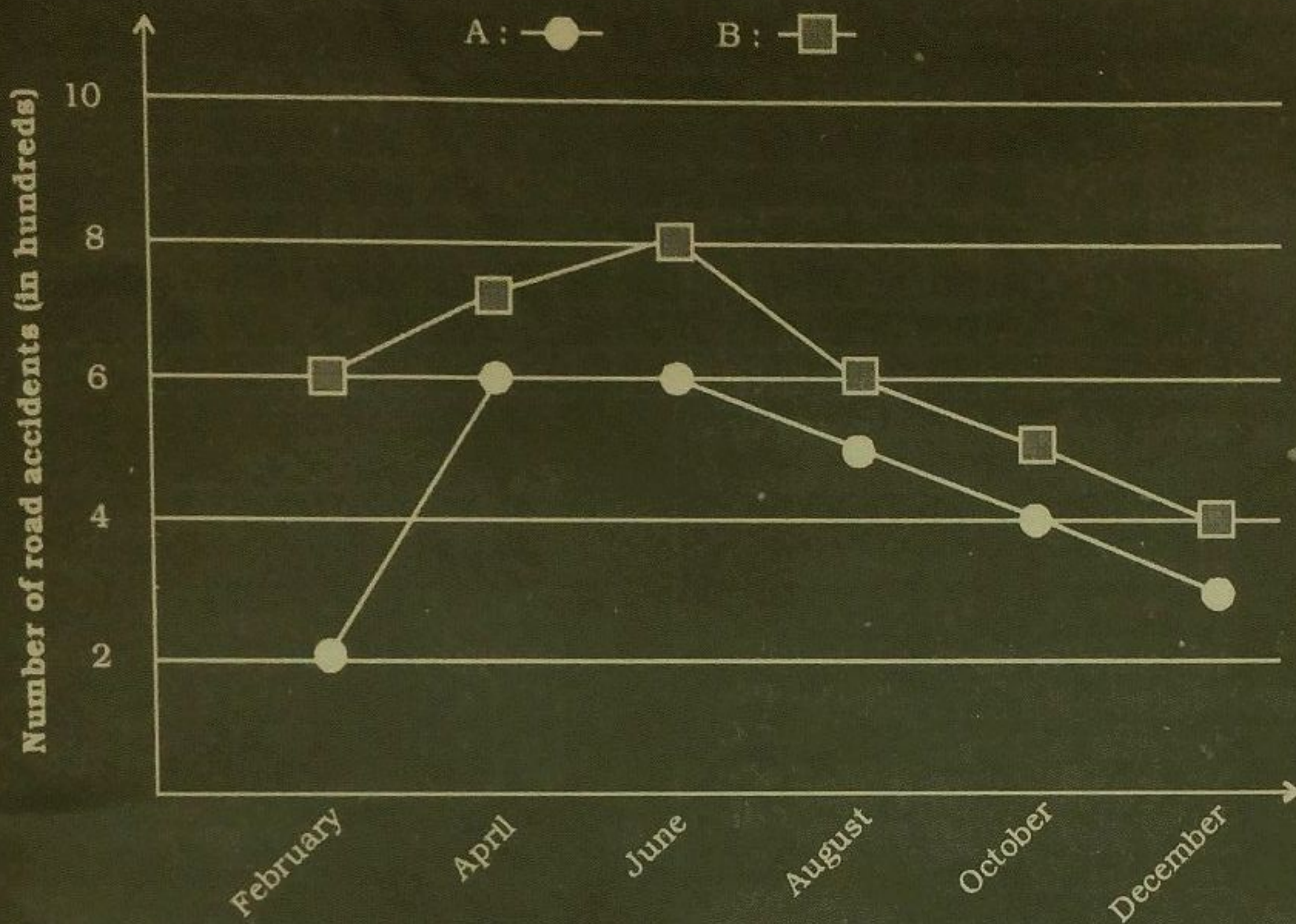
is 25 years. 4 years hence, the average age of C and D would be 43 years. What is the present age of D?

- (1) 32 years (2) 34 years
 (3) 35 years (4) 40 years
 (5) None of these
57. In a day a boatman makes 4 trips from A to B and 3 trips back from B to A. The current in the river flows from A to B. The ratio of total time taken for down stream trips to up stream trips is 4 : 5. If he covers a distance of 15 km against the current in 1 hour 15 minutes, then what is the speed of the current?
- (1) 2 km/h (2) 3 km/h
 (3) 4 km/h (4) 5 km/h
 (5) None of these
58. When two dice are rolled, find probability of getting a greater number on the first dice than the one on the second, given that that that the sum should equal 6.
- (1) $\frac{5}{18}$ (2) $\frac{2}{36}$
 (3) $\frac{5}{36}$ (4) $\frac{2}{5}$
 (5) None of these
59. A Started a company and B and C joined him later during the first year. The respective ratio of their investments was 4 : 2 : 3 and the period for which they invested was in the ratio 2 : 3 : 1. At the start of the second year A increased his investment by 50% while investments of B and C remained same and also for the same number of months as in the first year. If the total profit at the end of 2 years was ₹ 47,500 what was C's share in the total profit?
- (1) ₹ 5500 (2) ₹ 6500
 (3) ₹ 7500 (4) ₹ 8500
 (5) None of these

60. A man invests a certain sum at compound interest at 10% per annum for 2 years. He also invests $\frac{1}{3}$ rd less amount at simple interest at 10.5% per annum. what should be the period of his investment at simple interest so that the compound interest earned is only 75% of the simple interest earned?
- (1) 3 years (2) 4 years (3) 5 years (4) 6 years
(5) None of these

Directions (61–65) : Study the graph given below carefully and answer the following questions.

Number of road accidents (in hundreds) in 2015 in two cities A and B



61. What is the difference between total number of road accidents in cities A and B in the months of February, August and December taken together?
- (1) 500 (2) 400 (3) 600 (4) 300
(5) None of these
62. In February 2016, if the number of accidents increased in city A by 15% and in city B by 10% as compared to those in February 2015, then the difference between number of road accidents in February 2016 between city A and that in city B is
- (1) 410 (2) 430 (3) 450 (4) 470
(5) None of these
63. The number of accidents in city A in March, 2015 is average of those in February and April, and it is also equal to $\frac{8}{13}$ of the number of accidents in March 2015 in city B. What is the number of accidents in March 2016 if there is 10% decrease as compared to the corresponding month in 2015?
- (1) 585 (2) 270 (3) 415 (4) 715
(5) None of these
64. The total number of accidents in cities A and B taken together increased by 25% in December 2016 as compared to that in December 2015. If the number of accidents in city A in December 2016 is 10% more than that in December 2015, find the difference between the number of accidents in city B in December 2016 and December 2015.

- (1) 35 (2) 40
(3) 45 (4) 50
(5) None of these

65. What is the ratio of total number of accidents in city A in February and October 2015 together to the total number of accidents in city B in April and October 2015 together?
- (1) 3 : 2 (2) 2 : 3
(3) 2 : 1 (4) 1 : 2
(5) None of these

Directions (66 – 70) : Find the wrong term in the following series.

66. 7, 10, 20, 38, 65, 102, 151,
(1) 20 (2) 151
(3) 102 (4) 38
(5) None of these
67. 98, 90, 84, 72, 52, 22
(1) 98 (2) 84
(3) 72 (4) 22
(5) None of these
68. 6, 8, 19, 63, 249, 1251
(1) 8 (2) 19
(3) 63 (4) 249
(5) None of these
69. 9, 5, 6, 11, 23, 60
(1) 5 (2) 60
(3) 23 (4) 11
(5) None of these
70. 14.2, 16.3, 12.1, 18.4, 10.6, 20.5
(1) 20.5 (2) 10.6
(3) 18.4 (4) 12.1
(5) None of these
71. There are two containers A and B containing 40% milk. The quantity in B is three times of the quantity in A. The quantities of both A and B are mixed into a third container C and 10 litres of water is added to it. The ratio of milk to water in the resulting mixture is 4 : 11. The initial quantity (in litres) in A is
- (1) 4 (2) 5
(3) 6 (4) 8
(5) None of these
72. The ratio of work done by 20 men to work done by 30 women in same time is 8 : 5. If 10 men and 18 women can do a work in 12 days, how many men would be required to finish it in 14 days
- (1) 10 (2) 12
(3) 14 (4) 15
(5) None of these

73. In a class of 168 students, boys and girls are in the ratio 5 : 7. 50% of the total students can speak only Hindi. The ratio of number of students speaking only Hindi to that speaking only English is 21 : 16. The ratio of boys speaking English only to that of girls speaking English only is 3 : 5. If the number of boys speaking both English and Hindi is 12, what is the number of girls speaking Hindi only? (Assume that all students speak at least one language.)

- (1) 48 (2) 50
(3) 52 (4) 55
(5) None of these

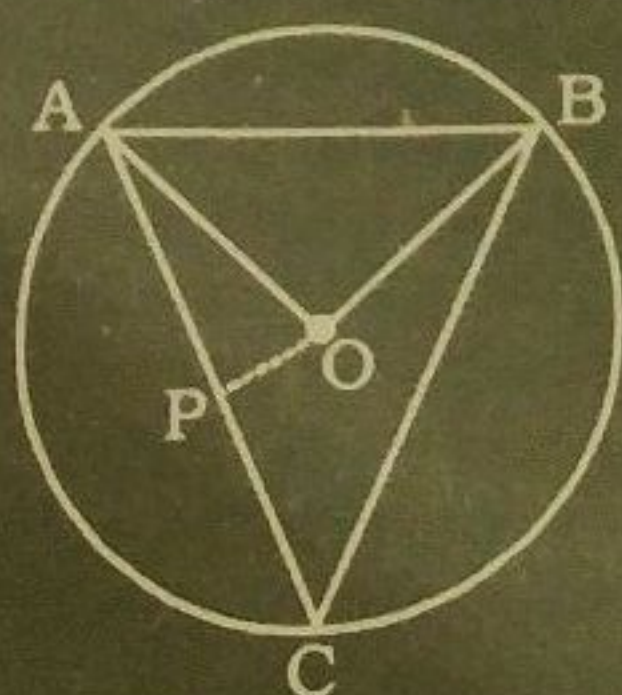
74. The ratio of cost price of a blazer to a tie is 11 : 4. A shopkeeper sells both the items together as a set. While his overall profit is 25%, the profit on blazer is 20%. If the profit on tie is ₹ 310, what is the cost price of the blazer?

- (1) ₹ 2000 (2) ₹ 2100
(3) ₹ 2200 (4) ₹ 2400
(5) None of these

75. The marked price of a chair is 40% less than that of a table. The discount on the chair is 50%. What should be the discount on the table so that the overall discount on the table and the chair taken together is $37\frac{1}{2}\%$?

- (1) 40% (2) 35%
(3) 32% (4) 30%
(5) None of these

76. In the figure given below, O is the centre of the circle. $\triangle AOB$ is an equilateral triangle while $\triangle ACB$ is isosceles with $AC = BC$. OP is drawn perpendicular to AC.



Quantity I : $\angle AOP$
Quantity II : $\angle BAP$

- (1) $I > II$ (2) $I < II$
(3) $I = II$ (4) $I \leq II$
(5) Relationship can't be established

77. $(x^{2a})^b = \sqrt{x^{\frac{4b}{c}}}$ and $\frac{x^{4b}}{x^{3a}}$

$= x^{3(a-b)}$, a , b and c being natural numbers.

- (1) $a \neq b \neq c$ (2) $a = b < c$
(3) $a < b = c$ (4) $a = b = c$
(5) None of these

Directions (78-82) : Study the following table carefully and answer the questions given below it.

The following table shows the investments and profits of the three partners A, B and C in a partnership firm for the period 2011-15. Except for the year 2015, the amounts invested by each are for the same period. Some data are missing which need to be calculated using given information.

Year	Investment (₹)			Profit (₹)		
	A	B	C	A	B	C
2011	16000	20000	—	2400	—	3900
2012	24000	—	11000	—	6000	4400
2013	22000	18000	20000	—	—	—
2014	—	—	—	4000	4500	3500
2015	—	—	32000	6300	5600	8400

78. If the total profit in 2013 is ₹ 7500, what is the profit earned by B?

- (1) ₹ 2250 (2) ₹ 2500
(3) ₹ 2750 (4) ₹ 3000
(5) None of these

79. The investment made by C in the year 2011 is

- (1) ₹ 2400 (2) ₹ 2500
(3) ₹ 2600 (4) ₹ 3000
(5) None of these

80. In 2015, the total investment of A and B together is ₹ 28000. If A and B invested their amounts for 12 months and 8 months respectively, then C's investment was for how many months?

- (1) 2 (2) 4
(3) 6 (4) 8
(5) None of these

81. What is the ratio of profit earned by A in 2012 to that in 2013?

- (1) 192 : 55 (2) 192 : 45
(3) 96 : 25 (4) 16 : 5
(5) None of these

82. If the profit earned by C is 25% of his investment in 2014, then what is the ratio of total investment in 2013 to 2014?

- (1) 2 : 3 (2) 3 : 2
(3) 4 : 3 (4) 5 : 4
(5) None of these

83. $a > b > 0$

For all the integral values of a and b

$$x = \frac{a^3 + b^3}{(a^2 - b^2)\{(a - b)^2 + ab\}}$$

Quantity I : x

Quantity II : 1

- (1) $I < II$ (2) $I \leq II$
(3) $I > II$ (4) $I = II$
(5) No relation

84. Four dice are thrown simultaneously.

I. Probability that all the four dice show even digits.

II. Probability that all the four dice show different digits.

- (1) $I < II$ (2) $I > II$
(3) $I = II$ (4) $I \geq II$
(5) No relation

85. A shopkeeper marks two items A and B 40% and 25% respectively above their cost prices. He give a discount of 25% on item A and a discount of 10% on item B. The selling price of both the items A and B is the same.

I. Cost price of item A

II. Cost price of item B

- (1) $I < II$ (2) $I = II$
(3) $I > II$ (4) $I \geq II$
(5) No relation

Directions (86-90) : What should come in place of question mark (?) in the following questions? (Note : You need not calculate the exact value).

$$86. 39.001 \left(\frac{1}{3}\right) + 41.998 \left(\frac{1}{3}\right) =$$

$$\frac{81}{6.999} \times \left(\frac{2}{3}\right)$$

- (1) 252 (2) 216
(3) 294 (4) 343
(5) None of these

$$87. (2.02)^2 + (7.99)^2 + (11.01)^2 + (10.98)^2 = ?$$

- (1) 1024 (2) 310
(3) 342 (4) 584
(5) None of these

$$88. \sqrt{288.98} \times 16.99 + 1070.99 \div 63.02 = ?$$

- (1) 306 (2) 294
(3) 311 (4) 299
(5) None of these

$$89. (187.5 \times 18)^6 \div (270 \div 18)^{10} \div (150 \times 1.5)^7 = (3.75 \times 4)^?$$

- (1) 3 (2) - 3
(3) 6 (4) - 6
(5) None of these

90.

$$\frac{\sqrt{360.97} \times 19.01 - 107.98 + \sqrt{8.99}}{26.99 \times \sqrt{9.01} - 8.01 \times \sqrt{3.99}}$$

- (1) 3 (2) 4
(3) 5 (4) 6
(5) None of these

Directions (91—95) : In the following questions, which of the given statement(s) are necessary for determining the answer.

91. A shopkeeper mixes two different types of rice A and B and sells the mixture at the rate of ₹ 45 per kg. What is the profit earned by him?

- I. Cost price of rice A is ₹ 42 per kg.
II. Cost price of rice B is ₹ 50 per kg.
III. Cost price of rice B is ₹ 8 per kg higher than that of rice A.
(1) Only I and II
(2) Only I and III
(3) I, II and III together are not sufficient
(4) Either (I) or (II)

92. What was the percentage discount offered by the shopkeeper?

- I. Profit earned by selling the article for ₹ 432 after giving discount was ₹ 32.
II. Had there been no discount, the profit earned would have been ₹ 80.

III. Had there been no discount, the profit earned would have been 20%

- (1) I and II Only
(2) II and either I or III only
(3) I and III Only
(4) I and either II or III only.
(5) None of these
93. 14 men and 9 women can do a work in 15 days. In How many days can 11 men and 6 women do the same work?
- I. 6 men can complete the work in 50 days.
II. 6 women can complete the work in 75 days.
III. The work done by 2 men is equal to the work done by 3 women in one day.
(1) I or II
(2) Only II or III
(3) Only I or III
(4) Only III
(5) None of these
94. What is the sum of the present ages of father and the son?
- I. Father's present age is thrice son's present age
II. After 6 years the ratio of father's age to the son's age will be 12 : 5
III. The difference between the father's age and the son's age is equal to twice the son's age.
(1) I and III
(2) II alone
(3) II and either I or III
(4) I and either II or III
(5) None of these
95. What is Ram's savings per month from his salary?
- I. He spends 25% on food, 45% on other items and rest he saves.
II. He spends ₹ 15000 on food, 45% on other items and rest is his savings.
III. He spends ₹ 15000 on food, ₹ 27000 on other items and rest he saves.
(1) I Only
(2) II Only
(3) III Only
(4) Any two of the three
(5) None of these

Directions (96—100) : Study the information given in the passage carefully and answer the questions based on it.

An agency conducted a survey on the beverage preferences of students in a college. It included 1800 students in which male to female ratio was 5 : 4. the beverage options were coffee, tea and juice. A student could choose one or more beverages only coffee, only tea, only juice, both coffee & tea, both coffee& juice, both tea & juice or all the three. 20% of the females opted for only juice. 15% of the males opted for only coffee which is equal to the number of females opting for only tea and is equal twice of the number of females opting for tea and coffee both. 5% of the total number of students opted for all the three, of which two-fifth are females 10% of the total students opted for coffee and juice both, which is four times the number of males opting for juice and tea both. 10% of males opted for coffee and juice both. The number of females opting for only coffee is 60% of the males opting for only coffee. 20% of the total number of students opted only for juice. The number of males opting for coffee and tea both is 30% of the total number of males.

96. Total how many female students opted for coffee?

- (1) 281 (2) 245
(3) 206 (4) 201
(5) None of these

97. Total how many male students opted for juice but not coffee?

- (1) 200 (2) 225
(3) 245 (4) 299
(5) None of these

98. Total how may students opted for tea but not coffee?

- (1) 404 (2) 405
(3) 510 (4) 555
(5) None of these

99. Total how may male students opted for tea?

- (1) 505 (2) 496
(3) 550 (4) 650
(5) None of these

100. What percent of total number of female students opted for juice but not tea?

- (1) 25% (2) 30%
(3) 20% (4) 40%
(5) None of these