

'Q × R' means 'Q is husband of R'

'Q – R' means 'Q is sister of R'

9. In the expression $Q + R \times P - S \div T$, how is S related to R?

- 1) Brother-in-law 2) Sister-in-law 3) Nephew
4) Brother 5) Can't be determined

10. In the expression $Q + R - S + T \div M$, how is M related to Q?

- 1) Son 2) Daughter 3) Grandson
4) Can't be determined 5) None of these

11. Which of the following expressions shows that K is sister of M?

- 1) $J + K - L + N \div M$ 2) $J \times K - L \div N \div M$ 3) $J + L - K \div M + N$
4) Can't be determined 5) None of these

12. Which of the following is true for the given expression?

' $J + K - L + N \div M$ '

- 1) K is aunt of N and M 2) K is father of M 3) N is sister of M
4) J is father of N 5) None of these

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

Rani, Rita, Renu, Rajesh, Ram, Rohan, Radha and Rohit are sitting around a circular table, facing the centre, but not necessarily in the same order. No two males or two females are immediate neighbours of each other. Rani is wife of Rohit and sits third to the left of Ram. Rohan sits second to the right of Rajesh. Rajesh is not an immediate neighbour of either Rani or Ram. Rohit and Renu are immediate neighbours of each other. Rohan is not immediate neighbour of his wife Rita.

13. Who sits third to the left of Rita?

- 1) Rani 2) Rohit 3) Rohan 4) Radha 5) None of these

14. Four of the following five pairs are alike in a certain way and so form a group. Which is the one that does not belong to that group?

- 1) Rohit-Rani 2) Rohan-Radha 3) Rajesh-Rita
4) Renu-Rita 5) Ram-Renu

15. What is the position of Radha with respect to Ram?

- 1) Immediate right 2) Third to the left 3) Third to the right
4) Can't be determined 5) None of these

16. Who sits between Renu and Rani?

- 1) Rohit 2) Ram 3) Rajesh 4) Rohan 5) None of these

17. Who is husband of Rita?

- 1) Rajesh 2) Ram 3) Rohit
4) Can't be determined 5) None of these

Directions (Q. 18-22): In each of the questions given below three statements are followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer:

- 1) if only conclusion I follows.
2) if only conclusion II follows.
3) if either conclusion I or conclusion II follows.
4) if neither conclusion I nor conclusion II follows.
5) if both conclusions I and II follow.

(18-19):

Statements: Some ties are belts.
All belts are shirts.
No shirt is a T-shirt.

18. **Conclusions:** I. All ties being shirts is a possibility.

II. Some shirts are not belts.

19. **Conclusions:** I. All T-shirts being ties is a possibility.

II. No belt is a T-shirt.

(20-21):

Statements: All crows are birds.
All birds are parrots.
Some birds are sparrows.

20. **Conclusions:** I. All crows are parrots.

II. All parrots being sparrows is a possibility.

21. **Conclusions:** I. Some parrots are not birds.

II. All sparrows are birds.

22. **Statements:** Some knives are pins.

All pins are keys.

No key is a lock.

Conclusions: I. Some locks are knives.

II. No lock is a knife.

23. If the expression $D > A < G = C \geq F > P$ is definitely true, which of the following would be definitely true?

1) $G \leq F$ 2) $C = P$ 3) $A < F$ 4) $G > P$ 5) $D < G$

24. In which of the following expressions the expression ' $A \leq M$ ' holds definitely true?

1) $B \geq N = M \leq G < P \leq A$ 2) $Q \geq M < G > A \leq F < E$
3) $B \geq Q = G \geq A \leq R > M$ 4) $Q \geq M \geq N = W \geq A < F$
5) $E > F < M = G \geq Q > A$

25. In which of the following expressions, $R \geq P$ is false?

1) $R \geq T = P \geq Q \leq M$ 2) $Q \geq P = M \leq R < T$
3) $Q > R = T < M \leq P$ 4) $S \geq T \geq M = P \leq R$
5) None of these

26. Which of the following symbols should replace the question mark in the given expression to make $R \leq Q$ definitely true?

$X = Q = L ? P ? R$

1) $<, <$ 2) $\leq, =$ 3) $\leq, <$ 4) $<, \leq$ 5) None of these

Directions (Q. 27-30): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give 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 either in statement I alone or in statement II alone are sufficient to answer the question.

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

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

27. P, Q, R, S and T are sitting around a circle, facing the centre. Who is second to the right of P?

I. R is on the immediate left of T and second to the right of S.

II. Q is on the immediate right of S and third to the left of P.

28. Among M, K, B, D and W, who is the youngest?

I. B is younger than D.

II. W is younger than K but older than M.

29. How is Vandana related to Prabha?

I. Mallika's sister Vandana is Rajesh's wife. Prabha is Rajesh's good friend.

II. Prabha is Rajesh's brother's wife and Vandana is Rajesh's wife.

30. What is the code for 'is' in a code language?

I. In the code language 'shi tu ke' means 'pen is blue'.

II. In the same code language 'ke si re' means 'this is wonderful'.

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

K, P, T, C, N, D, L and J are standing in a row facing north, but not necessarily in the same order.

Only N is between C and D whereas only L is between D and J. T and K are P's neighbours.

Neither T nor C is at the extreme end of the row. J is to the right of T but not necessarily on the immediate right.

31. Who among the following are neighbours?

1) T, K 2) T, C 3) N, L 4) K, J 5) L, T

32. Which of the following is true?

- 1) N is on the immediate right of D.
- 2) K is not at either of the extreme ends.
- 3) P is between K and T.
- 4) T is at one of the extreme ends.
- 5) None of these

33. Which of the following defines the position of D?

- 1) D is second to the left of J.
- 2) D is second to the right of L.
- 3) D is at one of the extreme ends.
- 4) D is the neighbour of C.
- 5) None of these

34. Which of the following pairs is the neighbour of N?

1) D, L 2) C, T 3) T, L 4) C, D 5) None of these

35. Which of the following pairs is at the extreme ends of the row?

- 1) J, P 2) K, P 3) K, J
- 4) Can't be determined 5) None of these

Test-II: Quantitative Aptitude

Directions (Q. 36-40): What will come in place of question mark (?) in the following questions?

36. $[(3024 \div 189)^{1/2} + (684 \div 19)^2] = (?)^2 + 459$

- 1) -27 2) -29 3) 31 4) 841 5) 1089

37. 4.4 times $\frac{5}{16}$ of 30% of 216 = ?
 1) 81.9 2) 83.7 3) 87.3 4) 89.1 5) None of these
38. $(0.0729 \div 0.1)^3 \div (0.081 \times 10)^5 \times (0.3 \times 3)^5 = (0.9)^{?+3}$
 1) 1 2) 2 3) 4 4) 7 5) None of these
39. $(\sqrt{?}\% \text{ of } \sqrt{1764} \times 5) = 149.8 - 112$
 1) $\sqrt{18}$ 2) 18 3) 324 4) 24 5) None of these
40. $(27)^2 \times 6 \div 9 + (7)^3 + 71 = (?)^3 - 431$
 1) 11 2) $(13)^3$ 3) 13 4) $(11)^2$ 5) None of these

Directions (Q. 41-45): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

- 1) if $x > y$ 2) if $x \geq y$
 3) if $x < y$ 4) if $x \leq y$
 5) if $x = y$ or no relationship can be established.

41. I. $20x^2 - 67x + 56 = 0$ II. $56y^2 - 67y + 20 = 0$
 42. I. $x^4 = 65536$ II. $y = \sqrt[3]{4096}$
 43. I. $2x^2 + 11x - 40 = 0$ II. $4y^2 - 27y + 44 = 0$
 44. I. $7x = 4y + 85$ II. $y = \sqrt[3]{17576}$
 45. I. $x^2 = 14641$ II. $y = \sqrt{14641}$

Directions (Q. 46-50): What will come in place of question mark (?) in the following number series?

46. 17 19 33 (?) 129 227
 1) 64 2) 73 3) 67 4) 72 5) None of these
47. 35 256 451 620 763 (?)
 1) 680 2) 893 3) 633 4) 880 5) None of these
48. 18 139 868 917 (?) 1051
 1) 1042 2) 1036 3) 942 4) 996 5) None of these
49. 2890 (?) 1162 874 730 658
 1) 1684 2) 1738 3) 1784 4) 1672 5) None of these
50. 14 1004 1202 1251.5 1268 (?)
 1) 1267.5 2) 1276.25 3) 1324.5 4) 1367.25 5) None of these

51. Six women and 10 children together take six days to complete a piece of work. How many days will 10 children take to complete that piece of work if six women together can complete the same piece of work in 10 days?

- 1) 21 2) 18 3) 12 4) 15 5) None of these

52. The ratio of the monthly incomes of Sneha, Tina and Akruti is 95:110:116. If Sneha's annual income is ₹3,42,000, what is Akruti's annual income?

- 1) ₹3,96,900 2) ₹5,63,500 3) ₹4,17,600 4) ₹3,88,000 5) None of these

53. Meghna covered 3.36 km in four weeks by walking an equal distance each day. How many metres does she walk each day?

- 1) 100 m 2) 60 m 3) 140 m 4) 120 m 5) None of these

54. The perimeter of a square is twice the perimeter of a rectangle. If the perimeter of the square is 56 cm and the length of the rectangle is 9 cm, what is the difference between the breadth of the rectangle and the side of the square?

- 1) 7 cm 2) 9 cm 3) 11 cm 4) 5 cm 5) None of these

55. A truck covers a distance of 256 km at the speed of 32 kmh^{-1} . What is the average speed of a car which travels a distance of 160 km more than the truck in the same time?

- 1) 46 kmh^{-1} 2) 52 kmh^{-1} 3) 49 kmh^{-1} 4) 64 kmh^{-1} 5) None of these

56. A man riding a bicycle completes one lap of a square field along its perimeter at the speed of 39.6 kmh^{-1} in 1 minute 20 seconds. What is the area of the field?

- 1) 52900 sq m 2) 44100 sq m 3) 48400 sq m
4) Cannot be determined 5) None of these

57. The compound interest accrued in two years on a principal amount of ₹16,250 is ₹5,616. What is the rate of interest pcpa?

- 1) 22% 2) 16% 3) 18%
4) Cannot be determined 5) None of these

58. Out of the fractions $\frac{3}{5}, \frac{7}{9}, \frac{4}{7}, \frac{2}{3}$ and $\frac{5}{8}$, what is the difference between the largest and the smallest fractions?

- 1) $\frac{8}{63}$ 2) $\frac{19}{63}$ 3) $\frac{11}{63}$ 4) $\frac{17}{63}$ 5) None of these

59. On Teachers' Day, 3200 sweets were to be equally distributed among a certain number of children. But on that particular day 80 children remained absent and hence each child got two sweets extra. How many children were originally supposed to be there?

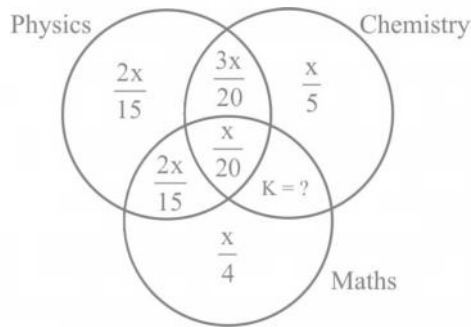
- 1) 320 2) 500 3) 540 4) 400 5) Cannot be determined

60. In how many different ways can the letters of the word 'VIRTUAL' be arranged among themselves?

- 1) 840 2) 5040 3) 2520 4) 1680 5) None of these

Directions (Q. 61-65): A total of x students appeared in a class test consisting of three papers, viz Physics, Chemistry and Maths. The following Venn diagram shows the number of students who passed these three papers. None of the students failed in all the three papers together.

Answer given questions based on this diagram.



61. How many students are there who passed in Chemistry and Maths but failed in Physics?

- 1) $\frac{x}{6}$ 2) $\frac{x}{12}$ 3) $\frac{x}{20}$ 4) $\frac{x}{5}$ 5) None of these

62. What is the difference between the number of students who passed in Chemistry and the number of students who passed in Physics? (The number of students who passed in all the three papers is 15.)

- 1) 5 2) 10 3) 15 4) 20 5) None of these

63. How many students are there who passed in exactly one paper, if the number of students who passed in exactly two papers is 110.

- 1) 160 2) 165 3) 170 4) 175 5) 180

64. The number of students who passed in at least two papers is what percentage of the total number of students?

- 1) $33\frac{1}{2}\%$ 2) $41\frac{2}{3}\%$ 3) 44% 4) $47\frac{1}{2}\%$ 5) None of these

65. The number of students who passed in only Maths is what percentage more than the number of students who passed in all the three papers?

- 1) 20% 2) 80% 3) 120% 4) 200% 5) 400%

66. Two trains start at the same time from Delhi and Pune and proceed towards each

other at the rate of 50 km/hr and $37\frac{1}{2}$ km/hr respectively. When they meet, it is found that one train has travelled 400 km more than the other train. What is the distance between Delhi and Pune?

- 1) 2000 km 2) 2400 km 3) 2800 km 4) 3000 km 5) None of these

67. In how many ways can 6 boys and 5 girls be seated in a row so that they sit alternately?

- 1) 43200 2) 86400 3) 21600 4) 840 5) 720

68. When two dice are thrown, what is the probability that the difference of the numbers shown by them will be 3?

- 1) $\frac{2}{9}$ 2) $\frac{1}{36}$ 3) $\frac{1}{6}$ 4) $\frac{1}{18}$ 5) None of these

Directions (Q. 69-70): Each of the questions below consists of a question and two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give 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 either in statement (I) alone or in statement (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 both statements (I) and (II) together are necessary to answer the question.

69. A student scored 300 marks in five subjects, viz A, B, C, D and E. What is his score in A?

- (I) The average of marks scored by him in B, C, D and E is 63.
- (II) His marks in A is 80% of the average of marks scored by him in all five subjects.

70. If $x + y + z = 51$, what is the value of x , y and z ?

- (I) $z - x = 4$
- (II) z is the largest and y is the smallest number.

Test-III: English Language

Directions (Q. 71-75): Rearrange the following seven sentences (A), (B), (C), (D), (E), (F) and (G) in the proper sequence to form a meaningful paragraph; then answer the questions given below.

- (A) They have to, therefore, necessarily devise strategies for product differentiation and pricing, market segmentation and efficient portfolio management.
- (B) There is a great need for the banks to fully exploit these sectors to achieve a win-win situation for both —the farm and non-farm sector units and the banks.
- (C) The time has now come to consolidate on the gains of the past decades of nationalised banking.
- (D) This means banks will no longer be operating in a “seller’s market”.
- (E) Undoubtedly, an untapped and vibrant market for commercial banking exists in the farm and non-farm sectors of rural economy.
- (F) Then, and only then, could it be claimed that the nationalisation has, at least to some extent, achieved the purpose of nationalisation.
- (G) The present era of financial liberalisation and globalised banking would entail that banks equip themselves to face the rigours of a highly competitive financial market.

71. Which of the following should be the **SECOND** sentence after rearrangement?

- 1) G 2) F 3) E
- 4) D 5) C

72. Which of the following should be the **THIRD** sentence after rearrangement ?

- 1) G 2) F 3) A
- 4) D 5) B

73. Which of the following should be the **FIFTH** sentence after rearrangement?

- 1) G 2) F 3) E
- 4) B 5) D

74. Which of the following should be the **FIRST** sentence after rearrangement ?

- 1) G 2) F 3) E
- 4) D 5) C

75. Which of the following should be the **SEVENTH** sentence after rearrangement?

- 1) G 2) F 3) E
4) C 5) D

Directions (Q. 76-78): Fill up the blanks with a suitable pair of words from the options given below to make a meaningful sentence.

76. _____ hearing the news he felt _____ because his hard work had not borne fruit.

- 1) After, embellished 2) At, crestfallen 3) On, dejected
4) While, elated 5) At, forlorn

77. He did _____ but _____ .

- 1) nothing, complained 2) all, this 3) everything, passed
4) nothing, grudge 5) None of these

78. Please _____ the grease _____ the floor.

- 1) wipe, in 2) scour, off 3) take, from
4) remove, at 5) None of these

Directions (Q. 79-82): Read each sentence to find out whether there is any grammatical mistake/error in it. The error if any, will be in one part of the sentence. Mark the number of the part with error as your answer. If there is no error, mark 5).

79. 1) All companies must / 2) send its annual report to / 3) its shareholders twenty-one days / 4) before the Annual General Body Meeting. / 5) No error

80. 1) To be an effective manager / 2) it is vital to / 3) know the goals and vision / 4) of your organisation. / 5) No error

81. 1) His aim is / 2) provided cheap and / 3) reliable internet facilities / 4) to every village within five years. / 5) No error

82. 1) Bank notes have / 2) many special features so / 3) that bank staff can / 4) easier identify fake notes. / 5) No error

Directions (Q. 83-90): Read the following passage carefully and answer the questions given below it. Certain words/phrases are printed in bold to help you locate them while answering some of the questions.

Food inflation is a significant negative feature of today's economic environment and more so in respect of our country. It has a tremendous impact on quality of life, as people struggle to maintain nutritional standards that they had previously achieved, or give up some other forms of consumption so as to keep themselves well-fed. For a country that legitimately believed that it had effectively dealt with its vulnerability to food shortages in the form of the Green Revolution of the late 1960s and early 1970s, the current situation comes as a rude reminder that **solutions are rarely permanent**.

To place the current developments in context, it must be pointed out that the world economy is itself facing problems with food prices. Food as a category has been following global trends in commodity prices over the past couple of years. There is a view that this is the outcome of the larger trend towards financialisation of commodities wherein large increases in global liquidity as a response to the 2008 crisis feed directly into higher asset prices, including commodities. Be that as it may, the price dynamics of individual food items suggest that there are also some commodity-specific factors at work which may either reinforce or counteract the broader trend. Sugar, for example, shows **fluctuations** in response to current supply conditions, while wheat reflects the effect of persistent drought in some major cultivating areas.

India's food inflation is certainly linked to global trends, particularly in relatively heavily traded

commodities like sugar and oilseeds, but, given the high degree of self-reliance in many other commodities, domestic factors play a big role. Although the drivers of inflation in recent months have been energy prices and demand pressures, as reflected in the non-food manufactured products index, food prices contributed significantly in the first half of 2010 and remain uncomfortably high. Apart from the direct impact on the index, it is also likely to feed through into the wider inflationary process through higher wage demands, of which there is some evidence.

It is generally believed that food prices are highly **sensitive** to monsoon performance, but this belief has been tested over the past few years. There is sufficient evidence to suggest that food prices are being driven not by transitory factors, such as rainfall, but by more fundamental forces. Essentially, a long period of relatively rapid growth has taken large numbers of households across a threshold at which they begin to look for nutritional diversification. The predominance of cereals in the typical household diet gives way to greater balance and a consequent increase in the demand for proteins—pulses, milk, meat, fish and eggs, vegetables and fruit. It is no surprise that these items have been the primary causes of food inflation in the recent period.

83. Why, according to the passage, does food inflation affect people's quality of life?

- 1) It is a fundamental requirement of every individual.
- 2) Generally, people refrain from maintaining their nutritional standards.
- 3) People generally are averse to change their form of consumption.
- 4) People like to keep themselves well-fed.
- 5) None of these

84. Which of the following statements contradicts the general belief that our country has achieved self-sufficiency in respect of food?

- 1) Food inflation is a significantly negative feature of today's economic environment.
- 2) Our country legitimately believes having mastered food deficiency.
- 3) Green Revolution of the late 1960s and early 70s has helped us conquer dependence on others for food.
- 4) Our vulnerability to food shortages was effectively dealt with by us in the late 1960s and early 70's.
- 5) None of these

85. Which of the following best explains the phrase, 'solutions are rarely permanent' as used in the passage?

- (A) Our strategies for overcoming food shortages in a specific period have proved to be futile subsequently.
- (B) The current situation has been a rude reminder of our self-reliance in a specific period in the matter of food.
- (C) The general tendency of people to keep themselves well-fed leads to food inflation.
- 1) Only A and B
 - 2) Only B and C
 - 3) Only A
 - 4) Only C
 - 5) None of these

86. What, according to the passage, is definitely the root cause of problems with global food prices?

- 1) Shortage of commodities that constitute food items
- 2) Financialisation of commodities
- 3) Food crisis faced globally in 2008
- 4) Increase in global liquidity
- 5) None of these

87. The example of sugar and wheat helps us to conclude that

- (A) Certain commodity-specific factors help perpetuate a general tendency.
 (B) Certain commodity-specific factors make the trend go in reverse direction.
 (C) The current supply conditions are insensitive to the global trends.
- 1) All the three 2) Only B and C 3) Only A and C
 4) Only A and B 5) None of these

88. Which of the following is/are crucial factor(s) responsible for India's food inflation in the recent period?

- (A) Escalating energy prices and rising demand pressures
 (B) Changing scenario all over the world that influences food inflation
 (C) People's inclination to nutritional diversification
- 1) All the three 2) Only B and C 3) Only A and C
 4) Only A and B 5) None of these

89. Which of the following statement/s is/are definitely TRUE in the context of the passage?

- (A) Past few years' data show that food prices are heavily dependent on monsoon performance.
 (B) Increased food prices have exerted an impact on the index and instigated higher wage demands.
 (C) In the typical Indian household, consumption of food items with high protein-content is on a higher side.
- 1) All the three 2) Only A and B 3) Only B and C
 4) Only C 5) Only A and C

90. Which of the following best explains the meaning of the two words "fluctuations" and "sensitive" taken together in the context of the passage?

- 1) Considerate to establish stability
 2) Vulnerability to changes
 3) High impact of change
 4) Vulnerability leading to chaos
 5) Susceptibility to security

Directions (Q. 91-100): In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, five words are suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.

Today experts all over the world are of the opinion that agriculture will affect the future of the world.

The world has a serious food **(91)** and the only way to solve **(92)** is if more people take up **(93)**. Moreover since the 1980s, technology and finance jobs **(94)** been the basis of America's economy. **(95)**, in recent times, farmers' incomes have risen **(96)**. It has also been a long time **(97)** farming was a major source of employment, but data **(98)** that unemployment in America is **(99)** in states where farming is the **(100)** occupation. As the demand for food is rising – what the world needs today is more farmers.

- 91.** 1) trouble 2) problem 3) doubt 4) discussion 5) production
92. 1) how 2) usually 3) it 4) these 5) which
93. 1) farming 2) time 3) matter 4) offer 5) job
94. 1) also 2) has 3) not 4) have 5) were
95. 1) However 2) Instead 3) Despite 4) Again 5) Still
96. 1) much 2) up 3) above 4) sharply 5) highly
97. 1) when 2) since 3) while 4) as 5) after
98. 1) collected 2) informs 3) calculate 4) analysed 5) show
99. 1) lowest 2) smaller 3) decreased 4) important 5) not
100. 1) mostly 2) best 3) suitable 4) superior 5) main

Answers

(01 - 05):

Person	Place	Car	Gender
P	Jhansi	Maruti Delux	Female
Q	Goa	Toyota	Male
R	Jaipur	Ferrari	M/F
S	Goa	Toyota	Female
T	Jaipur	Ferrari	M/F
U	Goa	Toyota	Female
V	Goa	Toyota	Male
W	Jhansi	Maruti Delux	Male

01. 1

02. 2

03. 4

04. 5

05. 1

06. 2;

$$\begin{array}{cccc} T & E & A & M \\ +1 & +1 & -1 & -1 \\ \swarrow & \searrow & \swarrow & \searrow \\ B & N & S & D \end{array}$$

Similarly,

$$\begin{array}{cccc} S & Q & M & E \\ +1 & +1 & -1 & -1 \\ \swarrow & \searrow & \swarrow & \searrow \\ N & F & R & N \end{array}$$

So,

$$\begin{array}{cccc} S & K & I & P \\ +1 & +1 & -1 & -1 \\ \swarrow & \searrow & \swarrow & \searrow \\ J & Q & R & J \end{array}$$

07. 1;

B	T	E	A	S	K	R
5	1	#	\$	3	%	4

So,

$$\begin{array}{cccc} S & E & A & T \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 3 & \# & \$ & 1 \end{array}$$

08. 1; The given series is

$$\begin{array}{cccccc} C & D & E & G & H & I & L & M & N \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ X & W & V & T & S & R & O & N & M \end{array}$$

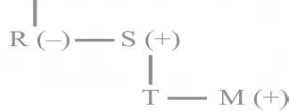
C is 3rd from the left of the alphabet while X is 3rd from the right; D is 4th from the left and W is 4th from the right; and so on.

09. 5; Q(+)

$$\begin{array}{c} \downarrow \\ R(+) \Leftrightarrow P(-) - S - T(+) \end{array}$$

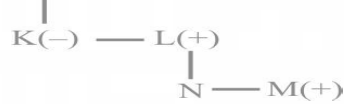
Hence, S may be either male or female. Thus, we can't determine the relation between S and R, because S may be either brother-in-law or sister-in-law of R.

10. 3; Q (+)



Hence, M is grandson of Q.

11. 2; Option (1) J (+)



K is aunt of M.

Hence, option (1) is not true.

Option (2)



Hence, option (2) is true.

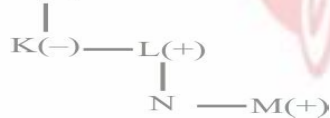
Option (3) J (+)



K is either brother or sister of M.

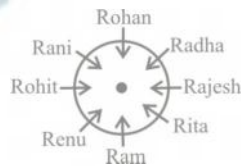
Hence, option (3) is not true.

12. 1; J (+)



Hence, K is aunt of N and M.

(13 - 17):



13. 2

14. 4

15. 3

16. 1

17. 5; Rohan

18. 1; Some ties are belts (I) + All belts are shirts (A) = I + A = I = Some ties are shirts. Hence a positive relation exists between ties and shirts. Thus, conclusion I follows.

Again, All belts are shirts → conversion → Some shirts are belts. Hence, conclusion II does not follow.

19. 5; Some ties are shirts (I) + No shirt is a T-shirt (E) = I + E = O = Some ties are not T-shirts. But All T-shirts being ties is a possibility. Hence, conclusion I follows.

Again, All belts are shirts (A) + No shirt is T-shirt (E) = A + E = E = No belt is a T-shirt. Hence, conclusion II follows.

20. 5; All crows are birds (A) + All birds are parrots (A) = A + A = A = All crows are parrots. Hence, conclusion I follows.

Again, there is no negative statements. Hence, the possibility exist. Thus, conclusion II follows.

21. 4; All birds are parrots → conversion → Some parrots are birds. Hence, conclusion I does not follow.

Again, Some birds are sparrows → conversion → Some sparrows are birds. Hence, conclusion II does not follow.

22. 3; Some knives are pins (I) + All pins are keys (A) = I + A = I = Some knives are keys (I) +

No key is a lock (E) = I + E = O = Some knives are not locks. Thus, conclusion I and II do not follow.

But both conclusions make a complementary pair (I-E). Hence, either conclusion I or II follows.

23. 4; Given expression $D > A < G = C \geq F > P$

Check for (1): $G = C \geq F$

So, $G \geq F$ true, but $G \leq F$ is not true.

Hence option (1) is not true.

Check for (2): $C \geq F > P$

So, $C > P$ is true, but $C = P$ is not true.

Hence option (2) is not true.

Check for (3): $A < G = C \geq F$

Can't compare A and G

Hence option (3) is not true.

Check for (4): $G = C \geq F > P$

So, $G > P$ is true

Hence, option (4) is true

Check for (5): $D > A < G$

Can't compare D and G.

Hence option (5) is not true.

24. 4; **Check for (1):**

$B \geq N = M \leq G < P \leq A$

So, $M < A$ is true.

Thus option (i) is not the right choice.

Check for (2): $Q \geq M < G > A \leq F < E$

Can't compare M and A.

Thus option (2) is not right choice.

Check for (3): $B \geq Q = G = A \leq R > M$

Can't compare A and M.

Thus option (3) is not right choice.

Check for (4): $Q \geq M \geq N = W \geq A < F$

So, $M \geq A$ or $A \leq M$.

Thus option (4) is the right choice

Check for (5): $E > F < M = G \geq Q > A$

So, $M > A$.

Thus option (5) is not the right choice.

25. 3; **Check for (1):** $R \geq T = P \geq Q \leq M$

So, $R \geq P$ is true. Option (1) is not the right choice.

Check for (2): $Q \geq P = M \leq R < T$

$P \leq R$ or $R \geq P$ is true.

Option (2) is not the right choice.

Check for (3): $Q > R = T < M \leq P$
 $R < P$. Hence option (3) is the right choice.

Check for (4): $S \geq T \geq M = P \leq R$
 So, $R \geq P$ is true.

Hence option (4) is not the right choice.

26. 5; Check for (1): $X = Q = L < P < R$

So, $Q < R$. Hence $R \leq Q$ is not true.

Thus, option (1) is not the right choice.

Check for (2): $X = Q = L \leq P = R$

So, $Q \leq R$. Hence $R \leq Q$ is not definitely true.

Thus option (2) is not the right choice.

Check for (3): $X = Q = L \leq P < R$

Hence $R \leq Q$ is not definitely true. Option (3) is not the right choice.

Check for (4): $X = Q = L < P \leq R$

So, $Q < R$. Hence $R \leq Q$ is not true.

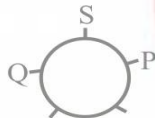
Hence option (4) is not the right choice.

27. 2; From I. We get



Since the position of P is not clear, statement I alone is not sufficient.

From II.



Obviously, Q is second to the right of P. Hence, statement II alone is sufficient.

28. 4; From I and II, we get

$D > B$... (i)

$K > W > M$... (ii)

We can't combine both the statements. So, we cannot say who is the youngest among them.

Thus, both statements I and II are not sufficient to answer the question.

29. 2; The specific relationship between Vandana and Prabha is not mentioned in statement I.

From II.

Vandana \leftrightarrow Rajesh \rightarrow Rajesh's Brother \leftrightarrow Prabha



Hence, statement II alone is sufficient to establish the relationship between Vandana and Prabha. Therefore, Vandana is sister-in-law of Prabha.

30. 5; From I and II. We get

shi tu ke \rightarrow pen is blue ... (i)

ke si re \rightarrow this is wonderful ... (ii)

Note that the terms 'ke' and 'is' are common between both (i) and (ii). Hence, 'ke' is the code for 'is'.

(31-35):



31. 2

32. 3

33. 1

34. 4

35. 3

$$36. 2; (16)^{1/2} + (36)^2 = ?^2 + 459$$

$$\text{or, } ?^2 = 4 + 1296 - 459 = 841$$

$$\text{or, } ? = \pm 29$$

$$37. 4; 4.4 \times \frac{5}{16} \times \frac{30}{100} \times 216$$

$$= 4.4 \times \frac{5}{16} \times 64.8 = 89.1$$

$$38. 1; (0.729)^3 \div (0.81)^5 \times (0.9)^5 = (0.9)^{?+3}$$

$$\text{or, } (0.9)^9 \div (0.9)^{10} \times (0.9)^5 = (0.9)^{?+3}$$

$$\text{or, } (0.9)^{9-10+5} = (0.9)^{?+3}$$

$$\text{or, } (0.9)^4 = (0.9)^{?+3}$$

$$\therefore ? = 1$$

$$\text{or, } [(0.9)^3]^3 \div [(0.9)^2]^5 \times (0.9)^5 = (0.9)^{?+3}$$

$$39. 5; \left(\sqrt{\frac{?}{100}} \text{ of } 42 \times 5 \right) = 37.8$$

$$\text{or, } \left(\frac{\sqrt{?}}{10} \text{ of } 42 \times 5 \right) = 37.8$$

$$\text{or, } 4.2 \sqrt{?} \times 5 = 37.8$$

$$\text{or, } 21 \sqrt{?} = 37.8$$

$$\text{or, } \sqrt{?} = 1.8$$

$$\text{or, } ? = 3.24$$

$$40. 1; (729 \times 6 \div 9) + 343 + 71 + 431 = ?^3$$

$$\text{or, } 486 + 343 + 71 + 431 = ?^3$$

$$\text{or, } ?^3 = 1331 = (11)^3$$

$$\therefore ? = 11$$

$$41. 1; \text{I. } 20x^2 - 35x - 32x + 56 = 0$$

$$\text{or } 5x(4x - 7) - 8(4x - 7) = 0$$

$$\text{or } (5x - 8)(4x - 7) = 0$$

$$\therefore x = \frac{8}{5}, \frac{7}{4}$$

$$\text{II. } 56y^2 - 32y - 35y + 20 = 0$$

$$\text{or } 8y(7y - 4) - 5(7y - 4) = 0$$

$$\text{or } (8y - 5)(7y - 4) = 0$$

$$\therefore y = \frac{5}{8}, \frac{4}{7}$$

$$\therefore x > y$$

$$42. 4; \text{I. } x^4 = 65536$$

$$\therefore x = \pm 16$$

$$\text{II. } y = \sqrt[3]{4096}$$

$$\therefore y = 16$$

$$\therefore x \leq y$$

$$43. 3; \text{I. } 2x^2 + 16x - 5x - 40 = 0$$

$$\text{or } 2x(x + 8) - 5(x + 8) = 0$$

$$\text{or } (2x - 5)(x + 8) = 0$$

$$\therefore x = \frac{5}{2}, -8$$

$$\text{II. } 4y^2 - 16y - 11y + 44 = 0$$

$$\text{or } 4y(y - 4) - 11(y - 4) = 0$$

$$\text{or } (4y - 11)(y - 4) = 0$$

$$\therefore y = 4, \frac{11}{4} \quad \therefore x < y$$

44. 1; I. $7x = 4y + 85$
or $7x = 4 \times 26 + 85$ (Put $y = 26$)

$$\therefore x = \frac{189}{7} = 27$$

II. $y = \sqrt[3]{17576} \quad \therefore y = 26$

$$\therefore x > y$$

45. 4; I. $x^2 = 14641$

$$\therefore x = \pm 121$$

II. $y = \sqrt{14641}$

$$\therefore y = 121$$

$$\therefore x \leq y$$

46. 3;

$$\begin{array}{cccccc} 17 & 19 & 33 & 67 & 129 & 227 \\ \hline +2^2-2 & +4^2-2 & +6^2-2 & +8^2-2 & +10^2-2 & \end{array}$$

47. 4;

$$\begin{array}{cccccc} 35 & 256 & 451 & 620 & 763 & 880 \\ \hline +221 & +195 & +169 & +143 & +117 & \\ \hline -26 & -26 & -26 & -26 & & \end{array}$$

48. 1;

$$\begin{array}{cccccc} 18 & 139 & 868 & 917 & 1042 & 1051 \\ \hline +11^2 & +9^3 & +7^2 & +5^3 & +3^2 & \end{array}$$

49. 2;

$$\begin{array}{cccccc} 2890 & 1738 & 1162 & 874 & 730 & 658 \\ \hline -1152 & -576 & -288 & -144 & -72 & \end{array}$$

50. 2;

$$\begin{array}{cccccc} 14 & 1004 & 1202 & 1251.5 & 1268 & 1276.25 \\ \hline +990 & +990 \div 5 & +198 \div 4 & +49.5 \div 3 & +16.5 \div 2 & \end{array}$$

51. 4; Number of days required = $\frac{6 \times 10}{10 - 6} = \frac{6 \times 10}{4} = 15$ days

52. 3;

$$\text{Sneha's monthly income} = \frac{342000}{12} = 28500$$

$$\therefore \text{Akriti's monthly income} = \frac{28500}{95} \times 116 = 34800$$

$$\text{Akriti's annual income} = 417600$$

53. 4; $\frac{3.36 \times 1000}{4 \times 7} = 120$ m

54. 2; Perimeter of the square = 56 cm

$$\therefore \text{Side of the square} = 14 \text{ cm}$$

$$\text{Perimeter of the rectangle} = \frac{56}{2} = 28 \text{ cm}$$

$$\text{or, } 2(1 + b) = 28$$

$$\text{or, } 9 + b = 14$$

$$\text{or, } b = 5 \text{ cm}$$

$$\therefore \text{Difference} = 14 - 5 = 9 \text{ cm}$$

$$55. 2; \text{ Time taken by the truck} = \frac{256}{32} = 8 \text{ hr}$$

$$\text{Distance covered by the car} = 256 + 160 = 416 \text{ km}$$

$$\text{Time} = 8 \text{ hr}$$

$$\therefore \text{Speed of the car} = \frac{416}{8} = 52 \text{ km/hr}$$

$$56. 3; \text{ Total distance covered by the man} = \text{perimeter of the square}$$

$$\text{or, } 39.6 \times \frac{5}{18} \times 80 = 880 \text{ m}$$

$$\therefore \text{Side of the square} = \frac{880}{4} = 220 \text{ m}$$

$$\therefore \text{Area of the field} = (220)^2 = 48400 \text{ sq m}$$

57. 2

$$58. 5; \text{ Largest fraction} = \frac{7}{9}$$

$$\text{Smallest fraction} = \frac{4}{7}$$

$$\therefore \text{Difference} = \frac{7}{9} - \frac{4}{7} = \frac{49 - 36}{63} = \frac{13}{63}$$

$$59. 4; \text{ Let the total number of children be } x.$$

$$\therefore (x - 80) \left(\frac{3200}{x} + 2 \right) = 3200$$

$$\text{or, } 2x^2 - 160x = 3200 \times 80$$

$$\text{or, } x^2 - 400x + 320x - 3200 \times 40$$

$$\text{or, } x(x - 400) + 320(x - 400)$$

$$\text{or, } x - 400 = 0$$

$$\text{or, } x = 400$$

$$60. 2; \text{ There are seven letters in the word "VIRTUAL".}$$

Therefore, number of different ways in which these letters can be arranged

$$= \underline{7} = 7 \times 6 \times 5 \times 4 \times 3 \times 2 = 5040$$

$$61. 2; \frac{2x}{15} + \frac{3x}{20} + \frac{x}{5} + \frac{2x}{15} + \frac{x}{20} + \frac{x}{4} + K = x$$

$$\therefore \frac{55x}{60} + K = x,$$

$$\therefore K = x - \frac{55x}{60} = \frac{5x}{60} = \frac{x}{12}$$

$$62. 1; \text{ Chemistry} = \frac{x}{5} + \frac{3x}{20} + \frac{x}{20} + \frac{x}{12} = \frac{29x}{60}$$

$$\text{Physics} = \frac{2x}{15} + \frac{3x}{20} + \frac{x}{20} + \frac{2x}{15} = \frac{7x}{15}$$

$$\therefore \text{Diff} = \frac{29x}{60} - \frac{7x}{15} = \frac{29x - 28x}{60} = \frac{x}{60}$$

$$\therefore \frac{x}{60} = 15 \quad \therefore x = 300$$

$$\text{So, diff} = \frac{x}{60} = \frac{300}{60} = 5$$

$$63. 4; \text{ Students who passed in exactly one paper} = \frac{2x}{15} + \frac{x}{5} + \frac{x}{4} = \frac{7x}{12}$$

$$\text{Students who passed in exactly two papers} = \frac{3x}{20} + \frac{2x}{15} + \frac{x}{12} = \frac{11x}{30}$$

$$\therefore \frac{11x}{30} = 110 \quad \therefore x = 300$$

$$\text{So, } \frac{7x}{12} = 175$$

$$64. 2; \text{ Students who passed in at least two papers} = \frac{3x}{20} + \frac{2x}{15} + \frac{x}{12} + \frac{x}{20} = \frac{5x}{12}$$

$$\text{Total number of students} = x$$

$$\therefore \text{Reqd \%} = \frac{5x/12}{x} \times 100 = \frac{125}{3} = 41\frac{2}{3}\%$$

$$65. 5; \text{ Students who passed in only Maths} = \frac{x}{4}.$$

$$\text{Students who passed in all three papers} = \frac{x}{20}$$

$$\therefore \text{Reqd \%} = \frac{\left(\frac{x}{4} - \frac{x}{20}\right)}{\frac{x}{20}} \times 100 = \frac{4x}{20} \times \frac{20}{x} \times 100 = 400\%$$

$$66. 3; \text{ Suppose they meet after 't' hrs.}$$

$$\therefore 50t - 37.5t = 400$$

$$\therefore t = \frac{400}{12.5} = 32 \text{ hrs}$$

$$\begin{aligned} \therefore \text{Distance between Delhi and Pune} &= 50t + 37.5t \\ &= 87.5t = 87.5 \times 32 = 2800 \text{ km} \end{aligned}$$

$$67. 2; \text{ Number of arrangements} = 6! \times 5! = 720 \times 120 = 86400$$

$$68. 3; n(s) = 36 \quad n(E) = 6$$

$$\therefore P(E) = \frac{6}{36} = \frac{1}{6}$$

$$\therefore \text{Possible combinations are } \{(4, 1) (1, 4) (5, 2) (2, 5) (6, 3) (3, 6)\} = 6$$

$$69. 3; \text{ From (I).}$$

$$B + C + D + 5 = 63 \times 4 = 252$$

$$\therefore A = 300 - 252 = 48$$

$$\text{From (II). } A = \frac{300}{5} \times \frac{80}{100} = 48$$

$$70. 4; \therefore x + y + z = 51 \text{ and } z - x = 4$$

Here, total number of variables is three but only two equations are given. So, to solve the questions, we need one more equations ie data are not sufficient.

(71-75): CGDEBAF

$$71. 1 \qquad 72. 4 \qquad 73. 4 \qquad 74. 5 \qquad 75. 2$$

$$76. 3 \qquad 77. 4 \qquad 78. 2$$

$$79. 1; \text{ 'Every company must'}$$

$$80. 5$$

$$81. 2; \text{ 'to provide'}$$

$$82. 4; \text{ Replace 'easier' with 'easily'}$$

$$83. 5 \qquad 84. 1 \qquad 85. 1 \qquad 86. 4 \qquad 87. 4$$

88.1
91.2
97.2

89.3
92.3
98.5

90.2
93.1
99.2

94.4
100.5

95.1

96.2



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