PRACTICE SET

15

QUANTITATIVE APTITUDE

DIRECTIONS (Qs. 1-10) : What will come in place of question mark (?) in the following questions ?

1. 48% of 525 + ?% of 350 = 399
   - (a) 42
   - (b) 46
   - (c) 28
   - (d) 26
   - (e) None of these

2. $\frac{3}{7}$ of $\frac{4}{5}$ of $\frac{5}{8}$ of 490 = ?
   - (a) 115
   - (b) 105
   - (c) 108
   - (d) 116
   - (e) None of these

3. $\sqrt{?} + 17^2 = 335$
   - (a) 46
   - (b) 42
   - (c) 1764
   - (d) 2116
   - (e) None of these

4. 125% of 560 + 22% of 450 = ?
   - (a) 799
   - (b) 700
   - (c) 782
   - (d) 749
   - (e) None of these

5. $\dfrac{28 \times 5 - 15 \times 6}{7^2 + \sqrt{256} + (13)^2} = ?$
   - (a) $\dfrac{27}{115}$
   - (b) $\dfrac{22}{117}$
   - (c) $\dfrac{25}{117}$
   - (d) $\dfrac{22}{115}$
   - (e) None of these

6. 18.76 + 222.24 + 3242.15 = ?
   - (a) 3384.15
   - (b) 3483.15
   - (c) 3283.25
   - (d) 3383.25
   - (e) None of these

7. 784 ÷ 16 ÷ 7 = ?
   - (a) 49
   - (b) 14
   - (c) 21
   - (d) 7
   - (e) None of these

8. $\frac{3}{2}$ of 455 + $\frac{5}{8}$ of 456 = ?
   - (a) 448
   - (b) 476
   - (c) 480
   - (d) 464
   - (e) None of these

9. 1.05% of 2500 + 2.5% of 440 = ?
   - (a) 37.50
   - (b) 37.25
   - (c) 370.25
   - (d) 372.50
   - (e) None of these

10. 4900 ÷ 28 × 444 ÷ 12 = ?
    - (a) 6575
    - (b) 6475
    - (c) 6455
    - (d) 6745
    - (e) None of these

11. What is the compound interest accrued on an amount of Rs 8500 in two years @ interest 10% per annum?
    - (a) ₹1875
    - (b) ₹1885
    - (c) ₹1775
    - (d) ₹1765
    - (e) None of these

12. A train running at the speed of 60 kmph crosses a 200 m long platform in 27 s. What is the length of the train ?
    - (a) 250m
    - (b) 200m
    - (c) 240m
    - (d) 450m
    - (e) None of these

13. 10 men can complete a piece of work in 8 days. In how many days can 16 men complete that work?
    - (a) 4 days
    - (b) 5 days
    - (c) 6 days
    - (d) 3 days
    - (e) None of these

14. If the numerator of a certain fractions increased by 100% and the denominator is increased by 200%; the new fraction thus formed is $\frac{4}{21}$. What is the original fraction?
    - (a) $\dfrac{2}{7}$
    - (b) $\dfrac{3}{7}$
    - (c) $\dfrac{2}{5}$
    - (d) $\dfrac{4}{7}$
    - (e) None of these

15. The ratio of the ages of A and B seven years ago was 3 : 4 respectively. The ratio of their ages nine years from now will be 7 : 8 respectively. What is B's age at present ?
(a) 16 years   (b) 19 years   (c) 28 years
(d) 23 years   (e) None of these

16. The perimeter of a square is thrice the perimeter of a rectangle. If the perimeter of the square is 84 cm and the length of the rectangel is 8 cm, what is the difference between the breadth of the rectangle and the sidce of the square?
(a) 15 cm   (b) 19 cm   (c) 10 cm
(d) 8 cm   (e) None of these

17. The area of a circle is equal to the area of a rectangel with perimeter equal to 42 m and breadth equal to 8.5 m. What is the area of the circle?
(a) 116.25 sq m   (b) 104.25 sq m   (c) 146.25 sqm
(d) 128.25 sq m   (e) None of these

18. The product of 5% of a positive number and 3% of the same number is 504.6 What is half of that number?
(a) 290   (b) 340   (c) 680
(d) 580   (e) None of these

19. 4 women and 12 children together take four days to complete a piece of work. How many days will four children alone take to complete the piece of work if two women alone can complete the piece of work in 16 days?
(a) 32   (b) 24   (c) 16
(d) 12   (e) None of these

20. Anu walks 2.31 km in three weeks by walking an equal distance each day. How many metres does she walk each day?
(a) 110 m   (b) 90 m   (c) 140 m
(d) 120 m   (e) None of these

21. A man riding a bicycle completes one lap of a square field along its perimeter at the speed of 43.2 km/hr in 1 minute 20 seconds. What is the area of the field?
(a) 52900 sq m   (b) 57600 sq m   (c) 48400 sq m
(d) Can't be determined
(e) None of these

22. On Teacher's Day, 4800 sweets were to be equally distributed among a certain number of children. But on that particular day 100 children were absent. Hence, each child got four sweets extra. How many children were originally supposed to be there?
(a) 300   (b) 400   (c) 540
(d) 500   (e) Can't be determined.

23. The ratio of the monthly oncomes of Sneha, Tina and Akruti is 95:110:116. If Sneha's annual income is ₹3,42,000, what is Akruit's annual income?
(a) ₹3,96,900   (b) ₹5,63,500   (c) ₹4,17,600
(d) ₹3,88,000   (e) None of these

24. A truck covers a distance of 256 km at the speed of 32 km/hr. What is the average speed of a car which travels a distance of 160 km more than the truck in the same time?
(a) 46 kmh^{-1} (b) 52 kmh^{-1} (c) 49 kmh^{-1}
(d) 64 kmh^{-1} (e) None of these

25. In an examination, the maximum aggregate marks is 1020. In order to pass the exam a student is required to obtain 663 marks out of the aggregate marks. Shreya obtained 612 marks. By what per cent did Shreya fail the exam?

(a) 5%   (b) 8%   (c) 7%
(d) Can't be determined
(e) None of these

DIRECTIONS (Qs. 26-30): Study the following information and answer the questions that follow :

The premises of a bank are to be renovated. The renovation is in terms of flooring. Certain areas are to be floored either with marble or wood. All rooms/halls and pantry are rectangular. The area to be renovated comprises of a hall for customer transaction measuring 23 m by 29 m, branch manager's room measuring 13 m by 17 m, a pantry measuring 14 m by 13 m, a record keeping cum server room measuring 21m by 13 m and locker area measuring 29 m by 21 m. The total area of the bank is 2000 square meters. The cost of wooden flooring is ₹ 170/- per square meter and the cost of marble flooring is ₹ 190/- per square meter. The locker area, record keeping cum server room and pantry are to be floored with marble. The branch manager's room and the hall for customer transaction are to be floored with wood. No other area is to be renovated in terms of flooring.
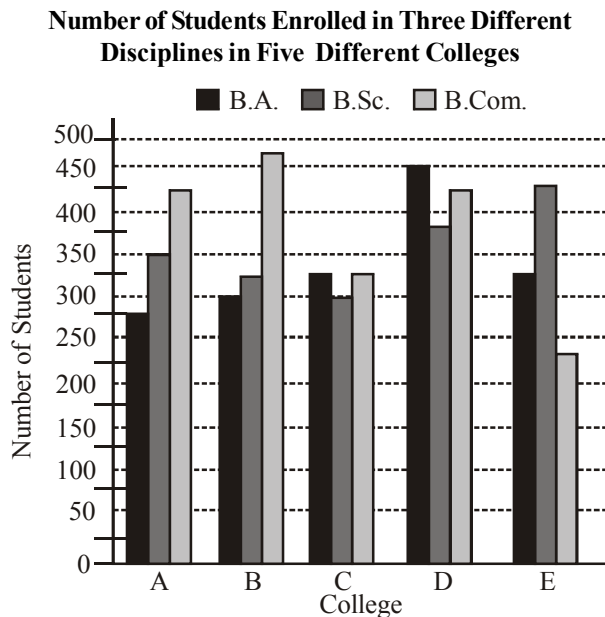
26. What is the respective ratio of the total cost of wooden flooring to the total cost of marble flooring ?
(a) 1879 : 2527   (b) 1887 : 2386
(c) 1887 : 2527   (d) 1829 : 2527
(e) 1887 : 2351

27. If the four walls and ceiling of the branch managers room (The height of the room is 12 meters) are to be painted at the cost of ₹ 190/- per square meter, how much will be the total cost of renovation of the branch manager's room including the cost of flooring ?
(a) ₹ 1,36,800/-   (b) ₹ 2,16,660/-
(c) ₹ 1,78.790/-   (d) ₹ 2,11,940/-
(e) None of these

28. If the remaining area of the bank is to be carpeted at the rate of ₹ 110/- per square meter, how much will be the increment in the total cost of renovation of bank premises ?
(a) ₹ 5,820/-   (b) ₹ 4,848/-
(c) ₹ 3,689/-   (d) ₹ 6,890/-
(e) None of these

29. What is the percentage area of the bank that is not to be renovated ?
(a) 2.2   (b) 2.4
(c) 4.2   (d) 4.4
(e) None of these

30. What is the total cost of renovation of the hall for customer transaction and the locker area ?
(a) ₹ 2,29,100/-   (b) ₹ 2,30,206/-
(c) ₹ 2,16,920/-   (d) ₹ 2,42,440/-
(e) None of these

DIRECTIONS (Qs. 31-35) : What should come in place of question mark (?) in the following number series?

31. 8   52   ?   1287   4504.5   11261.25   16891.875
(a) 462   (b) 286   (c) 194
(d) 328   (e) None of these

32. 3 42 504 ? 40320 241920 967680
   (a) 6048   (b) 5544   (c) 4536
   (d) 5040   (e) None of these

33. 403 400 394 382 358 310 ?
   (a) 244   (b) 210   (c) 214
   (d) 256   (e) None of these

34. 7 8 4 13 –3 22 ?
   (a) –7   (b) –10   (c) –12
   (d) –14   (e) None of these

35. 250000 62500 12500 3125 625 ? 31.25
   (a) 156.25   (b) 172.25   (c) 125
   (d) 150   (e) None of these

DIRECTIONS (Q. 36-40) : Study the following graph carefully to answer the questions that follow:

Number of Students Enrolled in Three Different Disciplines in Five Different Colleges

Legend: ■ B.A.   ■ B.Sc.   □ B.Com.

36. What is the total number of students studying B.Sc in all Colleges together?
   (a) 1825   (b) 1975
   (c) 1650   (d) 1775
   (e) None of these

37. What is the respective ratio of total number of students studying B.Sc. in the colleges C and E together to those studying B.A. in the Colleges A and B together?
   (a) 24 : 23   (b) 25 : 27
   (c) 29 : 23   (d) 29 : 27
   (e) None of these

38. What is the respective ratio of total number of students studying B.Sc., B.A. and B.Com. in all the Colleges together?
   (a) 71 : 67 : 75   (b) 67 : 71 : 75
   (c) 71 : 68 : 75   (d) 75 : 71 : 68
   (e) None of these

39. Number of students studying B.Com. in College C forms **approximately** what percent of the total number of students studying B.Com. in all Colleges together?
   (a) 39   (b) 21
   (c) 44   (d) 33
   (e) 17

40. Number of students studying B.A in College B forms what percent of total number of students studying all the disciplines together in that College? (rounded off two digits after decimal)
   (a) 26.86   (b) 27.27
   (c) 29.84   (d) 32.51
   (e) None of these

REASONING ABILITY

DIRECTIONS (Qs. 41-45) : Study the following information carefully and answer the questions carefully :

Five experts on Nino-technology involved in an international Research Project hold a Quarterly Review Meeting in Singapore. There are certain limitations on their language skills. Expert R1 knows only Japanese and Hindi; R2 is good at Japanese and English; R3 is good at English and Hindi; R4 knows French and Japanese quite well, and R5, an Indian, knows Hindi, English, and French.

41. Besides R5, which of the following can converse with R4 without an interpreter?
   (a) Only R1   (b) Only R2
   (c) Only R3   (d) Both R1 and R2
   (e) None of these

42. Which of the following cannot converse without an interpreter?
   (a) R2 and R5   (b) R1 and R2
   (c) R1 and R3   (d) R3 and R4
   (e) None of these

43. Choose the language that is least commonly used at the meeting.
   (a) English   (b) French
   (c) Japanese   (d) Hindi
   (e) None of these

44. Which of the following can act as an interpreter when R3 and R4 wish to discuss?
   (a) Only R1   (b) Only R2
   (c) Only R5   (d) All of the above
   (e) None of these

45. Suppose a sixth Expert R6 joins the session. Which are the languages that he should know so that a maximum number of original experts are able to understand him?
   (a) English and French
   (d) Japanese and Hindi
   (c) English and Hindi
   (d) French and Japanese
   (e) None of these

DIRECTIONS (Qs. 46-48): Study the following information carefully and answer the questions carefully :

In the English alphabet, letters from A to M denote numeric values from 1 to 13 (such that A is 1, B is 2, … … …) and letters from N to Z denote numeric values from -13 to -1 (such that N is -13, O is -12, … … …).

46. The numeric value of which of the following equations will be a whole number?
   (a) KISS/RAPP   (b) HIS/HELL
   (c) HISS/YOUR   (d) KISS/HELL
   (e) None of these

47. Assuming that the salaries are basically coded with the help of employee names using the code given above, who among the following will be drawing the highest salary?
    - (a) PREM
    - (b) SHAN
    - (c) RAMU
    - (d) RHAN
    - (e) None of these

48. Following the above mentioned code, which of the following will be true?
    - (a) GS - TSZ = 0
    - (b) PRO = DLW
    - (c) ROD = YET
    - (d) ROD = DLW
    - (e) None of these

DIRECTIONS (Qs. 49-53): Study the following information carefully and answer the questions carefully :

In a Public Sector Undertaking Township, there are five executives - Ambrish, Amit, Rohit, Manu and Tarun and they stay in five different flats, numbered 1 to 5.

1. Two of them play Cricket while the other three play different games viz. Football, Tennis and Chess.
2. One Cricket player and a Chess player stay in the third flat, whereas the other three stay in different flats, i.e. 2nd, 4th and 5th.
3. Two of these five players are mechanical engineers while the other three are quality inspector, design engineer, and power engineer respectively.
4. The chess player is the oldest in age while one of the cricket players, who plays at the national level, is the youngest in age.
5. The age of the other cricket player, who plays at the regional level, lies between the football player and the chess player.
6. Manu is a regional level player and stays in the 3rd flat while Tarun is a quality inspector and stays in the 5th flat.
7. The football player is a design engineer and stays in the 2nd Flat.
8. Amit is a power engineer and plays Chess while Ambrish is the mechanical engineer and plays Cricket at the national level.

49. Who stays in the 4th flat?
    - (a) Ambrish
    - (b) Amit
    - (c) Rohit
    - (d) Manu
    - (e) None of these

50. Which sport does Tarun play?
    - (a) Chess
    - (b) Football
    - (c) Cricket
    - (d) Tennis
    - (e) None of these

51. Who plays football?
    - (a) Ambrish
    - (b) Amit
    - (c) Rohit
    - (d) Manu
    - (e) None of these

52. Who stay in the same flat?
    - (a) Ambrish and Amit
    - (b) Maim and Tarun
    - (c) Amit and Manu
    - (d) Rohit and Tarun
    - (e) None of these

53. The Chess player is a:
    - (a) Power engineer
    - (b) Mechanical Engineer
    - (c) Design engineer
    - (d) Quality inspector
    - (e) None of these

DIRECTIONS (Qs. 54-56) : Study the information given below carefully to answer the following questions.

In a certain code language the following lines written as:
'lop eop aop fop' means 'Traders are above laws'
'fop cop bop gop' means 'Developers were above profitable'
'aop bop uop qop' means 'Developers stopped following traders'
'cop jop eop uop' means 'Following maps were laws'

54. 'Developers are following laws' would be correctly written as
    - (a) 'bop cop uop eop'
    - (b) 'lop bop eop uop'
    - (c) 'oup cop lop aop'
    - (d) 'gop cop uop qop'
    - (e) None of these

55. 'qop gop cop eop' would correctly mean
    - (a) profitable laws were stopped
    - (b) developers stopped following laws
    - (c) traders were above profitable
    - (d) were laws profitable traders
    - (e) None of the above

56. 'aop qop bop' would correctly mean
    - (a) following were above
    - (b) traders stopped developers
    - (c) developers are laws
    - (d) traders above stopped
    - (e) laws are stopped

DIRECTIONS (Qs. 57-61) : In each of the questions below are given four statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from 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.

57. Statements: All petals are flowers. Some flowers are buds. Some buds are leaves. All leaves are plants.
    Conclusions: I. Some petals are not buds.
    II. Some flowers are plants.
    III. No flower is plant.
    - (a) Only I follows
    - (b) Either II or III follows
    - (c) I and II follow
    - (d) Only III follows
    - (e) None of the above

58. Statements: Some pens are keys. Some keys are locks. All locks are cards. No card is paper
    Conclusions:
    I. No lock is paper.
    II. Some cards are keys.
    III. Some keys are not paper.
    - (a) I and II follow
    - (b) Only I follows
    - (c) Only II follows
    - (d) All follow
    - (e) None follows

59. Statements: Some pearls are gems. All gems are diamonds. No diamond is stone. Some stones are corals.
    Conclusions:
    I. Some stones are pearls.
    II. Some corals being diamond is a possibility.
    III. No stone is pearl.
    - (a) Only I follows
    - (b) Only II follows
    - (c) Either I or III follows
    - (d) I and II follow
    - (e) None of these

60. Statements: Some apartments are flats. Some flats are buildings. All buildings are bungalows. All bungalows are gardens.
Conclusions:
I. All apartments being building is a possibility
II. All bungalows are not buildings.
III. No flat is garden.
(a) None follows   (b) Only I follows
(c) Either I or III follows   (d) II and III follow
(e) Only II follows

61. Statements: All chairs are tables. All tables are bottles. Some bottles are jars. No jar is bucket.
Conclusions:
I. Some tables being jar is a possibility.
II. Some bottles are chairs.
III. Some bottles are not bucket.
(a) Only I follows   (b) I and II follow
(c) All follow   (d) Only II follows
(e) None of these

DIRECTIONS (Qs. 62-66) : In these questions the symbols @. #, $, % and ★ are used with different meanings as follow.

'A @ B' means 'A is not smaller then B'.
'A # B' means 'A is neither smaller than nor equal to B'.
'A $ B' means 'A is neither greater than nor smaller than B'.
'A % B' means 'A is not greater than B'.
'A ★ B' means 'A is neither greater than nor equal to B'.
In each questions, four statements showing relationships have been given, which are followed by three conclusions I, II and III. Assuming that the given statements are true, find out which conclusion (s) is/are definitely true?

62. Statements: V $ Y, Y @ Z, Z % X, X # T
Conclusions:
I. T # Z   II. X # Y
III. Z ★ Y
(a) None follows   (b) Only I follows
(c) II and III follow   (d) I and III follow
(e) Only III follows

63. Statements: R @ J, J % F, F ★ E, E % M
Conclusions:
I. M # J   II. F % M
III. M ★ R
(a) Only I follows   (b) Only II follows
(c) Only III follows   (d) I and II follow
(e) All follow

64. Statements: H#R, R@L, L ★ W, W%F
Conclusions:
I. H # J   II. F # L
III. H $ F
(a) Only I follows   (b) I and II follow
(c) II and III follow   (d) Either I or II follows
(e) All follow

65. Statements: M # K, M $ F, F % Q, Q ★ H
Conclusions:
I. H # K   II. Q # K
III. Q @ M
(a) I and II follow   (b) Either I or II follows
(c) All follow   (d) II and III follow
(e) None of the above

66. Statements: D ★ Q, Q $ L, L # T, T % H
Conclusions:
I. D ★ L
II. L @ H
III. H # L
(a) Only I follows   (b) I and II follow
(c) Either II or III follows   (d) All follow
(e) None follow

DIRECTIONS (Qs. 67-71) : Each of the questions below consists of a question and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and

Give answer:
(a) If the data is Statements I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question
(b) If the data in Statement II alone are sufficient to answer the question, while the date in Statement I alone are not sufficient to answer the question
(c) If the data in Statement I alone or in Statement II alone is sufficient to answer the question
(d) If the data in both the Statements I and II are not sufficient to answer the question
(e) If the data in both the Statements I and II together are necessary to answer the question

67. How many children are there in the group if no two children have same weight?
Statements:
I. Sahil is fifth from the top in order of weight if all the children in the group were arranged in descending order.
II. Ramesh, who in heavier than 14 children in the group is immediately next to Sahil in weight.

68. What is the code for 'healthy' in the code language?
Statements:
I. In the code language eat healthy food' is written as 'ka ma re'.
II. In code language 'food for healthy people' is written as 'ta ma jo re'.

69. How many brothers does 'H' have?
Statements:
I. 'H' is sister of 'K' who is son of 'T'.
II. T is mother of 'K' who is brother of 'H'.

70. Who among J, T, W, R and Q reached the office first?
Statements:
I. J reached before Q, R and T but after W.
II. Q reached before R but after W.

71. Village 'F' is in which direction with respect to village 'K'?
Statements:
I. Village 'J' is to the East of village 'F' and to the North of village 'K'.
II. Village 'R', which is to the South of village 'F' is to the West of village 'K'.

DIRECTIONS (Qs. 72-75) : Read the following passage carefully and answer the Question given below it.

Six friends Abhishek, Deepak, Mridul, Pritam, Ranjan and Salil married within a year in the months of February, April, July, September, November and December and in the cities of Ahmedabad, Bengaluru, Chennai, Delhi, Mumbai and Kolkata, but not necessarily following the above order. The brides' names were Geetika, Jasmine, Hema, Brinda, Ipsita and Veena, once again not following any order. The following are some facts about their weddings.

(i) Mridul's wedding took place in Chennai, however he was not married to Geetika or Veena

(ii) Abhishek's wedding took place in Ahmedabad and Ranjan's in Delhi; however neither of them was married to Jasmine or Brinda

(iii) The wedding in Kolkata took place in February

(iv) Hema's wedding took place in April, but not in Ahmedabad

(v) Geetika and Ipsita got married in February and November and in Chennai and Kolkata but not following the above order

(vi) Pritam visited Bengaluru and Kolkata only after his marriage in December

(vi) Salil was married to Jasmine to September

72. Hema's husband is
    (a) Abhishek   (b) Deepak
    (c) Ranjan   (d) Pritam
    (e) Mridul

73. Deepak's wedding took place in
    (a) Bengaluru   (b) Mumbai
    (c) Kolkata   (d) Delhi
    (e) Chennai

74. In Mumbai, the wedding of one of the friends took place in the month of
    (a) April   (b) September
    (c) November   (d) December
    (e) July

75. Salil's wedding was held in
    (a) Bengaluru   (b) Chennai
    (c) Kolkata   (d) Delhi
    (e) Mumbai

DIRECTIONS (Qs. 76-80): In each question below is given statement followed by two courses of action numbered I and II. 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.

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

76. **Statement :** Cases of road accidents are increasing constantly, particularly in the urban areas.
    Courses of action :
    I. Transport authorities in the urban areas should impose stringent norms for maintenance of vehicles.
    II. Traffic police should severely punish those found to be violating traffic rules.

77. **Statement :** Despite good economic progress of the country, significant number of undernourished children has been observed in the rural parts of the country.
    Courses of action :
    I. Govt should increase Wealth Tax / Income tax and use that money for upliftment of the deprived class.
    II. Govt should introduce schemes like free meals in primary schools and make primary education compulsory.

78. **Statement :** Launching of new brands of four-wheelers is adding to the traffic congestion in the metro cities.
    Courses of action :
    I. Public should be encouraged to share their private vehicles while travelling to their work places.
    II. Govt. should levy heavy taxes on motor cars in metro cities.

79. **Statement :** Increasing levels of air pollution is creating health hazards for people living in the cities.
    Courses of action :
    I. All industries should be shifted to the outskirts of the cities.
    II. Transport authorities should take steps for converting all public transport vehicles to run on CNG.

80. **Statement :** Large number of college students are found to be focusing more on fashion than on studies.
    Courses of action :
    I. Colleges should impose restrictions on use of fashionable clothes and accessories.
    II. Colleges should keep the students busy enough with studies, so that they don't find time for other things like fashion.

HINTS & EXPLANATIONS

1.   (a)   48 % of 525 + ? % of 350 = 399

$$\Rightarrow \quad \frac{48}{100} \times 525 + \frac{?}{100} \times 350 = 399$$

$$\Rightarrow \quad 25200 + ? \times 350 = 399 \times 100$$

$$\Rightarrow \quad ? \times 350 = 39900 - 25200 = 14700$$

$$\Rightarrow \quad ? = \frac{14700}{350} = 42$$

2. (b) $? = \dfrac{3}{7}$ of $\dfrac{4}{5}$ of $\dfrac{5}{8}$ of 490

$\Rightarrow \quad ? = \dfrac{3}{7} \times \dfrac{4}{5} \times \dfrac{5}{8} \times 490$

$\Rightarrow \quad ? = 35 \times 3 = 105$

3. (d) $\sqrt{?} + 17^2 = 335$

$\Rightarrow \quad \sqrt{?} + 289 = 335$

$\Rightarrow \quad \sqrt{?} = 335 - 289 = 46$

$\Rightarrow \quad ? = 46 \times 46 = 2116$

4. (a) $? = 125\%$ of $560 + 22\%$ of 450

$\Rightarrow \quad ? = \dfrac{125}{100} \times 560 + \dfrac{22}{100} \times 450$

$\Rightarrow \quad ? = 700 + 99 = 799$

5. (c) $? = \dfrac{28 \times 5 - 15 \times 6}{7^2 + \sqrt{256} + (13)^2}$

$\Rightarrow \quad ? = \dfrac{140 - 90}{49 + 16 + 169}$

$\Rightarrow \quad ? = \dfrac{50}{234} = \dfrac{25}{117}$

6. (b) $? = 18.76 + 222.24 + 3242.15$

$\Rightarrow \quad ? = 3483.15$

7. (d) $? = 784 \div 16 \div 7$

$\Rightarrow \quad ? = \dfrac{784}{16} \div 7$

$\Rightarrow \quad ? = 49 \div 7 = 7$

8. (c) $? = \dfrac{3}{7}$ of $455 + \dfrac{5}{8}$ of 456

$\Rightarrow \quad ? = \dfrac{3}{7} \times 455 + \dfrac{5}{8} \times 456$

$\Rightarrow \quad ? = 195 + 285$

$\Rightarrow \quad ? = 480$

9. (b) $? = 1.05\%$ of $2500 + 2.5\%$ of 440

$\Rightarrow \quad ? = \dfrac{1.05}{100} \times 2500 + \dfrac{2.5}{100} \times 440$

$\Rightarrow \quad ? = \dfrac{2625}{100} + \dfrac{1100}{100}$

$\Rightarrow \quad ? = \dfrac{3725}{100} = 37.25$

10. (b) $? = 4900 \div 28 \times 444 \div 12$

$\Rightarrow \quad ? = 175 \times 37$

$\Rightarrow \quad ? = 6475$

11. (e) Compound Interest after two years

$= 8500 \left(1 + \dfrac{10}{100}\right)^2 - 8500$

$= 10285 - 8500 = ₹\,1785$

12. (a) Let length of the train be x m

Speed of the train be 60 km/h $= 60 \times \dfrac{5}{18} = \dfrac{50}{3}$ m/s

Then, $\dfrac{x + 200}{\frac{50}{3}} = 27$

$\Rightarrow \quad x = \dfrac{750}{3} = 250$ m

13. (b) Suppose 16 men can complete the same work in x days
Then, Men days

$16 : 10 :: 8 : x$

$\Rightarrow \quad 16 \times x = 10 \times 8$

$\Rightarrow \quad x = \dfrac{10 \times 8}{16} = 5$ days

14. (a) Let the original fraction be $= \dfrac{x}{y}$.

$\therefore \dfrac{x \times 200}{y \times 300} = \dfrac{4}{21} \Rightarrow \dfrac{x}{y} = \dfrac{4}{21} \times \dfrac{3}{2} = \dfrac{2}{7}$

15. (d) Let the present age of A $= x$ and B $= y$ years
According to first condition

$\dfrac{x-7}{y-7} = \dfrac{3}{4} \Rightarrow 4x - 28 = 3y - 21 \Rightarrow 4x - 3y = 7$ .... (i)

According to second condition

$\dfrac{x+9}{y+9} = \dfrac{7}{8} \Rightarrow 8x + 72 = 7y + 63$

$\Rightarrow 7y - 8x = 9$ .... (ii)

$8x - 6y = 14$

$\underline{7y - 8x = 9}$

$y = 23$ years.

16. (a) Perimeter of the square = 84 cm
Perimeter of the rectangle = 28 cm
Perimeter of the rectangle = 2(1 + b)
or, 2(8 + b) = 28 cm
or, b = 14 − 8 = 6 cm.
∴ Breadth of the rectangle = 6 cm

Side of the square $= \dfrac{84}{4} = 21$ cm

Difference = 21 − 6 = 15 cm.

17. (e) Perimeter of the rectangle = 42 m
2(l + b) = 42 m
or, l + 8.5 = 21 m
or, l = 12.5 m.
Area of the rectangle = 12.5 × 8.5 = 106.25 sq.m.
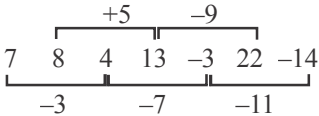∴ Area of the circle. = 106.25 sq.m.

18. (d) Let the positive number be x.

Then, $\dfrac{5x}{100} \times \dfrac{3x}{100} = 504.6$

or, $x^2 = \dfrac{504.6 \times 100 \times 100}{15}$

∴ x = 580.

19. (b) Two women alone can complete a piece of work in 16 days.

∴ Four women can complete the same work in 8 days.
Since 12 children can complete the work in

$\dfrac{4 \times 8}{8 - 4} = \dfrac{4 \times 8}{4} = 8$ days.

∴ Four children can complete the work in $\dfrac{12 \times 8}{4}$

= 24 days.

20. (a) 2.31 km = 2.31 × 1000 = 2310 m
Total number of days = 3 × 7 = 21

∴ Distance covered by Anu each day = $\dfrac{2310}{21} = 110$ m.

21. (b) 43.2 m/hr = $43.2 \times \dfrac{5}{18} = 12$ m/s
Total distance covered = 12 × 80 = 960 m.
Perimeter of the square = 960 m.
Side of the square = 240 m.
Area = (240)^2 = 57600 sqm.

22. (b) Let the number of children be x.
Now, according to the question

$\left(\dfrac{4800}{x} - 100\right)(x + 4) = 4800$

or, $\left(\dfrac{48}{x} - 1\right)(x + 4) = 48$

or, $(x + 16)(x - 12) = 0$
∴ x = 12 sweets

Number of students = $\dfrac{4800}{12} = 400$.

23. (c) Sneha's monthly income = $\dfrac{342000}{12} = 28500$

∴ Akruti's monthly income = $\dfrac{28500}{95} \times 116 = 34800$

Akruti's annual income = 417600.

24. (b) Time taken by the truck = $\dfrac{256}{32} = 8$ hr.
Distance covered by the car = (256 + 160) = 416 km.
Time = 8 hr.

∴ Speed of the car = $\dfrac{416}{8} = 52$ km / hr.

25. (a) Required percentage = $\dfrac{663 - 612}{1020} \times 100 = 5\%$.

26. (c) Area of customer transaction room = 23m × 29m = 667 sq.m
Area of branch manager room = 13m × 17 m = 221 sq. m
Area of Pantry room = 14m × 13m = 182 sq. m
Area of Server room = 21m × 13m = 273 sq. m
Area of locker room = 29 m × 21 m = 609 sq. m
Total cost of wooden flooring = ₹ [(170 × (667 + 221)]
= ₹ (888 × 170)
Total cost of marble flooring
= ₹ [(190 × (182 + 273 + 609)] = ₹ (190 × 1064)
Required Ratio = 888 × 170 : 1064 × 190 = 1887 : 2527

27. (c) Area of 4 walls and ceiling of branch managers room
= 2 (lh + bh) + lb = 2 [17 × 12 + 13 × 12] + 13 × 17
= 941 sq. m
Total cost of renovatin = ₹190 × 941 = ₹178790

28. (e) Total area of bank is 2000 sq. m
Total area of bank to be renovated = 1952 sq. m
Remaining Area = 2000 – 1952 = 48 sq. m
Total cost Remaining Area to be carpeted at the rate of
₹110/sq. meter = ₹(48 × 110) = ₹5280

29. (b) percentage area of bank not to be renovated

⇒ $\dfrac{\text{Area bank not be renovated}}{\text{Total area of bank}}$ ⇒ $\dfrac{48}{2000} \times 100 = 2.4\%$

30. (a) Total cost of hall of customer transaction
= ₹(170 × 667) = ₹113,390
Total cost of Locker area = ₹(190 × 609) = ₹115710
Total cost of customer transaction hall + locker area
= ₹(113390 + 115710) = ₹229100

31. (b) 8 × 6.5 = 52

52 × 5.5 = $\boxed{286}$

286 × 4.5 = 1287.

32. (d) 3 × 14 = 42
42 × 12 = 504

504 × 10 = $\boxed{5040}$

5040 × 8 = 40320.

33. (c) 403 – 3 = 400
400 – 6 = 394
394 – 12 = 382
382 – 24 = 358
358 – 48 = 310

310 – 96 = $\boxed{214}$.

34. (d)
```
        +5        −9
   ┌────────┐ ┌─────────┐
 7   8   4   13  −3   22  −14
 └────────┘ └────────┘ └────────┘
     −3       −7        −11
```

35. (a) 250000 ÷ 4 = 62500
62500 ÷ 5 = 12500
12500 ÷ 4 = 3125
3125 ÷ 5 = 625

625 ÷ 4 = $\boxed{156.25}$

156.25 ÷ 5 = 31.25.

36. (d) Total number of students studying B.Sc. in all the colleges together
= 350 + 325 + 300 + 375 + 425 = 1775

37. (c) Total number of students studying B.Sc. in colleges C and E
= 300 + 425 = 725
Total number of students studying B.A. in colleges A and B
= 275 + 300 = 575
∴ Required ratio = 725 : 575 = 29 : 23

38. (a) Total number of students studying in different streams in all the colleges:
B.Sc. → 1775
B.A. → 275 + 300 + 325 + 450 + 325 = 1675
B.Com. → 425 + 475 + 325 + 425 + 225 = 1875
∴ Required ratio = 1775 : 1675 : 1875 = 71 : 67 : 75

39. (e) Number of students studying B. Com. in college C = 325
Total number of students studying B. Com = 1875

∴ Required percentage = $\dfrac{325}{1875} \times 100 \approx 17$

40. (b) Total number of students in college
B = 300 + 325 + 475 = 1100
Number of students studying B.A. in college B = 300
∴ Required percentage = $\frac{300}{1100} \times 100 = 27.27$

Sol. (41-45) :
From the given information, following table can be build:

	Japanese	Hindi	English	French
R1	yes	yes	no	no
R2	yes	no	yes	no
R3	no	yes	yes	no
R4	yes	no	no	yes
R5	no	yes	yes	yes

41. (d) 42. (d) 43. (b) 44. (d)
45. (b) 46. (d) 47. (a) 48. (a)

Sol. (49–53) :

Game	Profession	Name	Flat number
Tenis	Quality Inspector	Tarun	5
Cricketer (National)	Mechanical Engg	Ambrish	4
Chess	Power Engg.	Amit	3
Cricket (regional)	Mechanical Engg.	Manu	3
Football	Design Engg.	Rohit	2

49. (a) 50. (d) 51. (c) 52. (c) 53. (a)

Sol. (54-56):
lop eop aop fop - Traders are above laws → (i)
fop cop bop gop - Developers were above profitable → (ii)
aop bop uop qop - Developers stopped following traders → (iii)
cop job cop uop - Following maps were laws → (iv)
From (i) and (ii), fop - above
From (i) and (iii), aop - traders
From (ii) and (iii), bop - developers
From (ii) and (iv), cop - were
From (iii) and (iv), uop - following
From (i) and (iv), eop - laws
Therefore, remaining codes are
lop - are   [from (i)]
gop - profitable   [from (ii)]
qop - stopped   [from (iii)]
jop - maps   [from (iv)]

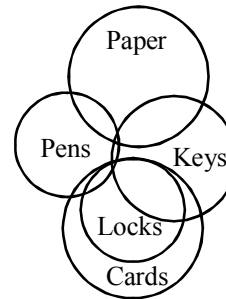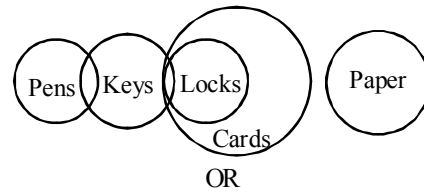54. (b) 55. (a) 56. (b)
57. (b) According to question,
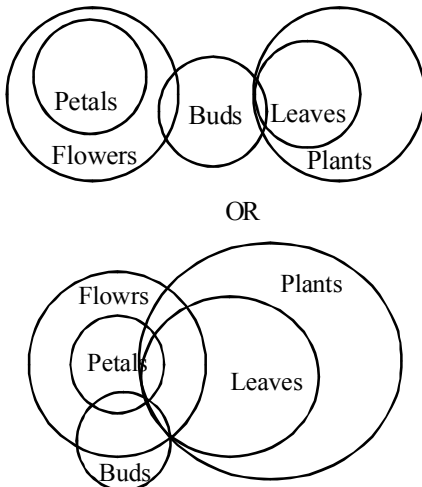
Conclusions I. false
II. false ⎤ or
III. false ⎦
Hence, only either II or III follows.
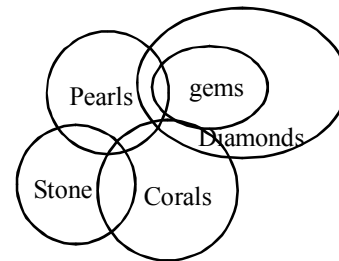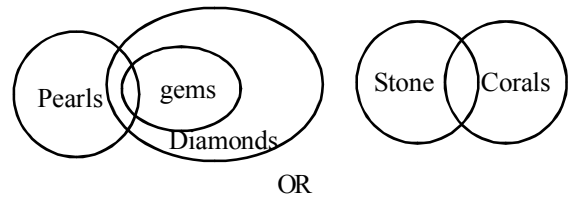
58. (d) According to question

OR

Conclusions I. True
II. True
III. True
Hence, All conclusions follow.
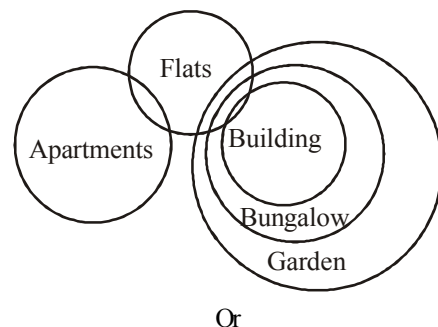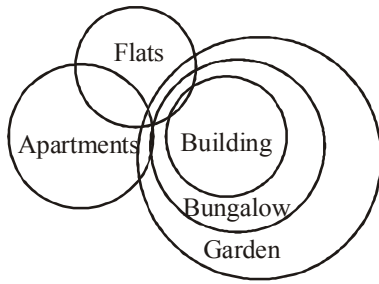
59. (e) According to question,

OR

I. False ⎤
Conclusion II. True ⎥ or
III.False ⎦
Hence, only conclusions II and either I or III follow.
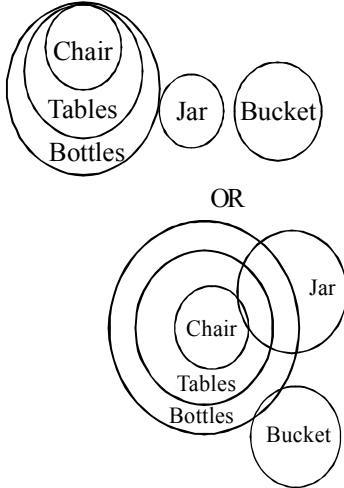
60. (a) According to question,

Or

Conclusions I. True, II. False, III. False
Hence, only conclusion I follows.

61. (c) According to question,

OR

Conclusions, I. True, II. True, III. True.
Hence, All I, II and III follow.

(62-66) :

★⇒<	# ⇒>	@ ⇒≥
% ⇒≤	$ ⇒=	

62. (a) V$Y ⇒ V = Y

Y @ Z ⇒ Y ≥ Z

Z % X ⇒ Z ≤ X

X # T ⇒ X > T

From all above statements,

V = Y ≥ Z ≤ X > T

Conclusions I. T # Z ⇒ T > Z (False)

II.   X # Y ⇒ X > Y (False)

III.   Z ★ Y ⇒ Z < Y (False)

63. (a) R @ J ⇒ R ≥ J

J % F ⇒ J ≤ F

F ★ E ⇒ F < M

E % M ⇒ E ≤ M

From all above statements, R ≥ J ≤ F < E ≤ M

Conclusions I: M # J ⇒ M > J (True)

II.   F % M ⇒ F ≤ M (False)

III.   M ★ R ⇒ M < R (False)

64. (b) H # R ⇒ H > R

R @ L ⇒ R ≥ L

L ★ W ⇒ L < W

W % F ⇒ W ≤ F

From all above statements, H > R ≥ L < W ≤ F

Conclusions I. H # L ⇒ H > L   (True)

II.   F # L ⇒ F > L   (True)

III.   H $ F ⇒ H = F   (False)

65. (e) M # J ⇒ M > F

M $ F ⇒ M = K

F % Q ⇒ F ≤ Q

Q ★ H ⇒ Q < H

From all above statements,

K < M = F ≤ Q < H

Conclusions. I. H # K ⇒ H > K (True)

II.   Q # K ⇒ Q > K   (True)

III.   Q @ M ⇒ Q ≥ M   (True)

66. (e) D ★ Q ⇒ D < Q

Q $ L ⇒ Q = L

L # T ⇒ L > T

T % H ⇒ T ≤ H

From all above statemens,

D < Q = L > T ≤ H

Conclusions. I. D ★ L ⇒ D < L   (True)

II.   L @ H ⇒ L ≥ H   (False)

III.   H # L ⇒ H > L   (False)

67. (e) From statements (I) and (II)
According to weight, the position of Sahil is 5th.
According to weight, the position of Ramesh is 5th.
So, the number of children in group = 5 + 15 = 20
So, both statements are required to given the answer.

68. (d) From statement I,
eat healthy food → Ka ma re
From statement II.
food for healthy people → ta ma jo re
So, from both statements, code of 'healthy' can not be determined exactly but it may be 'ma' or 're'.

69. (c)

70. (a) From statement (I). W > J > (Q, R, T)
So, W reached office first.
From statement (II), (J, T) > W > Q > R
It is not clear from statement (II) that who reached the office first either J or T.
So, for giving the answer. Statement I is sufficient but statement II is not sufficient.

71. (c)

Sol. (72-75)

	Mridul	**Abhishek**	**Ranjan**	**Salil**	**Deepak**	**Pritam**
Place	Chennai	Ahmedabad	Delhi	Bengaluru	Kolkata	Mumbai
Month	November	July	April	September	February	December
Brides	Ipsita	Veena	Hema	Jasmine	Geetika	Brinda

72. (c)   73. (c)   74. (d)   75. (a)

76. (b) Poor maintenance of vehicles may lead to pollution but is seldom a cause of accident. Hence I does not follow. But II follows as violation of traffic rules is the chief culprit in the case of accidents.

77. (e) I follows because providing nourishment to children needs money. II follows because compulsory meals are likely to provid enourishment.

78. (a) I follows as car pooling helps decongest traffic. But II does not follow as this may have impact on overall sales. It is like throwing away the baby with the bathwater.

79. (d) Neither follows because we do not know the cause of pollution.

80. (d) I does not follow because restriction cannot change inclination II does not follow because & inclination cannot be changed.