

PRACTICE SET

17

INSTRUCTIONS

- This practice set consists of two sections. Quantitative Aptitude (Qs. 1-40) & Reasoning Ability (Qs. 41-80).
- All the questions are compulsory.
- Each question has five options, of which only one is correct. The candidates are advised to read all the options thoroughly.
- There is negative marking equivalent to $1/4^{\text{th}}$ of the mark allotted to the specific question for wrong answer.

Time : 45 Min.

Max. Marks : 80

QUANTITATIVE APTITUDE

1. A trader mixes 26 kg of rice at ₹ 20 per kg with 30 kg rice of another variety costing ₹ 36 per kg. If he sells the mixture at ₹ 30 per kg his profit will be-
(a) -7% (b) 5%
(c) 8% (d) 10%
(e) None of these
2. A towel was 50 cm broad and 100 cm long. When bleached, it was found to have lost 20% of its length and 10% of its breadth. Find the percentage of decrease in area ?
(a) 32% (b) 28%
(c) 33% (d) 24%
(e) None of these
3. In an examination 75% of the total students passed in English and 65% passed in Mathematics, while 15% failed in English as well as Mathematics. If a total of 495 candidates who passed in both exams. Find the total number of students who appeared in the exam.
(a) 850 (b) 900
(c) 1000 (d) 1050
(e) None of these
4. A man deposited a total sum of ₹ 88400/- in the name of his two sons aged 19 and 17 years so that at the age of 21, both will get equal amounts. If the money is invested at the rate of 10% compound interest per annum what are the shares of his two sons ?
(a) ₹48200/- (b) ₹48400
(c) ₹42600/- (d) ₹44200
(e) None of these
5. The price of sugar increases by 20% due to the festive season. By what percentage should a family reduce the consumption of sugar so that there is no change in the expenditure ?
(a) 20% (b) $18\frac{1}{3}\%$
(c) $16\frac{2}{3}\%$ (d) $16\frac{1}{3}\%$
(e) None of these
6. Q is as much younger than R as he is older than T. If the sum of the ages of R and T is 50 years, what is definitely the difference between R and Q's age?
(a) 1 year (b) 2 years
(c) 25 years (d) Data inadequate
(e) None of these
7. How many words can be formed from the letters of the word 'SIGNATURE' so that the vowels always come together ?
(a) 720 (b) 1440
(c) 2880 (d) 3600
(e) 17280
8. Two taps can fill a tub in 5 min and 7 min respectively. A pipe can empty it in 3 min. If all the three are kept open simultaneously, when will the tub be full?
(a) 60min (b) 85min
(c) 90min (d) 106min
9. The distance between two points (A and B) is 110 km. X starts running from point A at a speed of 60 km/h and Y starts running from point B at a speed of 40 km/h at the same time. They meet at a point C, somewhere on the line AB. What is the ratio of AC to BC ?
(a) 3 : 2 (b) 2 : 3
(c) 3 : 4 (d) 4 : 3
(e) 3 : 1
10. Two vessels are full of milk with milk-water ratio 1 : 3 and 3 : 5 respectively. If both are mixed in the ratio 3 : 2, what is the ratio of milk and water in the new mixture ?
(a) 4 : 15 (b) 3 : 7
(c) 6 : 7 (d) 4 : 8
(e) None of these

11. From 5 girls and 6 boys in how many ways can 4 be chosen to include at least one girl?
 (a) 315 (b) 225
 (c) 215 (d) 185
 (e) None of these
12. Two person Ravi and Shyam can do a work in 60 days and 40 days respectively. They began the work together but Ravi left after some time and Shyam finished the remaining work in 10 days. After how many days did Ravi leave?
 (a) 8 days (b) 12 days
 (c) 15 days (d) 18 days
 (e) 20 days
13. The ratio of A's age to B's is 6 : 7. The product of their ages is 672. What is the ratio of their ages after 6 years?
 (a) 6 : 7 (b) 5 : 7
 (c) 7 : 8 (d) 15 : 17
 (e) None of these
14. The respective ratio of the present ages of a mother and daughter is 7 : 1. Four years ago the respective ratio of their ages was 19 : 1. What will be the mother's age four years from now?
 (a) 42 years (b) 38 years
 (c) 46 years (d) 36 years
 (e) None of these
15. Three friends J, K and L jog around a circular stadium and complete one round in 12, 18 and 20 seconds respectively. In how many minutes will all the three meet again at the starting point ?
 (a) 5 (b) 8
 (c) 12 (d) 3
 (e) None of these

DIRECTIONS (Qs. 16-20) : What will come in place of the question mark (?) in the following questions ?

16. $\sqrt{11449} \times \sqrt{6241} - (54)^2 = \sqrt{?} + (74)^2$
 (a) 384 (b) 3721
 (c) 381 (d) 3638
 (e) None of these
17. $\left[(3\sqrt{8} + \sqrt{8}) \times (8\sqrt{8} + 7\sqrt{8}) \right] - 98 = ?$
 (a) $2\sqrt{8}$ (b) $8\sqrt{8}$
 (c) 382 (d) 386
 (e) None of these
18. $3463 \times 295 - 18611 = ? + 5883$
 (a) 997091 (b) 997071
 (c) 997090 (d) 999070
 (e) None of these
19. $\frac{28}{65} \times \frac{195}{308} \div \frac{39}{44} + \frac{5}{26} = ?$
 (a) $\frac{1}{3}$ (b) 0.75
 (c) $1\frac{1}{2}$ (d) $\frac{1}{2}$
 (e) None of these

20. $(23.1)^2 + (48.6)^2 - (39.8)^2 = ? + 1147.69$
 (a) $(13.6)^2$ (b) $\sqrt{12.8}$
 (c) 163.84 (d) 12.8
 (e) None of these

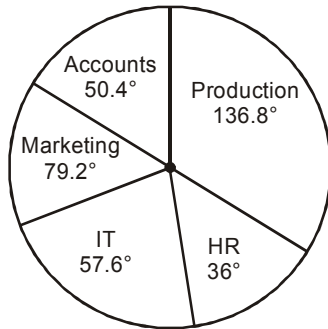
DIRECTIONS (Qs. 21-25) : In the following number series only one number is wrong. Find out the wrong number.

21. 9050 5675 3478 2147 1418 1077 950
 (a) 3478 (b) 1418
 (c) 5675 (d) 2147
 (e) 1077
22. 7 12 40 222 1742 17390 208608
 (a) 7 (b) 12
 (c) 40 (d) 1742
 (e) 208608
23. 6 91 584 2935 11756 35277 70558
 (a) 91 (b) 70558
 (c) 584 (d) 2935
 (e) 35277
24. 1 4 25 256 3125 46656 823543
 (a) 3125 (b) 823543
 (c) 46656 (d) 25
 (e) 256
25. 8424 4212 2106 1051 526.5 263.25 131.625
 (a) 131.625 (b) 1051
 (c) 4212 (d) 8424
 (e) 263.25

DIRECTIONS (Qs. 26-30) : What approximate value should come in place of the question mark (?) in the following questions? (Note : You are not expected to calculate the exact value.)

26. $\sqrt[3]{4663} + 349 = ? \div 21.003$
 (a) 7600 (b) 7650
 (c) 7860 (d) 7560
 (e) 7680
27. $39.897\% \text{ of } 4331 + 58.779\% \text{ of } 5003 = ?$
 (a) 4300 (b) 4500
 (c) 4700 (d) 4900
 (e) 5100
28. $59.88 \div 12.21 \times 6.35 = ?$
 (a) 10 (b) 50
 (c) 30 (d) 70
 (e) 90
29. $43931.03 \div 2111.02 \times 401.04 = ?$
 (a) 8800 (b) 7600
 (c) 7400 (d) 9000
 (e) 8300
30. $\sqrt{6354} \times 34.993 = ?$
 (a) 3000 (b) 2800
 (c) 2500 (d) 3300
 (e) 2600

DIRECTIONS (Qs. 31-35) : Study the following pie chart carefully to answer the questions.

Degree Wise Break-up of Employees Working in Various Departments of an Organization and the ratio of Men to Women


Total number of employees = 3250

Respective Ratio of Men to Women in each Department

Department	Men	Women
Production	4	1
HR	12	13
IT	7	3
Marketing	3	2
Accounts	6	7

31. What is the number of men working in the Marketing department?
 (a) 462 (b) 454
 (c) 418 (d) 424
 (e) None of these
32. What is the respective ratio of the number of women working in the HR department to the number of men working in the IT department?
 (a) 11:12 (b) 17:29
 (c) 13:28 (d) 12:35
 (e) None of these
33. The number of men working in the production department of the organisation forms what per cent of the total number of employees working in that department?
 (a) 88% (b) 90%
 (c) 75% (d) 65%
 (e) None of these
34. The number of women working in the IT department of the organization forms what per cent of the total number of employees in the organization from all departments together?
 (a) 3.2% (b) 4.8%
 (c) 6.3% (d) 5.6%
 (e) None of these
35. What is the total number of men working in the organization?
 (a) 2198 (b) 2147
 (c) 2073 (d) 2236
 (e) None of these
36. Mr X. deposited an amount in Scheme II with Company for two years. After that he withdrew the amount and reinvested only the principal amount in Scheme IV of Company B for two years. Total amount of simple interest accrued from the two schemes is ₹ 14,800. What was the principal amount?
 (a) ₹ 48,000 (b) ₹ 42,000
 (c) ₹ 40,000 (d) Cannot be determined
 (e) None of these
37. Company E offers compound interest under Scheme I and Company A offers simple interest under Scheme IV. What will be the difference between the interest earned under Scheme I of Company E and Scheme IV of Company A respectively in two years on an amount of ₹ 1.2 lakhs?
 (a) ₹ 1,428 (b) ₹ 1,328
 (c) ₹ 1,528 (d) ₹ 1,548
 (e) None of these
38. Company D offers compound interest under Scheme II simple interest under Scheme IV. Abhijit invested ₹ 25,000 with this company under Scheme IV and after one year switched to Scheme II along with the interest for one more year. What is the total amount he will get at the end of two years?
 (a) ₹ 28,939.25 (b) ₹ 29,838.75
 (c) ₹ 31,748.25 (d) ₹ 31,738.75
 (e) None of these
39. Abhishek invested an amount of ₹ 45,000 for two years with Company B under Scheme III, which offers compound interest, and Jeevan invested an equal amount for two years with Company C under Scheme IV, which offers simple interest. Who earned more interest and how much?
 (a) Abhishek, ₹ 1,875 (b) Jeevan, ₹ 1,875
 (c) Abhishek, ₹ 1,962 (d) Jeevan, ₹ 1,962
 (e) None of these
40. Mr. Lal invested ₹ 30,000 in Company A under Scheme II, which offers compound interest and ₹ 48,000 in Company D under Scheme II, which offers compound interest. What will be the total amount of interest earned by Mr. Lal in two years?
 (a) ₹ 14,728.80 (b) ₹ 17,428.50
 (c) ₹ 14,827.70 (d) ₹ 16,728.20
 (e) None of these

REASONING ABILITY

DIRECTIONS (Qs.36-40): Study the following table carefully to answer the questions.

Rate of interest (P.C.P.A.) offered by five companies on deposits under different schemes

Company → Scheme ↓	A	B	C	D	E
I	8.5	9.0	8.0	8.5	9.0
II	9.5	8.5	9.0	9.0	8.5
III	8.0	8.0	7.5	8.5	8.5
IV	10.0	9.5	10.5	9.5	10.0

DIRECTIONS (Qs. 14-18) : 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.

41. 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
42. 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

43. 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

44. 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

45. 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. 46-50): Study the following information carefully and answer the given questions.

Nine friends A, B, C, D, E, F, G, H and K are sitting around a circle facing the centre. A sits second to left of D. K sits third to right of F. Neither K nor F is an immediate neighbour of A or D. G and H are immediate neighbours of each other. E sits third to right of H. B is not an immediate neighbor of F.

46. What is the position of F with respect to the position of B ?
 (a) Second to the right (b) Third to the left
 (c) Second to the left (d) Third to the right
 (e) Sixth to the right
47. Who amongst the following is an immediate neighbour of H ?
 (a) C (b) B
 (c) K (d) F
 (e) A
48. Starting from A, if all the friends are made to sit in the alphabetical order in clockwise direction, the positions of how many (except A) will remain unchanged ?
 (a) None (b) One
 (c) Two (d) Three
 (e) Four
49. H is related to C and B is related to E in a certain way. To whom amongst the following is G related following the same pattern ?
 (a) F (b) H
 (c) C (d) A
 (e) D

50. What will come in place of the question mark ?

DC DB DF DA?

- (a) DG (b) DE
 (c) DH (d) DK
 (e) Either DK or DE

DIRECTIONS (Qs. 51-55): Study the following arrangement carefully and answer the questions given below :

P 1 % T R A 5 # D M 7 K ★ E G 2 8 \$ H 3 I 4 V U 6 F † 9 Z

51. How many such symbols are there in the above arrangement, each of which is immediately preceded by a consonant and also immediately followed by a consonant?
 (a) None (b) One
 (c) Two (d) Three
 (e) More than three
52. Four of the following five are alike in a certain way based on their position in the above arrangement. Which is the one that **does not** belong to that group?
 (a) VIF (b) EK8
 (c) R%# (d) 6V9
 (e) \$G3
53. How many such vowels are there in the above arrangement, each of which is immediately preceded by a digit and immediately followed by a consonant?
 (a) None (b) One
 (c) Two (d) Three
 (e) More than three
54. Which of the following is exactly in the middle between the fifth element from the left end and the seventh element from the right end?
 (a) G (b) 2
 (c) E (d) ★
 (e) None of these
55. If the positions of last twelve elements in the above arrangement are reversed, which of the following will be the eight element to the right of the eleventh element from the left ?
 (a) H (b) I
 (c) † (d) 9
 (e) None of these

DIRECTIONS (Qs. 56-60): In the following questions, the symbols ★, &, %, @ and © are used with the following meaning illustrated below:

'P%Q' means 'P is not smaller than Q'.

'P©Q' means 'P is neither smaller than nor equal to Q'.

'P★Q' means 'P is neither greater than nor equal to Q'.

'PδQ' means 'P is not greater than Q'.

'P@Q' means 'P is neither greater than nor smaller than Q'.

Now, in each of the following questions, assuming the given statements to be true, find which of the three conclusions I, II and III given below them is/are definitely true and give your answer accordingly.

56. Statements: R δ K, K ★ M, M @ J

Conclusions: I. J © K
 II. M © R
 III. R ★ J

- (a) Only I and II are true
 (b) Only II and III are true
 (c) Only I and III are true
 (d) All I, II and III are true
 (e) None of these

57. **Statements:** Z @ M, M © K, K ★ F
Conclusions: I. F © Z
 II. K ★ Z
 III. F © M
- (a) None is true (b) Only I is true
 (c) Only II is true (d) Only III is true
 (e) Only II and III are true
58. **Statements:** B ★ J, J % W, W © M
Conclusions: I. M ★ J
 II. W ★ B
 III. B © M
- (a) None is true (b) Only I is true
 (c) Only II is true (d) Only III is true
 (e) Only I and III are true
59. **Statements:** V % H, H @ F, F δ E
Conclusions: I. F @ V
 II. F ★ V
 III. E % H
- (a) Only either I or II is true
 (b) Only III is true
 (c) Only I and II are true
 (d) All I, II and III are true
 (e) Only either I or II and III are true
60. **Statements:** W © T, T δ N, N % D
Conclusions: I. D ★ T
 II. W © N
 III. D @ T
- (a) None is true (b) Only I is true
 (c) Only II is true (d) Only III is true
 (e) Only I and II are true

DIRECTIONS (Qs. 61-63) : Use the information given below to answer.

- (i) There is a group of 5 persons A, B, C, D and E
 (ii) In the group there is one badminton player, one chess player and one tennis player
 (iii) A and D are unmarried ladies and do not play any games
 (iv) No lady is a chess player or a badminton player
 (v) There is a married couple in the group of which E is the husband
 (vi) B is the brother of C and is neither a chess player nor a tennis player
61. Which of the group has only ladies?
 (a) ABC (b) BCD
 (c) CDE (d) CDA
 (e) None of these
62. Who is the tennis player?
 (a) B (b) C
 (c) D (d) E
 (e) None of these
63. Who is the wife of E?
 (a) A (b) B
 (c) D (d) C
 (e) None of these
64. Consider the following statements and answer the question.
 M, N, O and P are all different individuals
 M is the daughter of N.
 N is the son of O
 O is the father of P.
 Which among the following statements is contradictory to the above premises?
 (a) P is the father of M.
 (b) O has three children.
 (c) M has one brother.

- (d) M is the granddaughter of O.
 (e) None of these
65. In a row of twenty five children Raman is 14th from the right end. Varun is third to the left of Raman. What is Varun's position from the left end of the row?
 (a) Eighth (b) Ninth
 (c) Seventh (d) Tenth
 (e) None of these
66. A man starts walking in south and walks for 7 km, then turns left and walks for 2 km, Then, once again turns left and walks for 12 km, turns left one more time and walks for 2 km. How much distance he has to cover to reach the starting point?
 (a) 7km (b) 12km
 (c) 4km (d) 5km
 (e) None of these
67. Pointing to a boy, Mamta said, "he is the only son of my father-in-law's only child." How is the boy related to Mamta?
 (a) Brother (b) Daughter
 (c) Son (d) Husband
 (e) None of these
68. If A is to the South of B and C is to the East of B, in what direction is A with respect to?
 (a) North-East (b) North-West
 (c) South-East (d) South-West
 (e) None of these
69. A man walks 40 meters towards north. Then turning to his right, he walks 50 meter. Then turning to his left, he walks 30 meters. Again he turns to his left and walks 40 meters. How far is he from initial position?
 (a) $40\sqrt{2}$ (b) $50\sqrt{2}$
 (c) $60\sqrt{2}$ (d) $50\sqrt{3}$
 (e) None of these
70. Read the following information carefully to answer the following question:
 A * B means A is the sister of B
 A ÷ B means A is the brother of B
 A + B means A is the father of B
 A - B means A is the mother of B
 What is the relation between Q and S in 'P + Q ÷ R - S'?
 (a) Q is the aunt of S
 (b) Q is the uncle of S
 (c) Q is the mother of S
 (d) Q is the father of S
 (e) None of these

DIRECTIONS(Qs 71-75) : Study the following information carefully to answer the given questions.

Eight people M, N, O, P, Q, R, S and T are sitting in a straight line with equal distances between each other, but not necessarily in the same order. Some of them are facing North and some of them are facing south.

- M sits at one of the extreme ends of the line. Only three people sit between M and S. Q sits exactly between M and S.
- T sits third to the right of Q. N is an immediate neighbour of T and faces south. O sits second to the right of R. O is not an immediate neighbour of S.
- Immediate neighbour of S face opposite directions(i.e. if one neighbour faces North then the other neighbour faces south and Vice-Versa)
- M and P face the same direction as Q(i.e. if Q faces north then M and P also face North and Vice-Versa). Both the immediate neighbours of Q face south.

71. In the given arrangement, if two people come and sit to the immediate left of Q, how many people will sit between R and O?
 (a) Two (b) Three
 (c) Four (d) More than four
 (e) One
72. Who amongst the following sits third to the right of R?
 (a) M (b) Q
 (c) Other than those given as options
 (d) N
 (e) S
73. How many people face North as per the given arrangement?
 (a) Two (b) Three
 (c) Four (d) More than four
 (e) One
74. Four of the following five are alike in a certain way based upon their seating arrangement and so form a group. Which of the following does not belong to the group?
 (a) QO (b) MR
 (c) NR (d) OS
 (e) PS
75. Who amongst the following sits at extreme right end of row?
 (a) O (b) R
 (c) T (d) P
 (e) M
- (d) if the data even in both statements I and II together are not sufficient to answer the question.
 (e) if the data in both statements I and II together are necessary to answer the question.
76. Which bag amongst P, Q, R, S and T is the heaviest?
 I. Bag Q is heavier than R and S. Bag T is heavier than only bag P.
 II. Only three bags are lighter than R. The weight of bag Q is 50 kg, which is 2 kg more than bag R.
77. Are all the five friends – A, B, C, D and E – who are seated around a circular table facing the centre?
 I. A sits to the left of B. B faces the centre. D and E are immediate neighbours of each other. C sits second to the right of E.
 II. D sits second to right of C. C faces the centre. Both E and A are immediate neighbours of D. B sits second to the right of A.
78. In a college, five different subjects, viz Physics, Chemistry, Botany, Zoology and Mathematics, are taught on five different days of the same week, starting from Monday and ending on Friday. Is Chemistry taught on Wednesday?
 I. Two subjects are taught between Zoology and Mathematics. Mathematics is taught before Zoology. Chemistry is taught on the day immediately next to the day when Physics is taught. Botany is not taught on Friday.
 II. Three lectures are scheduled between the lectures of Botany and Zoology. Mathematics is taught immediately before Physics.
79. Is it 9 o'clock now?
 I. After half an hour, the minute and the hour hands of the clock will make an angle of exactly 90° with each other.
 II. Exactly 15 minutes ago, the hour and the minute hands of the clock coincided with each other.
80. Is F granddaughter of B?
 I. B is the father of M. M is the sister of T. T is the mother of F.
 II. S is the son of F. V is the daughter of F. R is the brother of T.

DIRECTIONS (Qs. 76-80) : 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.

- (a) 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.
 (b) 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.
 (c) if the data either in statement I alone or in statement II alone are sufficient to answer the question.

HINTS & EXPLANATIONS

1. (b) C. P. of 56 kg rice = $(26 \times 20 + 30 \times 36)$
 = ₹ $(520 + 1080)$ = ₹ 1600
 S. P. of 56 kg rice = 56×30 = ₹ 1680

$$\text{Profit \%} = \frac{80}{1600} \times 100 = 5\%$$
2. (b) Area of towel = $l \times b = 100 \text{ cm} \times 50 \text{ cm} = 5000 \text{ cm}^2$
 Now, length decreased by 20% and breadth decreased by 10%
 $l' = 100 - 20\% \text{ of } 100 = 80 \text{ cm}$
 $b' = 50 - 10\% \text{ of } 50 = 45 \text{ cm}$
 New area = $l' \times b' = 80 \text{ cm} \times 45 \text{ cm} = 3600 \text{ cm}^2$
 Change in area = $(5000 - 3600) \text{ cm}^2 = 1400 \text{ cm}^2$

$$\% \text{ change in area} = \frac{1400}{5000} \times 100 = 28\%$$
3. (b) Let A and B represent the sets of students who passed in English and Mathematics respectively.
 If 15% of candidates failed in both, then 85% passed at least one of the exams.
 Then, the total number of students passed in one or both subjects

$$= (A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$0.85 = 0.75 + 0.65 - n(A \cap B)$$

$$n(A \cap B) = 1.40 - 0.85 = 0.55$$

 0.55% of number of students = 495

$$\therefore \text{Number of students} = \frac{495}{55} \times 100 = 900$$
4. (b) Let son aged 19 years getting ₹ x and son aged 17 years getting $(88400 - x)$.
 At the age of 21, both will get equal amount

$$x \left(1 + \frac{10}{100}\right)^2 = (88400 - x) \left(1 + \frac{10}{100}\right)^4$$

$$\Rightarrow \frac{121x}{100} = (88400 - x) \times \frac{121}{100} \times \frac{121}{100}$$

$$\Rightarrow 100x = 88400 \times 121 - 121x$$

$$\Rightarrow 221x = 88400 \times 121$$

$$\Rightarrow x = \frac{88400 \times 121}{221} = 48400$$

$$x = ₹48400$$

5. (c) Let x and y be the rate of sugar per Kg and quantity of sugar.

$$xy = \left(x + \frac{20}{100} \times x \right) y'$$

$$xy = \frac{6x}{5} y'$$

$$y' = \frac{5}{6} y = y - \frac{y}{6}$$

$$\text{Reduction in consumption} = \frac{100}{6} = 16\frac{2}{3}\%$$

6. (d) $R - Q = R - T \Rightarrow Q = T$. Also, $R + T = 50 \Rightarrow R + Q = 50$. So, $(R - Q)$ cannot be determined.

7. (e) The word 'SIGNATURE' contains 9 different letters. When that vowels IAUE are taken together, they can be supposed to form an entity, treated as one letter. Then, the letters to be arranged are SGNTR (IAUE). These 6 letters can be arranged in ${}^6P_6 = 6! = 720$ ways. The vowels in the group (IAUE) can be arranged themselves in ${}^4P_4 = 4! = 24$ ways.
 \therefore Required number of words = $(720 \times 24) = 17280$.

8. (d) Net filling in 1 min = $\frac{1}{5} + \frac{1}{7} - \frac{1}{3} = \frac{21+15-35}{105} = \frac{1}{105}$

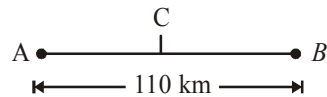
The tub will be full in 105 min.

9. (a) Distance between two points = 110 km

Relative speed = $60 + 40 = 100$ km/h

Time after which they meet

$$= \frac{\text{Total distance}}{\text{Relative speed}} = \frac{110}{100} = 1.10 \text{ h}$$



Distance covered by A in 1.10 h = $AC = 60 \times 1.10 = 66$ km

Remaining distance = $BC = 110 - 66 = 44$ km

Required ratio = $AC : BC = 66 : 44 = 3 : 2$

10. (d) By alligation method,

$$\begin{array}{ccc} \frac{1}{4} & & \frac{3}{8} \\ & \searrow \quad \nearrow & \\ & x & \\ & \nearrow \quad \searrow & \\ 3 & & 2 \end{array}$$

$$\therefore \frac{\frac{3}{8} - x}{x - \frac{1}{4}} = \frac{3}{2}$$

$$\Rightarrow \frac{3}{4} - 2x = 3x - \frac{3}{4}$$

$$\Rightarrow 5x = \frac{6}{4} = \frac{3}{2}$$

$$\therefore x = \frac{3}{10}$$

11. (a) These are the possibilities

$$1 \text{ girl } 3 \text{ boys} \Rightarrow {}^5C_1 \times {}^6C_3$$

$$2 \text{ girls } 2 \text{ boys} \Rightarrow {}^5C_2 \times {}^6C_2$$

$$3 \text{ girls } 1 \text{ boys} \Rightarrow {}^5C_3 \times {}^6C_1$$

$$4 \text{ girls} \Rightarrow {}^5C_4$$

$$\therefore \text{Total number of ways} = 5 \times 20 + 10 \times 15 + 10 \times 6 + 5 = 100 + 150 + 60 + 5 = 315$$

12. (d) 18 days

Shyam alone worked 10 days. So work done by him

$$= \frac{10}{40} = \frac{1}{4}$$

\therefore (Ravi + Shyam) have done

$$1 - \frac{1}{4} = \frac{3}{4} \text{ of the work.}$$

$$\text{(Ravi + Shyam) do } \frac{3}{4} \text{ of the work in } 24 \times \frac{3}{4} = 18 \text{ days}$$

13. (d) Let the age of A = $6x$ years

Let the age of B = $7x$ years

$$6x \times 7x = 672$$

$$x^2 = \frac{672}{42} = 16 \quad \therefore x = 4$$

Age of A after 6 years = 30 years

Age of B after 6 years = 34 years

Required ratio = $30 : 34 = 15 : 17$

14. (c) Let the ages of the mother and daughter be $7x$ and x years respectively.

$$\therefore \text{Four years ago, } \frac{7x - 4}{x - 4} = \frac{19}{1}$$

$$\Rightarrow 19x - 76 = 7x - 4$$

$$\Rightarrow 12x = 72 = x = 6$$

\therefore Mother's age after four years

$$= 7x + 4 = 7 \times 6 + 4 = 46 \text{ years}$$

15. (d) Required time = LCM of 12, 18 and 20 seconds.

$$180 \text{ seconds} = 3 \text{ minutes}$$

16. (b) $\sqrt{11449} \times \sqrt{6241} - (54)^2 = \sqrt{?} + (74)^2$

$$\Rightarrow \sqrt{?} = 107 \times 79 - 2916 - 5476$$

$$= 8453 - 2916 - 5476 = 61$$

$$\therefore ? = (61)^2 = 3721$$

17. (c) $? = \left[(3\sqrt{8} + \sqrt{8}) \times (8\sqrt{8} + 7\sqrt{8}) \right] - 98$

$$= (4\sqrt{8} \times 15\sqrt{8}) - 98 = (60 \times 8) - 98 = 480 - 98 = 382$$

18. (a) $3463 \times 295 - 18611 = ? + 5883$

$$\therefore ? = 1021585 - 18611 - 5883 = 997091$$

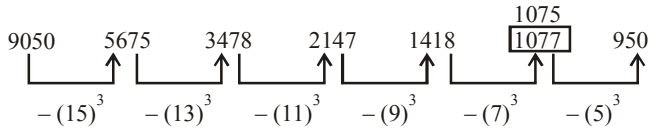
19. (d) $? = \frac{28}{65} \times \frac{195}{308} \div \frac{39}{44} + \frac{5}{26} = \frac{28}{65} \times \frac{195}{308} \times \frac{44}{39} + \frac{5}{26}$

$$= \frac{4}{13} + \frac{5}{26} = \frac{8+5}{26} = \frac{13}{26} = \frac{1}{2}$$

20. (c) $? + 1147.69 = (23.1)^2 + (48.6)^2 - (39.8)^2$

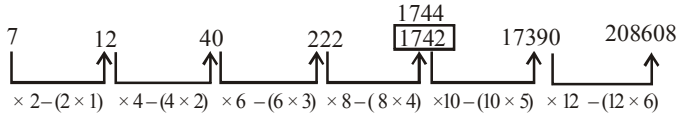
$$\therefore ? = 533.61 + 2361.96 - 1584.04 - 1147.69 = 163.84$$

21. (e) The given number series is based on the following pattern:



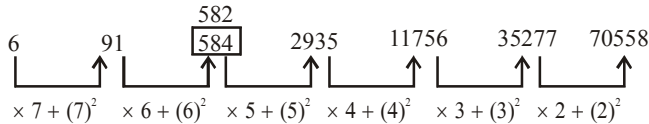
Hence, the number 1077 is wrong and it should be replaced by 1075.

22. (d) The given number series is based on the following pattern :



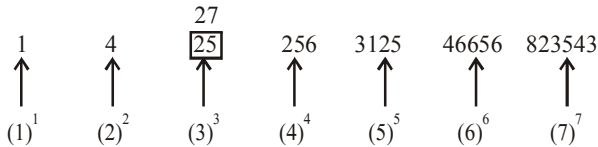
Hence, the number 1742 is wrong and it should be replaced by 1744.

23. (c) The given number series is based on the following pattern:



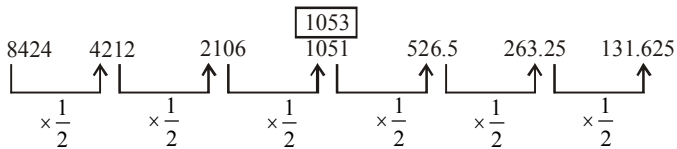
Hence, the number 584 is wrong and it should be replaced by 582.

24. (d) The given number series is based on the following pattern.



Hence, the number 25 is wrong and it should be replaced by 27.

25. (b) The given number series is based on the following pattern :



Hence, the number 1051 is wrong and it should be replaced by 1053.

26. (e) $? \div 21.003 = \sqrt[3]{4663} + 349$

$\Rightarrow ? \div 21 = 17 + 349 = 366$

$\therefore ? = 366 \times 21 = 7686 \approx 7680$

27. (c) $? = 4331 \times \frac{39.897}{100} + 5003 \times \frac{58.779}{100}$

$= 4330 \times \frac{40}{100} + 5000 \times \frac{59}{100}$

$= 1732 + 2950 = 4682 \approx 4700$

28. (c) $? = 59.88 \div 12.21 \times 6.35$

$= 60 \div 12 \times 6 = 60 \times \frac{1}{12} \times 6 \approx 30$

29. (e) $? = 43931.03 \div 2111.02 \times 401.04$
 $\approx 43930 \div 2110 \times 400$

$= 43930 \times \frac{1}{2110} \times 400 \approx 8300$

30. (b) $? = \sqrt{6354} \times 34.993 \approx 80 \times 35 = 2800$

31. (e) 32. (c) 33. (e) 34. (b) 35. (b)

36. (c) $\text{Amount} = \frac{14800}{0.18 + 0.19} = 40,000$

37. (a) Required difference

$= 1.2 \left\{ \left(1 + \frac{9}{100} \right)^2 - 1 \right\} - \frac{1.2 \times 10 \times 2}{100}$

38. (e) Required sum

$= (25000 + 2375 \times 2)(1.09)(1.09) = ₹ 35345.97$

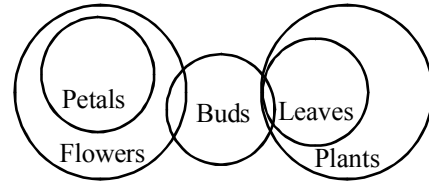
39. (d) Required difference = SI - CI

$= ₹ 9450 - ₹ 7488 = 1962$

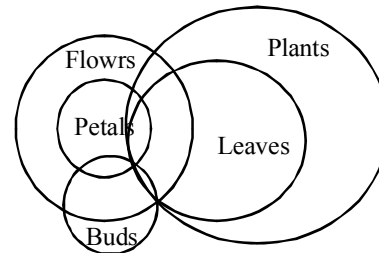
40. (a) Required Interest =

$30 \times \frac{19}{2} \times 2 \times \frac{10^3}{10^2} + 48 + 10^3 \left\{ (1.09)^2 - 1 \right\}$

41. (b) According to question,



OR

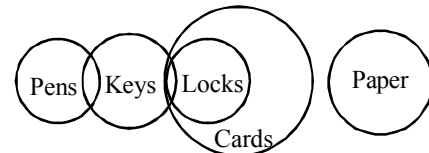


Conclusions I. false

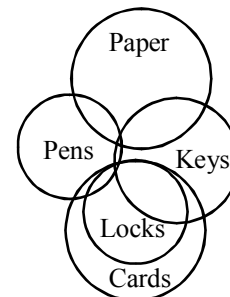
II. false }
 III. false } or

Hence, only either II or III follows.

42. (d) According to question



OR



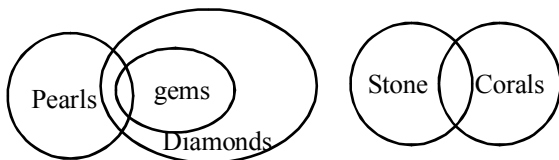
Conclusions I. True

II. True

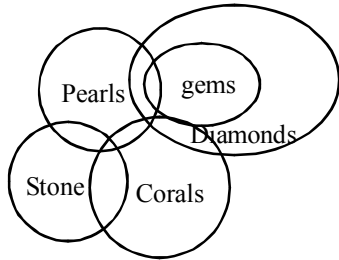
III. True

Hence, All conclusions follow.

43. (e) According to question,



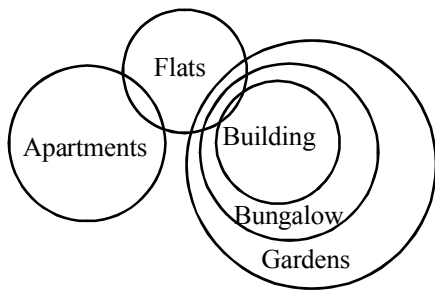
OR



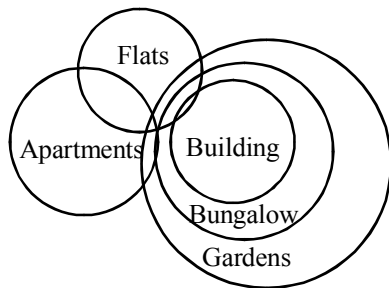
I. False
Conclusion II. True } or
III. False

Hence, only conclusions II and either I or III follow.

44. (a) According to question,

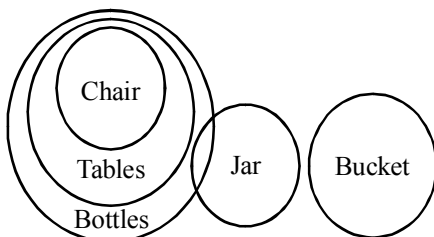


Or

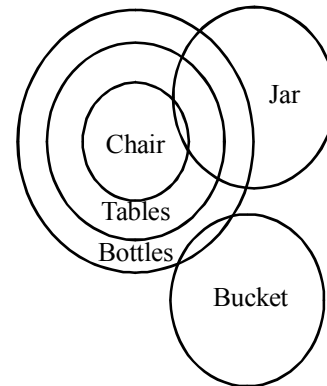


Conclusions I. ✓, II. X, III. X
Hence, only conclusion I follows.

45. (c) According to question,

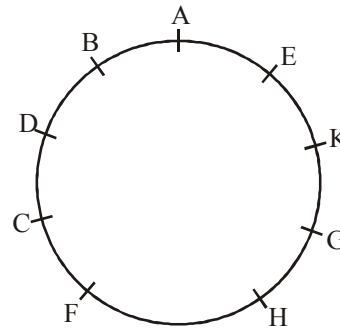


OR

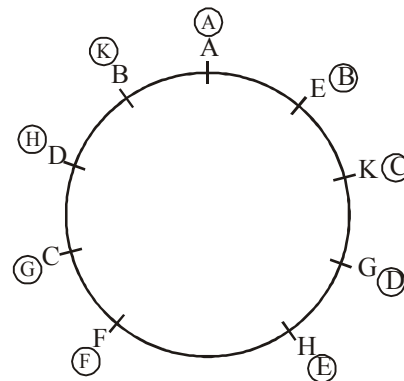


Conclusions, I. ✓, II. ✓, III. ✓
Hence, All I, II and III follow.

(46-50) :



- 46. (d)
- 47. (d)
- 48. (b)



- 49. (a) H is second to the right of C.
B is second to the right of E.
G is second to the right of F.
- 50. (c) DC, DB ⇒ Immediate neighbours of D.
DF, DA ⇒ F is second to the right of D.
A is second to the right of D.
Therefore, ? = DH
H is third to the right of D.
- 51. (a) P1%TR A 5#DM7K★EG28\$H3 14VU6Fϕ9Z
In the above series there is no consonant symbol-consonant sequence.
- 52. (e) Except it in each choice second and third elements are second to the left of first elements and third to the right of first element respectively.
- 53. (a) We have to look for digit-vowel-consonant sequence in the following series.
P1%TR A 5#DM7K★EG28\$H3 14VU6Fϕ9Z
There is no such sequence.
- 54. (d)
- 55. (d) After changing the series becomes as follows:
P1%TR A 5#DM7K★EG28Z9ϕF6UV413H\$
Now, eighth element to the right of eleventh from the left, i.e., 9.

