REGIONAL RURAL BANKS (RRBs)

OFFICER SCALE-I EXAM 2019

Based on Memory

PRELIMINARY EXAMINATION (OBJECTIVE)*

Sr. No.	Name of Tests (Objective)	No. of Questions	Medium of Exam	Maximum Marks	Duration
1.	Quantitative Aptitude	40	Hindi/English	40	Composite time of 45 minutes
2.	Reasoning	40	Hindi/English	40	
	Total	80		80	

*Candidates have to qualify in both the tests by securing minimum cut-off marks. Adequate number of candidates in each category, depending upon requirements, will be shortlisted for Online Main Examination.

INSTRUCTIONS

(1) Time limit to complete this test is 45 minutes no sectional timing.

(2) It is not necessary for the candidate to attempt the section in order of their arrangement in this test. You can choose to attempt any section first, as per your preference. All questions are compulsory and carry equal marks.

(3) Do not use calculators, or any electronic medium for calculations. You may take a clean sheet of paper for rough work and all calculations must be performed manually by the candidate.

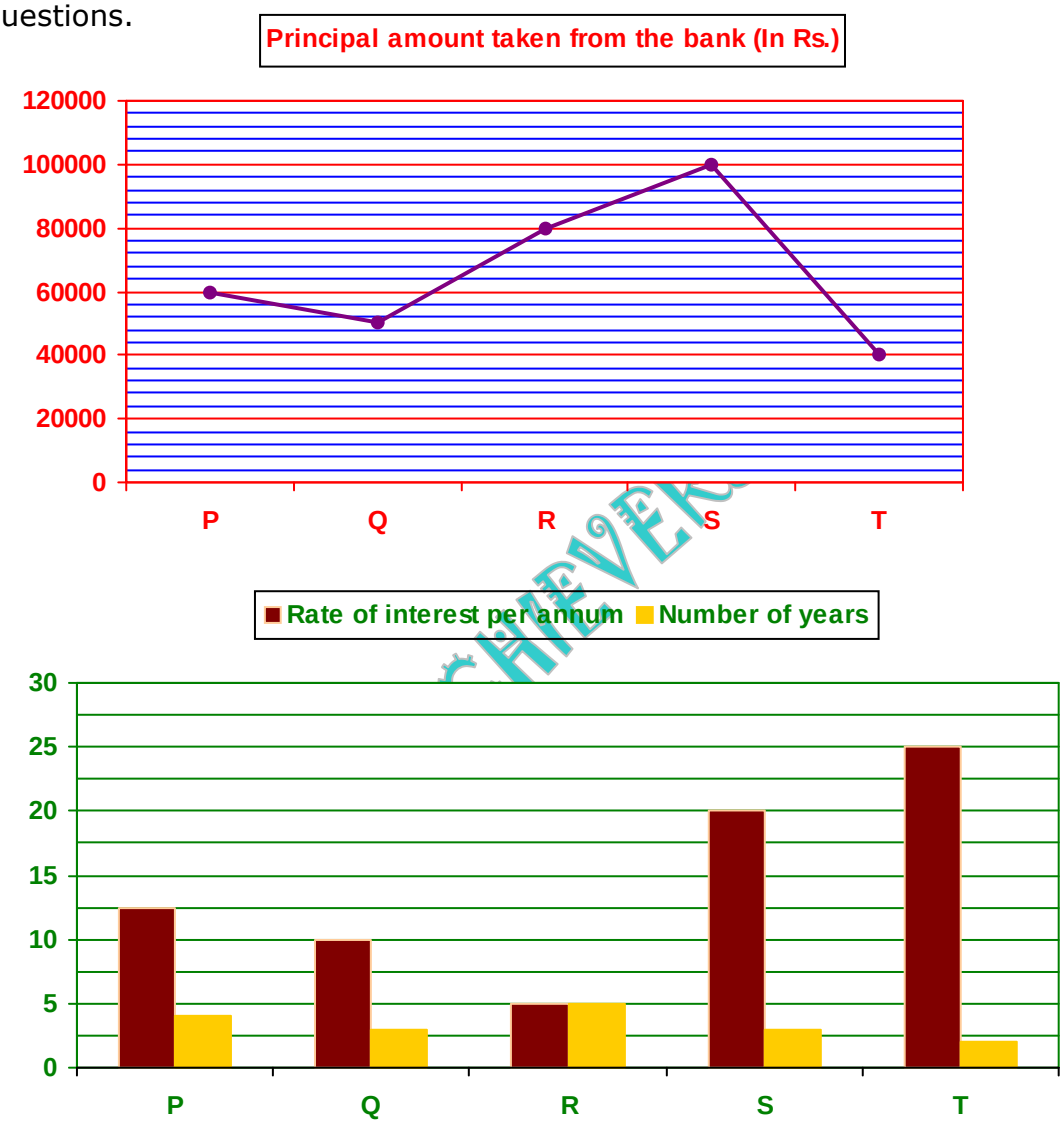
(4) There will be penalty for wrong answer marked by you in the objective tests. There are five alternatives in every question of a test.

(5) For each question for which a wrong answer has been given by you, 1/4 or 0.25 of the marks assigned to that question will be deducted as penalty. If a question is left blank, i.e. no answer is given by you, there will be no penalty for that question.

QUANTITATIVE APTITUDE

Direction (Qs.1-5): Study the data carefully and answer the following questions.

The line graph below shows the principal amount of loan taken by five persons from a bank. The Bar graph shows the interest rate and the number of years for which the loan is taken by these five persons. Study the data carefully and answer the questions.



1. Find the difference of interests paid by R and T if R took the loan at simple interest and T took the loan at compound interest.
(1) Rs.2000 (2) Rs.2100 (3) Rs.1750 (4) Rs.1800 (5) Rs.2500

2. Q paid the borrowed amount within 3 years at compound interest. Find the total interest amount Q paid.
(1) Rs.14520 (2) Rs.16550 (3) Rs.16540 (4) Rs.17500 (5) Rs.17550

3. P paid Rs.17500, Rs.16250 and Rs.15000 at the end of 1st, 2nd and 3rd year. Find the amount of money that P needs to pay at the end of 4th year to clear his due. (Simple interest rate is applied on the sum)
(1) Rs.32500 (2) Rs.30000 (3) Rs.33750 (4) Rs.33000 (5) Rs.31250

4. Find the difference of compound interest and simple interest on the sum borrowed by S.
(1) Rs.12000 (2) Rs.11200 (3) Rs.13200 (4) Rs.12800 (5) Rs.12500

5. If the interest charged from everyone is at simple rate then who will pay the equal amount of interest on the sum borrowed?
(1) P & S (2) Q & R (3) R & T (4) S & P (5) T & Q

Direction (Qs.6-10): Find out the wrong number in the series

6. -64 -28 -2 6.25 7.359375
(1) -64 (2) 7.359 (3) 6.25 (4) -28 (5) -2

7. 12 68 158 288 472 712
(1) 288 (2) 158 (3) 12 (4) 472 (5) 712

8. 55 61.2 67.6 75.2 81
(1) 55 (2) 61.2 (3) 75.2 (4) 67.6 (5) 81

9. 28 44 64 90 116
(1) 64 (2) 44 (3) 90 (4) 116 (5) 28

10. 948 945 979 924 1060 858
(1) 858 (2) 1060 (3) 924 (4) 979 (5) 945

Direction (Qs.11-15): Determine the approximate value of '?' in the following question. (You are not expected to calculate the exact value)

11. $\frac{(23.01)^2-(12.92)^2}{(33.92)^2-(15.98)^2}=?$
(1) 1 (2) 2 (3) 0.4 (4) 0.9 (5) 100

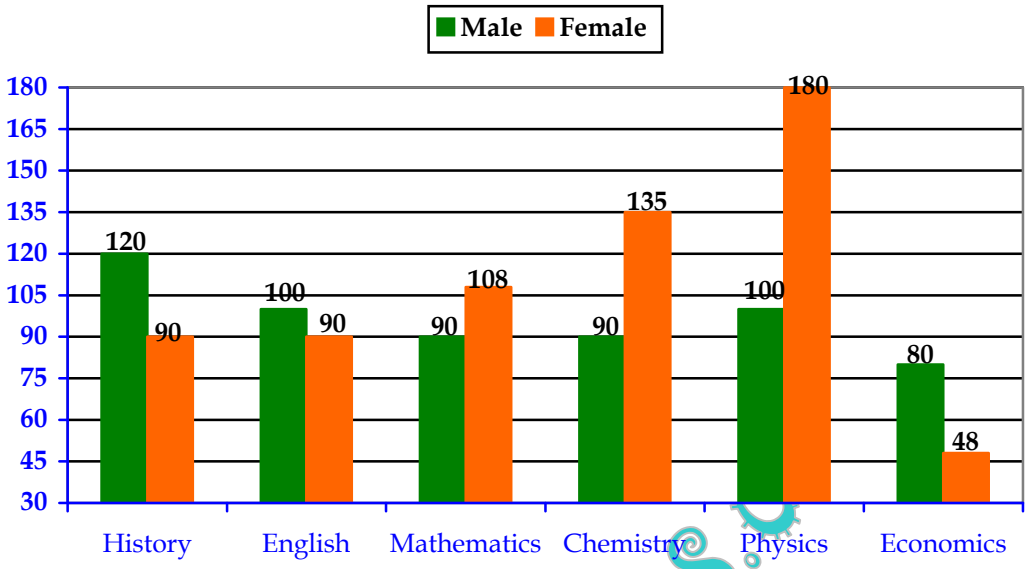
12. $\frac{11.92\times11.98\times12.02}{1.98}-\frac{9.96\times9.98\times10.02}{4.93}=?$
(1) 500 (2) 664 (3) 256 (4) 510 (5) 100

13. (92.40 ÷ 1.91) + (69.15 × 5.40) = 81.14 × ? – 13.85
(1) 5 (2) 1 (3) 8 (4) 12 (5) 01

14. (81.49 × 8.88 + 181.09) ÷ 12.77 = 43.74 + 1.23 × ?
(1) 15 (2) 26 (3) 65 (4) 13 (5) 2

15. (221.91 ÷ 36.89) × 4.05 = 9.15 × ? – 39.20
(1) 12 (2) 14 (3) 7 (4) 2 (5) 11

Direction (Qs.16-20): Study the following bar graph containing the details about the number of male and female students in different departments. All sex ratios are female to male unless specified differently.



16. What is the total male strength of the college?
(1) 560 (2) 580 (3) 645 (4) 660 (5) 675

17. What is the female to male sex-ratio of the college in general (approximate to one digit after decimal point)?
(1) 1.1 (2) 1.2 (3) 1 (4) 1.5 (5) 1.8

18. From each department if '*x*' male students leave and '*x*' female students join newly. If the sex ratio of the total college becomes 2.0775, what is the sex ratio of the economics department?
(1) 1.56 (2) 1.52 (3) 0.96 (4) 0.95 (5) 1.9

19. In which of the following options, the departments are correctly arranged in the decreasing order of their sex ratios?
(1) Economics, English, History, Mathematics, Chemistry, Physics
(2) Physics, Chemistry, Mathematics, History, English, Economics
(3) Physics, Chemistry, English, Mathematics, History, Economics
(4) Economics, History, Physics, chemistry, Mathematics, English
(5) Physics, Chemistry, Mathematics, English, History, Economics

20. Fee structure of the college per semester can be summarized as follows:
In each department, 20 females students and 10 male students are exempted from paying tuition fee of Rs.15500. Those departments which have lab course (Physics and Chemistry) have to pay an extra fee of Rs.2500 per student. In addition, every student has to pay Rs.2800 as infrastructure fee and Rs.1200 as exam fees. History and English department students have to pay Rs.1500 for literary club activities.
Now what is the total amount of fees collected from Physics and History department respectively (in lakhs)?
(1) 36.45, 59.95 (2) 56.45, 39.95 (3) 56.95, 39.45
(4) 44.05, 33.06 (5) 44.5, 33.6

Direction (Qs.21-25): In the following question, two equations numbered I and II are given. You have to solve both the equation and give answer.

Give answer (1): If $x > y$
Give answer (2): If $x < y$
Give answer (3): If $x \geq y$
Give answer (4): If $x \leq y$
Give answer (5): If $x = y$ or no relation can be established

21. I. $2x^2 - 37x + 171 = 0$ II. $\frac{9}{\sqrt{y}} + \frac{3}{\sqrt{y}} = \sqrt{y} + 1$

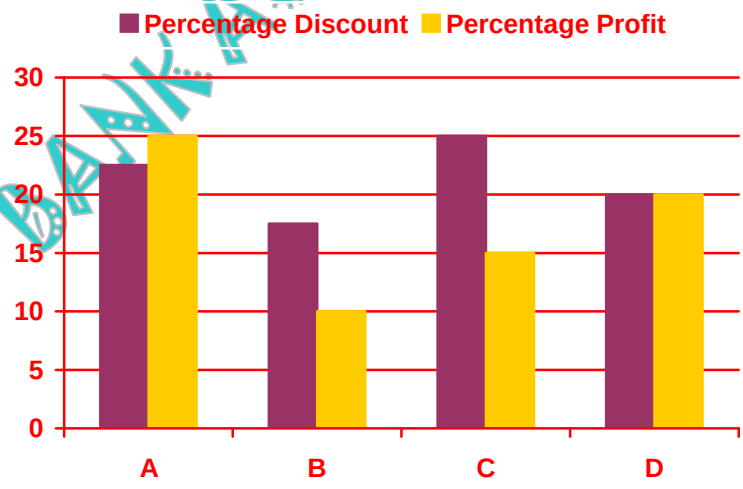
22. I. $x(10x - 1) = 2$ II. $4y^2 - 11y + 6 = 0$

23. I. $x^2 - 1050x + 270000 = 0$ II. $y^2 - 190y + 4800 = 0$

24. I. $18x^2 - 137x + 77 = 0$ II. $2y^2 + 35y + 143 = 0$

25. I. $\left(x - \frac{3}{4}\right)\left(x - \frac{6}{5}\right) = 0$ II. $\left(y - \frac{7}{4}\right)\left(y - \frac{4}{5}\right) = 0$

Direction (Qs.26-30): The bar graph below shows the percentage discount offered and percentage profit earned on 4 articles A, B, C and D. The table shows the cost price of these 4 articles. Study the data carefully and answer the questions.



Article	Cost Price (In Rs.)
A	20000
B	30000
C	45000
D	-

26. If the ratio of the amount of profit earned by selling item A to item D is 25 : 36, then find the cost price of article D.
(1) Rs.30000 (2) Rs.24000 (3) Rs.40000 (4) Rs.20000 (5) Rs.36000

27. If selling price of all articles is represented in a pie chart, then what will be the angle formed at the center by the sector representing article C given that the cost of article D is Rs.36000?
(1) 120.8° (2) 135.4° (3) 115.6° (4) 121.8° (5) 132.2°

28. Find the difference between the marked prices of article B and C.
(1) Rs.29000 (2) Rs.32500 (3) Rs.27500 (4) Rs.25000 (5) Rs.30000

29. If an extra discount of 10% on the selling price is given in article A, then what will be the new selling price of article A?
(1) Rs.24000 (2) Rs.22500 (3) Rs.21000 (4) Rs.20000 (5) Rs.21500

30. In which article the amount of discount is the minimum, given that the cost of article D is Rs.36000?
(1) A (2) B (3) C (4) D (5) Can't say

Direction (Qs.31-35): Given below are two quantities named A and B. Based on the given information, you have to determine the relation between the two quantities. You should use the given data and your knowledge of Mathematics to choose between the possible answer.

Give answer (1): Quantity A > Quantity B
Give answer (2): Quantity A < Quantity B
Give answer (3): Quantity A ≥ Quantity B
Give answer (4): Quantity A ≤ Quantity B
Give answer (5): Quantity A = Quantity B or no relation

31. Quantity A: The LCM of two numbers is 40 times their HCF. The sum of the LCM and HCF is 1,476. If one of the numbers is 288, find the sum of digits of other number?
Quantity B: A vendor has 748 oranges, 408 apples and 952 mangoes. If he packs the fruits into crates with an equal number of fruit without mixing them, what is the sum of digits of minimum number of creates required?

32. Quantity A: A dishonest dealer promises to sell his goods at 44% loss but uses 30% less weight. Find his actual loss
Quantity B: A shopkeeper promises to sell his goods at x% profit but uses 20% less weight thus gains 37.5%. Find x%.

33. Quantity A: Gun is fired from behind a train. The driver of the train hears the sound 1.5 min later than ground at the end of the train. Find the length of the train, if the speed of sound and train are 1100 m/min and 60 km/hr.
Quantity B: A train passes two persons who are walking in opposite direction to the train at the speed of 5 m/sec and 10 m/sec in 6 sec and 5 sec respectively. Find the length of the train.

34. **Quantity A:** A, B and C can do a work in 24, 30 and 40 days respectively. How long will it taken them to complete the remaining work, if only A and B work for the first 6 days and then C joins them?
Quantity B: B can complete the work in 20 days. C is twice as efficient as B and A takes 2 days more than it takes C to complete the work. Working together, in how much time would they be able to complete the work?

35. **Quantity A:** Average of 10 numbers is 14. If each number is multiplied by 6, then what will be the new average?
Quantity B: The average of four consecutive multiples of four is 78. What is the largest number?

36. A man has a bag which contains 40 precious gems of different colours, i.e., Green, Orange and Yellow. The probability of picking orange gem is $\frac{3}{8}$. If the first gem was Orange and without replacement, probability of picking a green gem is $\frac{4}{13}$. Find the number of Yellow gems.
(1) 7 (2) 13 (3) 5 (4) 11 (5) None of these

37. An 80 meter long train crosses a person who is walking at a speed of 6 km/hr in the opposite direction and passes him in 8 seconds. Subsequently, it crosses a second person, walking in the same direction as that of the first person and passes him in $5\frac{1}{3}$ seconds. Find the speed of the second person.
(1) 15 m/s (2) 10 m/s (3) 24 m/s (4) 20 m/s (5) 18 m/s

38. The daily expenditure of A and B are in the ratio 7 : 9. If both of them reduced their daily expenditure by Rs.500 per day, the new ratio of their daily expenditure becomes 11 : 17. What is their average daily savings after reduction in daily expenditure if both of them spends 20% of total daily earning on their daily expenditure?
(1) Rs.950 (2) Rs.1400 (3) Rs.2500 (4) Rs.1500 (5) Rs.2800

39. The person invests the certain amount in scheme A that offers 15% annum rate of compound interest for 2 years and he also invests same amount of money in scheme B that offers same rate of interest for same period. If the difference between the interest received by scheme A and B is Rs.18, then find the investment amount?
(1) Rs.1200 (2) Rs.1100 (3) Rs.1000 (4) Rs.800 (5) None of these

40. P, Q and R started a business by investing Rs.x, Rs.x + 5000 and Rs.x – 10000 respectively. After 6 months, P withdraws Rs.10000 and after another 2 months, R added Rs.5000 more. Find the value of x, if the ratio of share of P, Q and R at the end of the year is 21 : 27 : 19.
(1) 30000 (2) 40000 (3) 50000 (4) 20000 (5) None of these

REASONING

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

A certain number of persons are seated in a circular table with all of them facing towards the centre. Five persons are seated between B and E and A sits exactly between them. Only one person is seated between E and I, who is not an immediate neighbour of A. G is not an immediate neighbour of I. As many persons are seated between A and D as between C and A. B and D are not immediate neighbours. Only two persons are seated between C and D when counted from left of C. F sits on the immediate right of D. H, who is an immediate neighbour of A sits fifth to the left of G. Not More than five people sit between A and D when counted from left of D.

41. How many persons are seated around the circular table?
(1) Thirteen (2) Fifteen (3) Fourteen (4) Sixteen (5) Seventeen

42. Who sits on the immediate right of B?
(1) G (2) A (3) D (4) H (5) Can't say

43. How many persons are seated between H and I when counted from the left of H?
(1) None (2) 1 (3) 2
(4) 3 (5) More than three

44. Four of the following five are alike in a certain way and hence form a group. Which of the following does not belong to that group?
(1) IC (2) AH (3) FD (4) HE (5) GB

45. Who sits exactly between D and E when counted from the right of D?
(1) A (2) B (3) C (4) D (5) E

46. Four of the following five are alike in a certain way and hence form a group. Which is the one that does not belong to that group?
(1) CF (2) PS (3) JN (4) WZ (5) HK

Direction (Qs.47-48): Study the following information carefully and answer the questions given below.

A, B, C, D, E, F and G are seven members of a family. C is the brother-in-law of F, who is the mother of G. B is the mother of E, who is the nephew of A who doesn't have any sister. G is the grand-daughter of D, who is the father of A.

47. How is C related to G?
(1) Brother (2) Nephew (3) Father (4) Uncle (5) Grand-mother

48. How many females are there in the family?
(1) 3 (2) 2 (3) 4 (4) 1 (5) 5

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

Eight boxes P, Q, R, S, T, U, V and W are placed one above the other. Not necessarily in the same order. The number of boxes between P and S is one less than that between P and U. Box P is kept on one of the places above box U. Two boxes are kept between box Q and box T. Three boxes are kept between box T and box W, W is kept just below box Q. Box S is one of the immediate neighbors of box W. There are two boxes kept between W and R. Box V and box P are neither kept at the top nor at the bottom place. P is not a neighbor of T.

49. Which among the following boxes is kept at the top?
(1) T (2) W (3) Q (4) R (5) U

50. Which box is kept immediate below S?
(1) R (2) U (3) W (4) P (5) V

51. How many boxes are kept between W and U?
(1) None (2) One (3) Two (4) Three (5) Four

52. Choose the pair which is different from others?
(1) VP (2) WS (3) QP (4) RU (5) SV

53. Which combination of box/boxes is/are kept between box V and box Q?
(1) T, R (2) Q, W, S (3) W, S, U (4) P (5) Can't say

Direction (Qs.54-56): In the following question assuming the given statement to be true, find which of the following conclusion(s) among the given conclusions is/are definitely true and then give your answer accordingly.

54. **Statements**: A ≥ B = Q ≤ P < J ≤ Y; Z ≥ A
Conclusions: I. Z > J II. Z ≥ Q
(1) **Both** conclusions I **and** II are true
(2) **Only** conclusion **II** is true
(3) **Neither** conclusion I **nor** II is true
(4) **Either** conclusion I **or** II is true
(5) **Only** conclusion **I** is true

55. **Statements**: G < R = A ≤ S, T < R
Conclusions: I. S > G II. S > T
(1) **Both** conclusions I **and** II are true
(2) **Either** conclusion I **or** II is true
(3) **Neither** conclusion I **nor** II is true
(4) **Only** conclusion **I** is true
(5) **Only** conclusion **II** is true

56. **Statements**: P = U < H < K ≤ G > N; D ≤ K
Conclusions: I. D ≥ U II. P > D
(1) **Neither** conclusion I **nor** II is true
(2) **Both** conclusions I **and** II are true
(3) **Only** conclusion **II** is true

(4) **Either** conclusion I **or** II is true
(5) **Only** conclusion **I** is true

Direction (Qs.57-58): In the question below are given two statements 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
Give answer (2): If **only** conclusion **II** follows
Give answer (3): If **either** conclusion I **or** II follows
Give answer (4): If **neither** conclusion I **nor** II follows
Give answer (5): If **both** conclusion I **and** II follow

57. Statements: Some cricket are Football
Some cricket are not Tennis

Conclusions: I. Some Football are Tennis
II. No Tennis is Football

58. Statements: All Europe is Asia
Some Asia is not Australia

Conclusions: I. Some Europe is Australia is a possibility
II. All Australia is Europe is a possibility

Direction (Qs.59-63): Study the following information carefully and answer the below questions.

Seven persons namely – P, Q, R, S, T, U and V are sitting in a pentagon table in such a way that one person sitting at each corner and one sitting at the middle of the table. Three places are vacant in the table. Person on the middle of the table facing center, while person on the corner sits facing away from center. Age of each person is different viz., 18, 21, 23, 26, 28, 31 and 34 years. No two adjacent places are vacant. All the information is not necessarily in same order.

P sits three places away from the one whose age is 28 years. The one whose age is 31 years sits fourth to left of S. Difference of ages of U and V is perfect cube. S, whose age is not an even number, sits third to right of U. The one whose age is 18 years sits on corner of the table but neither sits adjacent to V nor adjacent to the one whose age is 26 years. P sits adjacent to U, who sits facing away from center. Sum of ages of V and S is twice the age of P. Age of V is neither even number nor sits adjacent to vacant place. No person sits between Q and R, who doesn't sit adjacent to S. Two persons sit between T and the one whose age is 18 years.

59. What is the position of T with respect to the one whose age is 34 years?
(1) Second to left (2) Immediate right (3) Third to left
(4) Immediate left (5) None of these

60. What is the difference between the ages of Q and R?
(1) 16 years (2) 11 years (3) 8 years (4) 13 years (5) None of these

61. How many persons sit between S and the one whose age is 31 years, when counted left of S?
(1) 3 (2) 2 (3) 1 (4) More than 3(5) None

62. Which of the following combination of person and their age are true?
(1) U–26 (2) S–18 (3) T–23 (4) V–21 (5) R–34

63. Which of the following statements is not true?
(1) The one whose age is 21 years sits immediate left of Q
(2) Two persons sits between P and the one whose age is 31 years
(3) The one whose age is 34 years sits immediate left of V
(4) T sits second to left of U
(5) All the above statements are true

Direction (Qs.64-65): Study the following information carefully and answer the below questions.

D is 5 m South of A, which is in straight line with C at the distance of 8 m West. B is 10 m North-East of E, which is 11 m South of C. B is in straight line with D. D, B & F are in the straight line and B is 4 m west of F.

64. What is the shortest distance between D and E?
(1) 6 m (2) 10 m (3) 4 m (4) 7 m (5) 5 m

65. What is the direction of A with respect to E?
(1) West (2) North (3) North-East (4) South-East (5) North-West

Direction (Qs.66-70): Study the following information carefully and answer the below questions.

Seven boxes namely – P, Q, R, S, T, U and V are kept one above other in the form of stack. Weight (kg) of each box is different viz. 8, 9, 12, 16, 18, 21 and 23 kg. Each box also contains different articles viz., Bat, Ball, Cap, Cup, Book, Mobile and Pen. All the information are not necessary in same order.
At least three boxes are kept below the box S, whose weight is neither odd number nor contains Cup. The box which contains Ball is kept just above the box S and is kept three boxes away from the box whose weight is 9 kg. Box Q contains Bat and is kept just above the box whose weight is 9 kg. The box which contains Book is kept just below the box whose weight is 18 kg. The box P neither contains Ball nor kept at bottom. At least two boxes are kept between the box whose weight is 23 kg and the box which contains Pen. Number of boxes between P and the box which contains cup is one more than number of boxes between the box T and the box which contains Book. Weight of the box P is 21 kg and is kept just below the box whose weight is 8 kg. Weight of the box T is 12 kg. The box which contains Pen is kept just below the box U. The box V neither contains Ball nor kept adjacent to the box which contains Cap. Number of Boxes above U is as same as the number of boxes below T.

66. Which of the following boxes is kept just above the box V?
(1) Q (2) T (3) P (4) R (5) None of these

67. What is the weight difference between the box which contains mobile and the box kept just above the box R?
(1) 11 kg (2) 13 kg (3) 9 kg (4) 6 kg (5) None of these

68. How many boxes are kept below the box which contains Book?
(1) Three (2) One (3) Two (4) More than three (5) None

69. Which of the following statements is true?
(1) Three boxes are kept between the box which contains Pen and the box T
(2) The box whose weight is 16kg is kept just below the box Q
(3) Two boxes are kept between the box R and the box which contains Mobile
(4) One box is kept between the box S and the box which contains Cap
(5) All the above statements are not true

70. Which of the following boxes is kept just above the box which contains Mobile?
(1) V (2) Q (3) R (4) U (5) None of these

Direction (Qs.71 to 75): Study the following information carefully and answer the questions given below.

Eight persons E, F, G, H, I, J, K and L are seated in a vertical row facing east. Each of them likes various chocolates namely Barone, Dairy milk, Five star, Gems, Kitkat, Milky bar, Munch, Snickers not necessarily in the same order. The one who likes Barone sits fourth to the right of F. Neither of them sits at the extreme ends of the row. G sits on the immediate right of the one who likes Barone. Two persons sit between the one who likes Milky bar and the one who likes Snickers, who sits at an extreme end of the row. G neither likes Snickers nor Kitkat. The one who likes Munch sits second to the left of E, who likes Five star. F does not like Munch. Only one person sits between K, who likes Dairy milk and L. J sits second to the left of I.

71. Which of the following persons likes Munch?
(1) J (2) I (3) K (4) E (5) F

72. Who sits to the immediate left of L?
(1) G (2) The one who likes Five star (3) H
(4) The one who likes Milky bar (5) Either (2) or (4)

73. Which of the following persons sit at an extreme end of the row?
(1) The one who likes Snickers (2) K (3) Both (1) and (2)
(4) The one who likes Munch (5) Both (2) and (4)

74. If all the persons are made to sit in alphabetical order from bottom to top, the position of how many persons will remain the same?
(1) None (2) One (3) Two (4) Three (5) More than three

75. How many persons are seated between F and the one who likes Gems?
(1) One (2) Two (3) Three (4) More than three (5) None

Direction (Qs.76-80): Study the following information carefully and answer the questions accordingly.

In a certain coded language,
"Fresh Mind Happy Life" is coded as "H#14 M@17 K#33 U@17"
"Kashi City Of Temple" is coded as "S#20 G@28 L@21 O@25"
"Sarnath Belongs To Varanasi" is coded as "G#27 T#21 G@35 H@31"
"One Airport In Banaras" is coded as "M#20 I#21 R@23 Z#21"

76. What is the code for 'excellent'?
(1) O@25 (2) O#25 (3) M@25 (4) M#25 (5) None of these

77. What is the code for 'collect'?
(1) X@23 (2) Z@23 (3) X#25 (4) X#23 (5) None of these

78. What is the code for 'life'?
(1) I@17 (2) U@17 (3) H#14 (4) M@17 (5) None of these

79. What is the code for 'success'?
(1) H#38 (2) S#38 (3) F@14 (4) H#28 (5) None of these

80. What is the code for 'smart'?
(1) I#29 (2) R#39 (3) I#39 (4) M#19 (5) None of these

IBPS RRB (OFFICER SCALE-I) EXAM-2019
ANSWERS WITH EXPLANATION

QUANTITATIVE APTITUDE

1. Ans (5): Rs.2500

R took the loan at simple interest:

Amount of interest paid by R $= \frac{[80000 \times 5 \times 5]}{100} = \text{Rs.}20000$

Compound interest $= 25 + 25 + \frac{25 \times 25}{100} = 56.25\%$

$\therefore$ Compound Interest $= \frac{56.25}{100} \times 40{,}000 = \text{Rs.}22500$

$\therefore$ Required difference = 22500 – 20,000 = Rs.2500

2. Ans (2): Rs.16550

Compound Interest for 2 years $= 10 + 10 + \frac{10 \times 10}{100} = 21$

Compound Interest for 3 years $= 21 + 10 + \frac{21 \times 10}{100} = 33.1\%$

$\therefore$ Interest he paid $= \frac{33.1}{100} \times 50000 = \text{Rs.}16550$

3. Ans (3): Rs.33750

Principal = Rs.60000, r = 12.5%

1st year = $\frac{[60000 \times 12.5 \times 1]}{100} = \text{Rs.}7500$

Amount after 1st year = 60000 + 7500 = Rs.67500

Rs.17500 is paid by P at the end of 1st year

Principal for 2nd year = 67500 – 17500 = Rs.50000

SI for 2nd year = $\frac{[50000 \times 12.5 \times 1]}{100} = \text{Rs.}6250$

Amount = 50000 + 6250 = 5250

Principal for 3rd year = 56250 – 16250 = Rs.40000

SI for 3rd year = $\frac{[40000 \times 12.5 \times 1]}{100} = \text{Rs.}5000$

Amount after 3rd year = 40000 + 5000 = Rs.45000

Principal for 4th year = 45000 – 15000 = Rs.30000

SI for 4th year = $\frac{[30000 \times 12.5 \times 1]}{100} = \text{Rs.}3750$

Amount to be paid after 4th year = 30000 + 3750 = Rs.33750

4. Ans (4): Rs.12800

C.I for 2 years $= 20 + 20 + \frac{20 \times 20}{100} = 44$

C.I for 3 years $= 44 + 20 + 44 \times \frac{20}{100} = 72.8\%$

S.I = 20 × 3 = 60%

$\therefore$ Difference = 12.8%

$\therefore$ Required difference $= \frac{12.8}{100} \times 100000 = \text{Rs.}12800$

5. **Ans (3): R & T**

Simple interest paid by P = $\frac{[60000 \times 12.5 \times 4]}{100}$ = Rs.30000

Simple interest paid by Q = $\frac{[50000 \times 10 \times 3]}{100}$ = Rs.15000

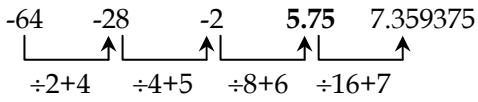
Simple interest paid by R = $\frac{[80000 \times 5 \times 5]}{100}$ = Rs.20000

Simple interest paid by S = $\frac{[100000 \times 20 \times 3]}{100}$ = Rs.60000

Simple interest paid by T = $\frac{[40000 \times 25 \times 2]}{100}$ = Rs.20000

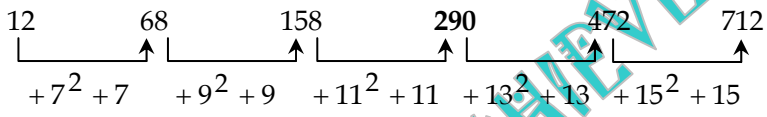
$\therefore$ R & T will pay equal amount of interest on the sum borrowed.

6. **Ans (3): 6.25**



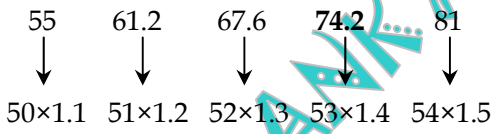
The wrong number is 6.25

7. **Ans (1): 288**



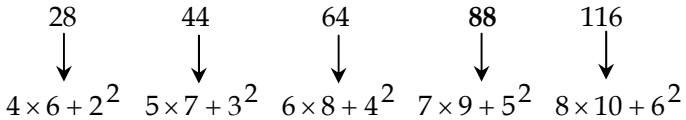
The wrong number is 288

8. **Ans (3): 75.2**



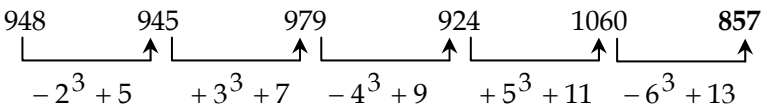
The wrong number is 75.2

9. **Ans (3): 90**



The wrong number is 90

10. **Ans (1): 858**



The wrong number is 858

11. **Ans (3): 0.4**

$$? \approx \frac{(23)^2-(13)^2}{(34)^2-(16)^2} \Rightarrow ? = \frac{(23+13)\times(23-13)}{(34-16)\times(34+16)}$$

$$\Rightarrow \frac{36\times 10}{18\times 50} = 0.4$$

12. **Ans (2): 664**

$$? \approx \frac{12\times 12\times 12}{2} - \frac{10\times 10\times 10}{5} = 864 - 200 = 664$$

13. **Ans (1): 5**

$(92 \div 2) + (69 \times 5) \approx 81 \times ? - 14 \Rightarrow 46 + 345 = 81 \times ? - 14$

$391 = 81 \times ? - 14 \Rightarrow 405 = 81 \times ? \Rightarrow ? = \frac{405}{81} \Rightarrow ? \approx 5$

14. **Ans (2): 26**

$(81 \times 9 + 181) \div 13 \approx 44 + 1 \times ? \Rightarrow (729 + 181) \div 13 = 44 + 1 \times ? \Rightarrow 910 \div 13 = 44 + 1 \times ?$

$70 = 44 + 1 \times ? \Rightarrow 1 \times ? = 26 \Rightarrow ? = \frac{26}{1} \Rightarrow ? \approx 26$

15. **Ans (3): 7**

$(222 \div 37) \times 4 = 9 \times ? - 39 \Rightarrow 6 \times 4 = 9 \times ? - 39 \Rightarrow 24 = 9 \times ? - 39 \Rightarrow 9 \times ? = 39 + 24$

$9 \times ? = 63 \Rightarrow ? = \frac{63}{9} \Rightarrow ? \approx 7$

16. **Ans (2): 580**

Total male strength of college = Sum of males students in each department

Total = 120 + 100 + 90 + 90 + 100 + 80 = 580

17. **Ans (1): 1.1**

Total number of male students in the college = 580

Total number of female students in the college = 90 + 90 + 108 +135 + 180 + 48 = 651

$\therefore$ Sex ratio = $\frac{651}{580} \approx 1.1$

18. **Ans (1): 1.56**

There are six departments

$\therefore 6x$ males leave the college and $6x$ females join the college.

Number of male students = $580 - 6x$

Number of female students = $651 + 6x$

Sex ratio = $\frac{(651+6x)}{(580-6x)} = 2.0775 \Rightarrow 651 + 6x = 1204.95 - 12.465x$

$553.95 = 18.465x \Rightarrow x = 30$

$\therefore$ Number of males in economics department = 80 – 30 = 50

Number of females in economics department = 48 + 30 = 78

$\therefore$ Sex ratio = $\frac{78}{50} = 1.56$

19. **Ans (5): Physics, Chemistry, Mathematics, English, History, Economics**

$\text{Sex ratio} = \dfrac{\text{Number of females}}{\text{Number of males}}$

History department, sex ratio = $\dfrac{90}{120} = 0.75$

English department, sex ratio = $\dfrac{90}{100} = 0.9$

Mathematics department sex ratio = $\dfrac{108}{90} = 1.2$

Chemistry department sex ratio = $\dfrac{135}{90} = 1.5$

Physics department, sex ratio = $\dfrac{180}{100} = 1.8$

Economics department sex ratio = $\dfrac{48}{80} = 0.6$

Arranging in decreasing order of their sex ratios

Physics, Chemistry, Mathematics, English, History and Economics.

20. **Ans (3): 56.95, 39.45**

Physics department:

Total tuition fee collected = (Total number of students in the department – 30) × 15500

(100 + 180 – 30) × 15500 = Rs.3875000

Lab fees collected = Total number of students in the department × 2500 = 280 × 2500 = Rs.70000

Infrastructure fee + Exam fee = Total number of students × (2800 + 1200) = 280 × 4000 = 1120000

∴Total fee collected in physics department = 3875000 + 700000 + 1120000 = Rs.5695000

History department:

Total tuition fee collected = (Total number of students in the department – 30) × 15500 = (120 + 90 – 30) × 15500 = Rs.22790000

Literary club fees collected = Total number of students in the department × 1500 = 210 × 1500 = Rs.315000

Infrastructure fee + Exam fee = Total number of students × (2800 + 1200) = 210 × 4000 = Rs.840000

∴Total fee collected in History department = 2790000 + 315000 + 840000 = Rs.3945000

21. **Ans (5): No relation can be established**

I. SR = 37, PR = 342 $\Rightarrow x = \dfrac{19}{2}, \dfrac{18}{2} = 9.5, 9$

II. $\dfrac{1}{\sqrt{y}}(9+3) = \sqrt{y} + 1 \Rightarrow 12 = y + \sqrt{y} \Rightarrow y + \sqrt{y} - 12 = 0$

SR = -1, PR = -12 $\Rightarrow \sqrt{y} = -4, 3 \Rightarrow y = 16, 9$

22. **Ans (2): $x < y$**

I. SR = 1, PR = -20 $\Rightarrow x = \dfrac{5}{10}, \dfrac{-4}{10} = 0.5, 0.4$

II. SR = 11, PR = 24 $\Rightarrow y = \dfrac{8}{4}, \dfrac{3}{4} = 2, 0.75$

23. **Ans (1): $x > y$**

I. SR = 1050, PR = 270000 $\Rightarrow x$ = 600, 450

II. SR = 190, PR = 4800 $\Rightarrow y$ = 160, 30

24. Ans (1): $x > y$

I. SR = 137, PR = 1386 $\Rightarrow x = \frac{126}{18}, \frac{11}{18} = 7, 0.61$

II. SR = -35, PR = 286 $\Rightarrow y = \frac{-22}{2}, \frac{-13}{2} = -11, -6.5$

25. Ans (5): $x = y$ or no relation can be established

I. SR = 39, PR = 360 $\Rightarrow x = \frac{24}{20}, \frac{15}{20} = 1.2, 0.75$

II. SR = 51, PR = 560 $\Rightarrow y = \frac{35}{20}, \frac{16}{20} = 1.75, 0.8$

For (Qs.26-30):

Article	Cost price (in Rs.)	Selling price (in Rs.)	Marked Price (in Rs.)
A	20000	25000	32258
B	30000	33000	40000
C	45000	51750	69000
D	36000	43200	54000

26. Ans (5): Rs.36000

(20000 × 0.25) : (D × 0.2) = 25 : 36 $\Rightarrow$ 50000 : 2D = 25 : 36 $\Rightarrow$ 2D = 72000 $\Rightarrow$ D = Rs.36000

$\therefore$ The cost price of article D = Rs.36000

27. Ans (4): 121.8°

$\therefore$ Total selling price of all the articles = 25000 + 33000 + 51750 + 43200 = Rs.152950

$\therefore$ Angle formed by the selling price of article C $= \left[\frac{51750}{152950}\right] \times 360 = 121.8°$

28. Ans (1): Rs.29000

Selling price of article B = Rs.33000

Selling price of article C = Rs.51750

Since the discount percentage is 17.5% and 25% respectively in article B and C;

$\therefore$ Marked price of article B = Rs.40000

Marked price of article C Rs.69000

$\therefore$ Required difference = 69000 – 40000 = Rs.29000

29. Ans (2): Rs.22500

Selling price of article A = Rs.25000

When extra 10% discount is given:

$\therefore$ New selling price of article A = 25000 × 0.9 = Rs.22500

30. Ans (2): B

Amount of discount in article A = 32258.06 – 25000 = Rs.7258.06

Amount of discount in article B = 40000 – 33000 = Rs.7000

Amount of discount in article C = 69000 – 51750 = Rs.17250

Amount of discount in article D = 54000 – 43200 = Rs.10800

31. **Ans (1): Quantity A > Quantity B**

Quantity A: HCF is x then LCM will be $40x$

$x + 40x = 1476 \Rightarrow x = 36$

$\therefore$ HCF = 36 and LCM = 1440

HCF × LCM = Product of 2 numbers

36 × 1440 = 288 × Second number

Second number = 180

Sum of digits = 1 + 8 + 0 = 9

Quantity B: HCF (748, 408 and 952) = 68

Number of creates required to pack oranges = $\frac{748}{68} = 11$

Number of creates required to pack Apples = $\frac{408}{68} = 6$

Number of creates required to pack mangoes = $\frac{952}{68} = 14$

$\therefore$ Total number of creates = 11 + 6 + 14 = 31

Sum of digits = 3 + 1 = 4

32. **Ans (1): Quantity A > Quantity B**

Quantity A: Dealer's cost price is Rs.1000 for 1000 for 1000 gram goods

$\because$ He is using 30% less weight

Actual Cost price = Rs.700

Sell his good at 44% loss

Actual selling price = 1000 × 0.56 = Rs.560

Actual loss = $\frac{(700-560)}{700} \times 100 = 20\%$

Quantity B: Dealer's cost price is Rs.1000 for 1000 gram goods

$\because$ He is using 20% less weight

Actual Cost price = Rs.800

If profit is 37.5% on Rs.800

Selling price = 800 × 1.375 = Rs.1100

Profit at which the shopkeeper promises to sell = $\frac{(1100-1000)}{1000} = 10\% \Rightarrow x = 10\%$

33. **Ans (5): Quantity A = Quantity B**

Quantity A: Speed of sound = 1100 m/min

Speed of train = 60 km/hr = $\frac{(60 \times 1000)}{60} = 1000\text{m/min}$

Length of train will be equal to the distance travelled by sound in 1.5 min

Length of train = (1100 – 1000) × 1.5 = 150 m

Quantity B: Speed of the train = x m/sec

Length of the train = $(x + 5) \times 6 = (x + 10) \times 5$

x = 20 m/sec

Length of the train = (20 + 5) × 6 = 150 m

34. **Ans (1): Quantity A > Quantity B**

Quantity A:

Let remaining number of days = x days

$\therefore \frac{6+x}{24} + \frac{6+x}{30} + \frac{x}{40} = 1 \Rightarrow \frac{30+5x+24+4x+3x}{120} = 1$

$\Rightarrow 12x = 120 - 54 \Rightarrow x = \frac{66}{12} = 5.5$ days

Quantity B:

Number of days taken by C $= \frac{20}{2} = 10$days

Number of days taken by A = 10 + 2 = 12 days

$\therefore \frac{1}{20} + \frac{1}{12} + \frac{1}{10} = 1 \Rightarrow \frac{3+6+5}{60} = 1 \Rightarrow \frac{14}{60} = 1$

$\therefore$ Number of days $= \frac{60}{14} = \frac{30}{7}$days

Work done by A, B and c together in 1 day = 5 + 3 + 6 = 14 units

$\therefore$Time taken by A, B and C together to complete the work = $\frac{60}{14} = \frac{30}{7}$days

35. Ans (5): Quantity A = Quantity B or no relation

Quantity A: Average of 10 number = 14

If each number is multiplied with constant than the whole average gets multiplied with the same constant

$\therefore$New average = $14 \times 6 = 84$

Quantity B: the average of four consecutive multiples of four is 78

Numbers be x, $x + 4$, $x + 8$, $x + 12$

$\frac{x+x+4+x+8+x+12}{4} = 78 \Rightarrow 4x + 24 = 312 \Rightarrow 4x = 288 \Rightarrow x = 72$

Largest number = x + 12 = 84

36. Ans (2): 13

Let x, y and z be the number of Green, Orange and Yellow balls.

$\frac{{}^{y}C_1}{{}^{40}C_1} = \frac{3}{8} \Rightarrow \frac{y}{40} = \frac{3}{8} \Rightarrow y = 15$

$\therefore \frac{{}^{x}C_1}{{}^{39}C_1} = \frac{4}{13} \Rightarrow \frac{x}{39} = \frac{4}{13} \Rightarrow x = 12$

Number of Yellow gems = 40 – (15 + 12) = 13

37. Ans (3): 24 km/hr

Let x be the speed of the train and y be the speed of the person.

Case I: $\frac{80}{(x+6)\times\frac{5}{18}} = 8 \Rightarrow x + 6 = 36 \Rightarrow x = 30$ km/h

Case II: $\frac{80}{(30-y)\times\frac{5}{18}} = \frac{16}{3} \Rightarrow 30 - y = 54 \Rightarrow y = 24$ km/h

38. Ans (5): Rs.2800

Daily expenditure of A and B be Rs.M and Rs.N respectively

M : N = 7 : 9

M = $\frac{7N}{9}$

(M – 500) : (N – 500) = 11 : 17

17M – 8500 = 11N – 5500

17M – 11N = 3000

119N – 99N = 3000 × 9
20N = 27000 ⇒ N = 1350

$M = \left(\frac{7}{9}\right) \times 1350 = 1050$

New expenditure of A = 1050 – 500 = 550
New expenditure of B = 1350 – 500 = 850

Daily earning of A = $550 \times \frac{100}{20} = 2750$

Daily earning of B = $850 \times \frac{100}{20} = 4250$

$\therefore$ Required average of daily savings of A and B = $\frac{\left[\left(2750 \times \frac{80}{100}\right) + \left(4250 \times \frac{80}{100}\right)\right]}{2} = \text{Rs.}2800$

39. Ans (4): Rs.800

Difference between SI and CI for 2 years $= P\left(\frac{R}{100}\right)^2$

$\therefore 18 = P \times \frac{15 \times 15}{100 \times 100} \Rightarrow P = \text{Rs. } 800$

40. Ans (2): 40000

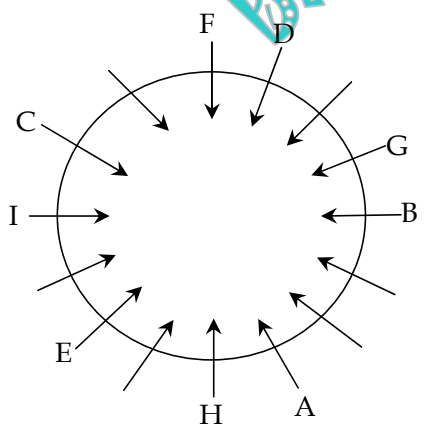
The share of P, Q and R, are
$[x \times 6 + (x - 10000) \times 6] : [(x + 5000) \times 12] : [(x - 10000) \times 8 + (x - 10000 + 5000) \times 4]$
$[6x + 6x - 60000] : [12x + 60000] : [8x - 80000 + 4x - 20000]$
$[12x - 60000] : [12x + 60000] : [12x - 100000]$

$\frac{[12x - 60000]}{[12x + 60000]} = \frac{21}{27} \Rightarrow \frac{(x - 5000)}{(x + 5000)} = \frac{7}{9}$

$9x - 45000 = 7x + 35000 \Rightarrow 2x = 80000 \Rightarrow x = 40000$

REASONING

For (Qs.41-45):



41. Ans (2): Fifteen

Fifteen persons are seated around the circular table.

42. Ans (1): G

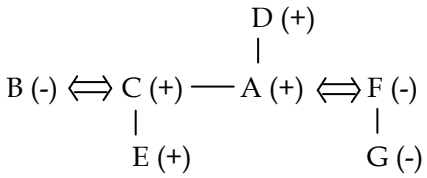
G sits immediate right of B.

43. Ans (4): 3
3 persons are seated between H and I.

44. Ans (4): HE
Except HE, all others are immediate neighbours to each other.

45. Ans (3): C
C sits exactly between D and E.

For (Qs.47-48):



47. Ans (4): Uncle
C is the uncle of G.

48. Ans (1): 3
B, F, and G are three females in the family.

For (Qs.49-53):

Box
T
V
P
Q
W
S
U
R

49. Ans (1): T
Box T is kept at the top

50. Ans (2): U
Box U is kept immediate below S

51. Ans (2): One
Only one box is kept between W and U

52. Ans (5): SV
All others are the immediate neighbors of each other except 'SV'.

53. Ans (4): P
Box P is kept between box V and box Q

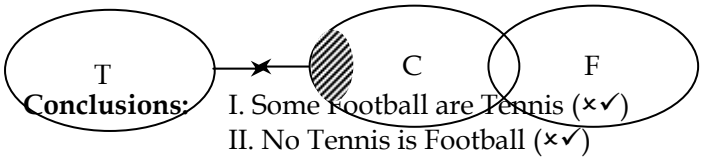
54. Ans (2): Only conclusion II is true
Statement: Z ≥ A ≥ B = Q ≤ P < J ≤ Y
Conclusions: I. Z > J (×) II. Z ≥ Q (✓)

55. **Ans (5): Both conclusions I and II are true**
Statements: S ≥ A = R > G
↓
R > T

Conclusions: I. S > G (✓) II. S > T (✓)

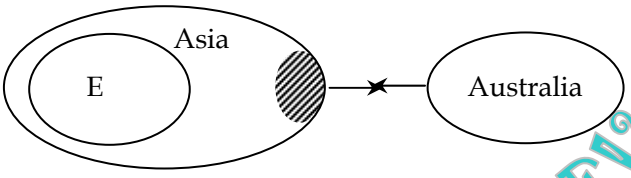
56. **Ans (4): Either conclusion I or II is true**
Statement: D ≤ K > H > U = P
Conclusions: I. D ≥ U (×✓) II. U > D (×✓)

57. **Ans (3): either conclusion I or II follows**



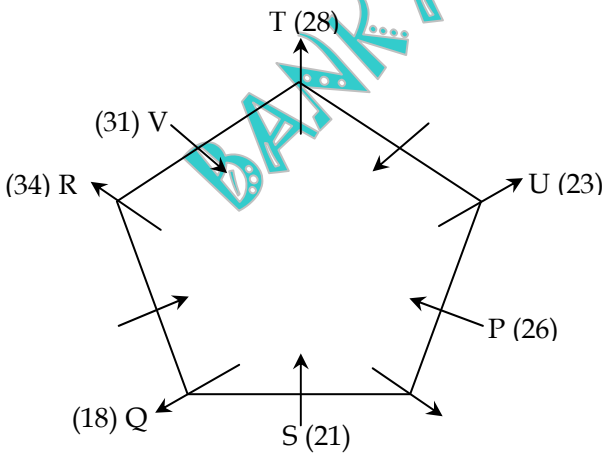
Conclusions: I. Some Football are Tennis (×✓)
II. No Tennis is Football (×✓)

58. **Ans (5): both conclusions I and II follow**



Conclusions: I. Some Europe is Australia is a possibility (✓)
II. All Australia is Europe is a possibility (✓)

For (Qs.59-63):



59. **Ans (5): None of these**
T sits 2nd to the right of the one whose age is 34 years.

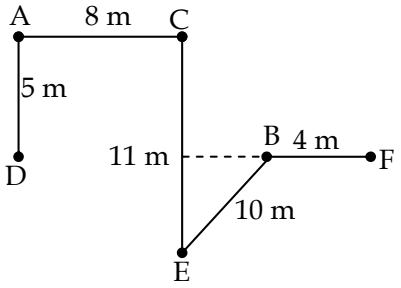
60. **Ans (1): 16 years**
Difference between the ages of Q and R = 16 years.

61. **Ans (2): 2**
Two persons sit between S and the one whose age is 31 years.

62. **Ans (5): R – 34**
The correct combination is R-34

63. **Ans (3):** The one whose age is 34 years sits immediate left of V

For (Qs.64-65):



64 **Ans (2): 10 m**
$DE = \sqrt{8^2 + 6^2} = \sqrt{100} = 10\,m$

65. **Ans (5): North-West**
A is in North-West direction of E.

For (Qs.66-70):

Box	Weight	Article
U	8	Cap
P	21	Pen
R	18	Ball
S	16	Book
Q	23	Bat
V	9	Cup
T	12	Mobile

66. **Ans (1): Q**
Box Q is just above box V.

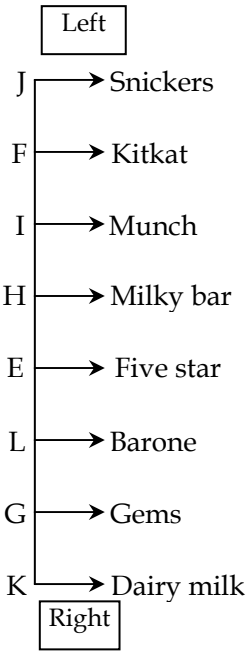
67. **Ans (3): 9 kg**
Difference between box has mobile and box above R = 21 – 12 = 9 kg.

68. **Ans (1): Three**
Three boxes are kept below box which contains book.

69. **Ans (5): All the above statements are not true**
Given statements are not true about the information given.

70. **Ans (1): V**
V is just above the box which has mobile.

For (Qs.71-75):



71. **Ans (2): I**
I likes Munch.

72. **Ans (2): The one who likes Five star**
The one who likes five star sits to the immediate left of L.

73. **Ans (3): Both (1) and (2)**
K and J who likes Snickers, sit at an extreme end of the row.

74. **Ans (1): None**
No one sits in the same position.

75. **Ans (4): More than three**
Four persons are seated between F and the one who likes Gems.

For (Qs.76-80): Explanation & Answer
Logic:
Letter: Opposite letter to the second last letter of the word.
Symbol: If no. of letter value even @; if odd value #.
Number: Addition of first and last letter of the word.
e.g.
FRESH ⇒ H#14
H ⇒ 2nd letter from last = S, and opposite letter of S = H
⇒ Number of letter value odd, then used
14 ⇒ First letter value F = 6; and last letter value H = 8 (so, 6 + 8 = 14)

1/26	2/25	3/24	4/23	5/22	6/21	7/20	8/19	9/18	10/17	11/16	12/15	13/14
A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26/1	25/2	24/3	23/4	22/5	21/6	20/7	19/8	18/9	17/10	16/11	15/12	14/13

76. Ans (4): M#25

77. Ans (4): X#23

78. Ans (2): U@17

79. Ans (1): H#38

80. Ans (3): I#39

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