

IBPS RRB Clerk Mains Memory Based Paper 2022**Reasoning Ability**

1) In which of the following expressions does the expression "P>U" definitely hold true?

- a) $Z \leq P \geq M \geq V < S = U \leq W$
- b) $R \leq P \geq M \geq V = S = U \leq W$
- c) $H > G < P \geq M > S < U \geq V$
- d) $W = R > V < P \geq M = S \geq U$
- e) $R < P \geq M = V \geq S > U \leq W$

2. B is the mother of only A and J. J is the brother-in-law of D. D is the only son of Q. Q is the grandfather of G. Only one child of Q is married. How is A related to G?

- a) Mother in law
- b) Son
- c) Niece
- d) Nephew
- e) Can't be determined.

Directions (3-7): Study the following information carefully and answer the questions given below

Nine people- L, S, G, F, K, J, D, H and A are sitting in a linear row with equal distance between each other. Some of them are facing north and some of them are facing south. The total number of people facing north is even.

S faces north. A sits fifth to the right of S, where neither of them sits at any of the extreme ends. D sits second to the right of A. More than three people are sitting between D and F. F is not an immediate neighbour of S. G sits third to the right of J, who is sitting adjacent to neither D nor

A. G is not an immediate neighbour of A. L sits second to the left of K and both faces north. Both immediate neighbours of L face south. Immediate neighbors of D face north. F and G face the same direction.

3. Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which one of the following does not belong to the group?

- a) FL
- b) LG
- c) HD
- d) FS
- e) JK

4. Who among the people sitting at the extreme ends?

- a) FA
- b) KH
- c) LD
- d) FK
- e) HA

5. Which of the following statement is true with respect to the final arrangement?

- a) F sits third to the left of H
- b) Only three people sit to the right of D
- c) Both the immediate neighbours of J face the same direction
- d) All the given statement is true
- e) All the given statement is false

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6. As many people sit between F and D as between __ and __?

- a) KG
- b) FH
- c) JA
- d) SL
- e) HK

7. Who sits second to the right of the one who sits immediate left of G?

- a) D
- b) J
- c) S
- d) L
- e) A

Directions (8-11): Study the following information carefully and answer the questions given below

Certain number of people are sitting in the row facing north. Only three people sit between M and A. C sits second to the left of A. Only five people sit between C and Q, who sits immediate right of K. N sits third to the right of K. S sits second to the right of N and sits fifth from one of the extreme ends. T sits immediate left of S. R sits second to the left of H, who sits exactly between M and N. The number of people sitting between C and N is one more than the number of people sitting to the right of N.

8. If M sits third from one of the extreme ends, then how many people are sitting in a row?

- a) 17
- b) 18
- c) 19
- d) 20
- e) 21

9. Who among the following persons are immediate neighbours of A?

- a) CH
- b) KQ
- c) TN
- d) RH
- e) MC

10. Which of the following statement(s) is/are true with respect to the final arrangement?

- I) K sits exactly between A and T
 - II) H sits third to the right of C
 - III) Five people sit between K and S
- a) Both I and II
 - b) Only II
 - c) Both I and III
 - d) Only III
 - e) All I, II and III

11. Which of the following will fill the blank given, C, R, __, Q, __?

- a) A, N
- b) H, T
- c) K, S
- d) A, T
- e) H, S

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12) If John correctly remembers that the event was held between 13th and 19th of May, Joy correctly remembers that the event was held between 14th and 21st of May and Joseph correctly remembers that the event was held between 16th and 23rd of may on a prime numbered date, then which date the event was held?

- a) 14th
- b) 15th
- c) 19th
- d) 17th
- e) Cannot be determined

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

Six people A, B, C, D, E and F are working in a company in different designations viz., Assistant manager (AM), Manager, Assistant general manager (AGM), Deputy general manager (DGM), General manager (GM), CEO where CEO is the seniormost designation and AM is the juniormost designation. They are from different cities viz., Ahmedabad, Mumbai, Chennai, Bangalore, Hyderabad and Delhi, but not necessarily in the same order.

B is junior to the one who is AGM. As many people senior to B as junior to the one who is from Ahmedabad. A is immediately junior to the one who is from Ahmedabad. E is immediately junior to C and senior to the one who is from Delhi. Neither the one who is from Delhi nor Mumbai is working in the junior-most

designation. The one who is from Chennai is senior to the one who is from Delhi. As many people senior to the one who is from Delhi as junior to the one who is from Hyderabad. A is not from Hyderabad. F is senior to the one who is from Mumbai and junior to the one who is from Ahmedabad.

13. Who is from Delhi and what is his designation?

- a) F-Deputy general manager
- b) E- Assistant general manager
- c) A- Deputy general manager
- d) E- CEO
- e) A- Assistant manager

14. How many people are senior to the one who is from Mumbai?

- A) Two
- b) One
- c) Three
- d) Four
- e) More than four

15. Which of the following combination is true?

- a) F-Mumbai
- b) C-Ahmedabad
- c) D-Hyderabad
- d) A-Chennai
- e) E-Ahmedabad

16. Which of the following statement is/are not true with respect to the final arrangement?

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- a) C is from Chennai and he is working as a general manager
- b) A is junior to the one who is from Bangalore and senior to E
- c) The one who is from Hyderabad is working as Assistant general manager
- d) Both a and b
- e) Both b and c

17. As many people senior to A as junior to ___?

- a) The one who is from Mumbai
- b) E
- c) C
- d) D
- e) The one who is from Hyderabad

Directions (18-20): Study the following information carefully to answer the questions.

Jude starts walking from point D towards west and walks for 12m to reach point E then he turns left and walks 10m to reach point F where he turns left and walks for 8m to reach point G. He then again turns right and walks for 5m to reach point L then he turns right and walks for 13m to reach point O where he turns right and walks for 20m to reach point H. He then turns right again and walks for 5m to reach point M where he turns left and walks for 3m to reach point N.

18) Four of the following five are alike in a certain way based on the directions of the points in the given arrangement and thus form a group.

Which one of the following doesn't belong to the group?

- a) F-D
- b) O-G
- c) H-N
- d) L-F
- e) O-N

19) If point Z is 5m west of point N, then what is the direction of point Z with respect to point F?

- a) Northeast
- b) Southwest
- c) North
- d) Northwest
- e) None of these

20) Which of the following points are in a straight line with respect to the final arrangement?

- a) E, D, and G
- b) H, E, and O
- c) N, E, and F
- d) M, G, and D
- e) D, F, and L

Directions (21-25): Study the following information carefully to answer the questions.

Ten people M, N, O, P, Q, R, S, T, U and V bought a thing one after another. No one bought a thing other than given people.

Only three people bought a thing between M and N. Only one person bought a thing between N and T who bought a thing after N. Only two people bought a thing between T and R who

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bought a thing before N. Only two people bought a thing between R and U. Neither U nor P is the first person to buy a thing. P bought before V. Only two people bought a thing between S and O. S and Q bought a thing adjacent to each other.

21) Who among the following person bought a thing two persons before R?

- a) U
- b) S
- c) Q
- d) T
- e) O

22) How many persons bought a thing between U and T?

- a) Four
- b) Five
- c) Six
- d) Three
- e) One

23) Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which one of the following doesn't belong to the group?

- a) O-Q
- b) R-P
- c) N-T
- d) U-S
- e) R-T

24) Who among the following person bought a thing exactly between S and M?

- a) R
- b) T
- c) N
- d) P
- e) V

25) Which of the following statements is/are true with respect to the final arrangement?

- a) Q bought a thing immediately after N
- b) Only five people bought a thing between Q and T
- c) R bought a thing four people before V
- d) All are true
- e) None of these

Directions (26-28): Study the following information carefully and answer the questions given below

Six people A, B, C, D, E and F are of different heights. F is taller than both A and C. F is not the tallest person. B is taller than A but not taller than E. As many people taller than B as shorter than D. A is taller than D. The height of the second shortest person is 164cm and the difference between the heights of F and D is 13cm.

26. What may be the height of A?

- a) 189 cm
- b) 178 cm
- c) 187 cm

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- d) 168 cm
- e) 151 cm

27. How many people are taller than F?

- a) One
- b) Two
- c) Three
- d) Four
- e) Can't be determined.

28. If the sum of the height of D and C is 326cm and the sum of the height of F and E is 366cm, then what is the difference between the height of C and E?

- a) 25cm
- b) 26cm
- c) 27cm
- d) 28cm
- e) 29cm

Directions (29-33): Study the following information carefully to answer the questions.

Eleven people are sitting around a circular table facing the centre.

P sits third to the left of R. T sits fourth to the left of S. M and R are immediate neighbours. Neither T nor S is an immediate neighbour of R and P. Only one person sits between T and Y (either from left or right). N sits third to the left of E who sits adjacent to K. L sits second to the right of G.

29) Who among the following persons sit immediate neighbours of R?

- a) P and S
- b) K and T
- c) E and M
- d) N and Y
- e) G and L

30) How many people are sitting between Y and K when counted from the left of K?

- a) Six
- b) Four
- c) Five
- d) Three
- e) One

31) What will come in the place of ___?

KE, RM, GY, NP, ___

- a) PK
- b) ER
- c) LY
- d) MT
- e) YG

32) Who among the following person sits third to the left of T?

- a) K
- b) M
- c) E
- d) R
- e) N

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33) Which of the following statements is/are true with respect to the final arrangement?

- a) Only three people sit between M and P when counting from the left of M
- b) S sits adjacent to Y
- c) E sits fourth to the right of L
- d) All are true
- e) None is true

Directions (34-38): Study the following information carefully to answer the questions.

Six people A, B, C, D, E and F attend a seminar on six different days starting from Monday to Saturday of the same week. They all like different colours viz., blue, white, yellow, pink, black and red.

The one who likes blue attends the seminar on Thursday. Only one person attends the seminar between B and the one who likes blue. Only two people attend the seminar between A and F who attends the seminar immediately before B. As many people attend the seminar before A as after the one who likes white. The one who likes yellow attends the seminar three people before E. Only one person attends the seminar between the one who likes red and D. The one who likes red didn't attend the seminar on Friday. The one who likes black attends the seminar after the one who likes pink. The one who likes pink and D doesn't attend the seminar on consecutive days.

34) Who among the following person attends the seminar on Friday?

- a) The one who likes white
- b) B
- c) A
- d) C
- e) The one who likes pink

35) Who among the following person attends the seminar three people before the one who likes black?

- a) F
- b) A
- c) B
- d) D
- e) C

36) How many people attend the seminar between B and the one who likes pink?

- a) Three
- b) Two
- c) Four
- d) No one
- e) One

37) Which of the following statements is/are true with respect to the final arrangement?

- a) Only two people attend the seminar between F and the one who likes blue
- b) E likes black
- c) D attends the seminar on Tuesday
- d) All are true
- e) None is true

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38) Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which one of the following doesn't belong to the group?

- a) E-White
- b) A-Black
- c) F-Yellow
- d) B-Blue
- e) D-Pink

39) Which of the following symbols should be placed in the blank spaces respectively (in the same order from left to right) in order to complete the given expression in such a manner that "U > X" as well as "V < H" definitely holds true?

$X < L \leq Z _ U > H \geq S _ V$

- a) $\geq, =$
- b) $>, <$
- c) $\leq, >$
- d) \geq, \leq
- e) None of these

40) If the statement $H \leq W = X < U; M > N < W \leq P; Q \geq P < Y \leq Z$ is definitely true, then which of the following conclusion is false?

- a) $U > N$
- b) $H \leq P$
- c) $Q \geq Z$
- d) $N < P$
- e) $Q \geq W$

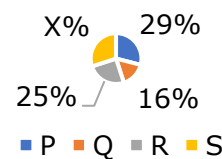
Quantitative Aptitude

Directions (01-05): Study the following information carefully and answer the given questions.

The given below pie chart shows the percentage distribution of the number of employees joined in four different companies i.e. P, Q, R and S in March 2018.

The given below table shows the number of employees in these four different companies till February 2018 and also given the number of employees left in those four different companies in November 2018.

% distribution of the number of employees joined in March 2018



Companies	Number of employees till February	Number of employees left November
P	324	225
Q	456	216
R	258	198
S	712	312

Note: No one joined the company except in March 2018. No one leaves the company except in November 2018. The number of employees in company S in December 2018 is 1120.

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1) Find the ratio of the number of employees in company R in December to the total number of employees left in company R and S together in November.

- a) 12:7
- b) 10:9
- c) 7:5
- d) 22:17
- e) None of these

2) If the ratio of number of male employees to female employees in company P and Q in March is 2:1 and 4:3 respectively, then find the total number of female employees in company P and Q together in March.

- a) 600
- b) 700
- c) 900
- d) 500
- e) None of these

3) If the number of employees in company T in December is 25% more than that of company Q and the ratio of the number of employees left in company P to T in November is 5:4, then find the number of employees in company T in August?

- a) 860
- b) 940
- c) 960
- d) 980
- e) None of these

4) The number of employees in company P in May is what percentage more/less than the number of employees who joined company R in March?

- a) 10% more
- b) 40% less
- c) 50% less
- d) 70% more
- e) 30% less

5) If the number of employees in company X in February is 90 more than the average number of employees in company P and Q in that month, then the number of employees who joined company S in March is what percentage of the number of employees in company X in February.

- a) 150%
- b) 80%
- c) 90%
- d) 110%
- e) None of these

6) 2 years ago, the age of A and B is 2:3. After 6 years, the ratio of the age of A to B is 6:7. If the average age of B and C is 10 years, then find the present age of C?

- a) 8 years
- b) 12 years
- c) 11 years
- d) 10 years
- e) 16 years

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7) A alone can complete the work in 15 days and the time taken by A alone to complete the work is 50% more than that of B. If A and B started the work on alternate days starting with B, then in how many days A and B together can complete the work?

- a) 6 days
- b) 8 days
- c) 12 days
- d) 9 days
- e) None of these

8) The number B is 75% more than that of A and the number C is 60 less than that of B and the ratio of the number of A to C is 2:y. If the average of the numbers A, B and C is 340, then find the value of y.

- a) 9
- b) 5
- c) 7
- d) 3
- e) 1

9) A started a business with an investment of Rs.6000. After X months, B joined with the investment of Rs.7000. At the end of eight years, the ratio of the profit share of A to B is 12:7. Find the value of X?

- a) 4
- b) 3
- c) 2
- d) 5
- e) 1

10) The marked price of A and B is Rs.120 and Rs.100 respectively and the ratio of the selling price of B to A is 3:5. If the discount offered on B is double the discount offered on A, then find the selling price of B?

- a) Rs.80
- b) Rs.60
- c) Rs.90
- d) Rs.70
- e) None of these

Directions (11-16): What value should come in the place of (?) in the following number series?

11) 100, 325, 69, 358, 34, ?

- a) 395
- b) 370
- c) 425
- d) 338
- e) 417

12) 1341, 450, 153, 54, 21, ?

- a) 4
- b) 10
- c) 7
- d) 8
- e) 5

13) 60.75, ?, 27, 18, 12, 8

- a) 81
- b) 33.5
- c) 48.6
- d) 54

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e) 40.5

14) 10, ?, 47, 112, 238, 455

- a) 31
- b) 27
- c) 34
- d) 19
- e) 25

15) 2, 6, 21, 110, ?, 8558

- a) 445
- b) 334
- c) 777
- d) 605
- e) 550

16) 18, 62, 93, 113, ?, 128

- a) 117
- b) 121
- c) 124
- d) 119
- e) 118

Directions (17-21): Read the following information carefully and answer the given questions.

There are three types of liquid in three vessels namely A, B and C.

Vessel A: Contains a mixture of milk and water in the ratio of 5:2.

Vessel B: Contains a mixture of P1 and milk in the ratio of 1:2.

Vessel C: Contains a mixture of P1 and water, the quantity of water is equal to the quantity of water in vessel A. If 40% of the mixture is taken out from the vessel, then the quantity of p1 becomes 15 liters.

Note: If 28 liters of mixture is taken out from vessel A and it is mixed into vessel B, then the quantity of milk in vessel B becomes 40 liters. The ratio of the initial quantity of mixture in vessels B to C is 6:13.

17) Find the ratio of the quantity of P1, milk and water in vessel B in the final mixture?

- a) 8:5:2
- b) 9:10:6
- c) 5:20:4
- d) 2:7:3
- e) None of these

18) Find the difference between the quantity of milk and water in the final mixture in vessel A.

- a) 48 liters
- b) 56 liters
- c) 64 liters
- d) 32 liters
- e) None of these

19) The initial quantity of water in vessel A is what percentage more than the initial quantity of P1 in vessel C?

- a) 30%
- b) 75%
- c) 45%
- d) 60%

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e) None of these

20) If the initial quantity of mixture in vessel A is 40% more than that of vessel D and the ratio of the quantity of P1, milk and water in vessel D is 2:5:3, then find the initial quantity of mixture in vessel D except water?

- a) 84 liters
- b) 70 liters
- c) 56 liters
- d) 63 liters
- e) None of these

21) The quantity of water in vessel C in the final mixture is how much less than the initial quantity of water in vessel A?

- a) 18 liters
- b) 30 liters
- c) 16 liters
- d) 25 liters
- e) None of these

Directions (22-27): The following question contains two equations I and II. You have to solve both equations and determine the relationship between them and give the answer as,

22)

I) $x^2 - 18x + 77 = 0$
II) $y^2 - 21y + 108 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.

d) $x < y$

e) $x \leq y$

23)

I) $x^2 - 10x - 75 = 0$

II) $y^2 + 18y + 65 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

24)

I) $x^2 + 14x + 45 = 0$

II) $y^2 + 21y + 110 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

25)

I) $x^2 - 9x - 36 = 0$

II) $2y^2 + 15y + 27 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

26)

I) $2x^2 - 13x + 20 = 0$

II) $y^2 - 16y + 63 = 0$

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- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

27)

I) $3x^2 - x - 24 = 0$

II) $y^2 - 11y + 24 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

28) 120 liters of a mixture of milk and water, $58\frac{1}{3}\%$ of the mixture is milk. If $(x+15)$ liters of mixture is taken out and 8 liters of milk is added to the mixture, then the difference between the quantity of milk and water in the resultant mixture is 20 liters. Find the value of x .

- a) 33
- b) 24
- c) 60
- d) 48
- e) None of these

29) In an election, two candidates were contested A and B. Out of the total votes, 25% of the votes are invalid and the remaining votes are valid. If the valid votes received by A is 14.28% more than that of B, then the number of valid votes received by A is what percentage of the total number of votes?

- a) 54%
- b) 45%
- c) 30%
- d) 40%
- e) None of these

30) The ratio of the income of A to B is 7:5 and the ratio of the expenditure of A to B is 2:3. If the expenditure of A is double the actual expenditure of A, then the savings of A becomes Rs.5000 and that of savings of B is Rs.3500. Find the income of B?

- a) Rs.10000
- b) Rs.6500
- c) Rs.5000
- d) Rs.7500
- e) None of these

31) The marks scored by X is 20% more than that of Y and the pass mark is 80. If the marks scored by X and Y is increased by 4 marks each, then the total marks scored by X and Y together is 20% more than the passing marks. Find the actual marks scored by Y.

- a) 48
- b) 60
- c) 50
- d) 40
- e) 72

32) The speed of trains A and B is x m/sec and 15 m/sec respectively. Train A overtakes train B in 16 seconds and the ratio of the length of train

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A to B is 21:19. Find the value of x. if train A crosses the 30 m platform in 6 seconds.

- a) 24
- b) 40
- c) 36
- d) 20
- e) None of these

Directions (33-35): Following questions have two quantities Quantity I and Quantity II. You have to determine the relationship between them and give the answer as,

SI and CI

33) A person distributes some amount to Ram and Sam in the ratio of 3:5. Ram invested the amount in simple interest at the rate of 7% per annum for 6 years and the total amount received by Ram is Rs.4260.

Quantity I: Find the amount received by Sam.

Quantity II: Rs.5000

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity II > Quantity I
- d) Quantity II \geq Quantity I
- e) Quantity I = Quantity II or Relation cannot be established

34) A boat covers 40 km downstream in 2 hours 30 minutes and the same boat covers 16 km upstream in 2 hours.

Quantity I: Find the distance covered by the boat upstream in 10.5 hours.

Quantity II: If the speed of the boat in still water is increased by 25%, then find the distance covered by the boat in still water in 6 hours.

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity II > Quantity I
- d) Quantity II \geq Quantity I
- e) Quantity I = Quantity II or Relation cannot be established

35) The side of the square is 20% more than that of the breadth of the rectangle and the length of the rectangle is 1 m more than the side of the square and the perimeter of the rectangle is 6 m less than that of the square.

Quantity I: Perimeter of the rectangle.

Quantity II: Find the circumference of the semicircle, whose radius is 10 m less than the side of the square.

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity II > Quantity I
- d) Quantity II \geq Quantity I
- e) Quantity I = Quantity II or Relation cannot be established

Directions (36-40): Study the following information carefully and answer the questions given below.

The given below table shows the percentage distribution of the total number of flats (1 BHK and 2 BHK) in four different societies i.e. P, Q, R and S in 2016 and also given the percentage by

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which 2 BHK flats is less than that of 1 BHK flats in each society in 2016.

Note: Average number of flats in all the given four different societies is 125.

Societies	Percentage of the total number of flats	Percentage by which 2 BHK flats is less than that of 1 BHK flats
P	Z	75%
Q	3Z	50%
R	3Z-5	75%
S	4Z-5	60%

36) If the total number of 2 BHK flats in all the given four societies is $\frac{3}{5}$ th of the total number of 3 BHK flats in all the given four societies, then find the total number of 3 BHK flats in all the given four societies?

- a) 225
- b) 450
- c) 315
- d) 575
- e) None of these

37) The total number of 1 BHK flats in societies R and S together is what percentage of the total number of flats in society Q?

- a) 110%
- b) 120%
- c) 100%
- d) 150%
- e) None of these

38) If the number of 1 BHK and 2 BHK flats in society X is 20 more and 25 less than that of society S, then find the ratio of the total number of flats in society S to society X.

- a) 11:9
- b) 35:34
- c) 12:7
- d) 20:19
- e) None of these

39) If the length and breadth of each 1 BHK flat in society P is 15 m and 10 m respectively, then find the total area of 1 BHK flats in society P.

- a) 5200 m²
- b) 4400 m²
- c) 6000 m²
- d) 3600 m²
- e) None of these

40) In society T, the number of 1 BHK flats is 80 more than that of 2 BHK flats. If the total number of flats in society T is equal to the average number of flats in societies P and Q together, then find the difference between the number of 2 BHK flats in societies T and S.

- a) 30
- b) 40
- c) 70
- d) 50
- e) None of these

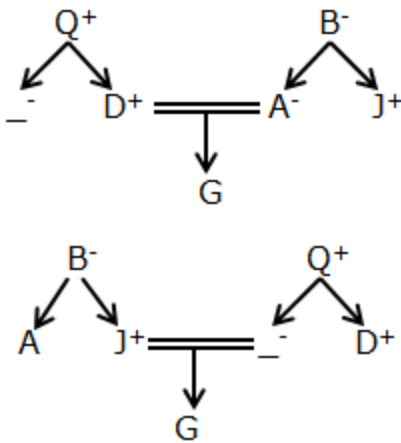
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Answer Key with Explanation

Reasoning Ability

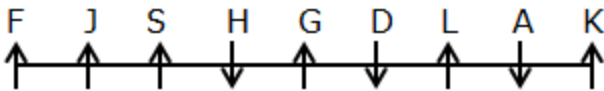
1) Answer: E

2) Answer: E



Directions (3-7):

Final arrangement:



3. Answer: C (In the given options, the pair of people are facing north, except in option c)

4. Answer: D

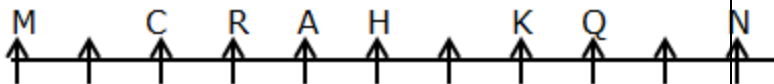
5. Answer: C

6. Answer: E

7. Answer: B

Directions (8-11)

Final arrangement:



8. Answer: C

9. Answer: D

10. Answer: B

11. Answer: E

12) Answer: D

Directions (13-17)

13. Answer: C

14. Answer: D

15. Answer: E

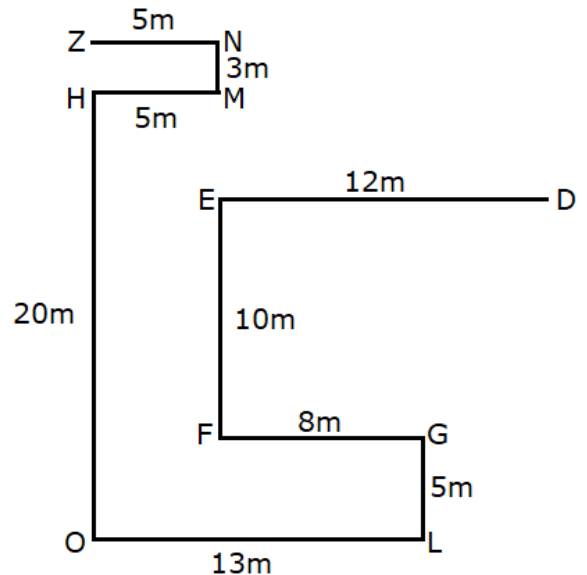
16. Answer: D

17. Answer: E

Final arrangement:

Designations	Peoples	Place
CEO	C	Chennai
GM	E	Ahmedabad
DGM	A	Delhi
AGM	F	Hyderabad
Manager	B	Mumbai
AM	D	Bangalore

Directions (18-20):



18) Answer: D (The second point is to the northeast of the first point, except option d)

19) Answer: D

20) Answer: C

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Directions (21-25):

Person
O
U
Q
S
R
N
P
T
V
M

21) Answer: C

22) Answer: B

23) Answer: E (Only one person bought a thing between them, except option e)

24) Answer: D

25) Answer: C

Directions (26-28)

26. Answer: D

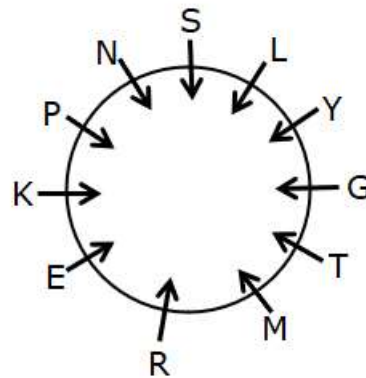
27. Answer: B

28. Answer: C

Final arrangement:

$E > B > F > A > D > C$
177 164

Directions (29-33):



29) Answer: C

30) Answer: B

31) Answer: D

32) Answer: C

33) Answer: A

Directions (34-38):

Day	Name & Colour
Monday	F-Red
Tuesday	B-Yellow
Wednesday	D-White
Thursday	A-Blue
Friday	E-Pink
Saturday	C-Black

34) Answer: E

35) Answer: D

36) Answer: B

37) Answer: A

38) Answer: C (Only one person attends the seminar between them, except option c)

39) Answer: C

40) Answer: C

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Quantitative Aptitude

Directions (01-05):

Company S:

Number of employees in December = 1120
 Number of employees joined in March = $1120 - 712 + 312 = 720$
 $X\% + 29\% + 16\% + 25\% = 100\%$
 $X\% = 30\%$

Total number of employees joined in all the given four companies together in March = $720 * 100/30 = 2400$

Company P:

Number of employees joined in March = $2400 * 29/100 = 696$
 Number of employees in December = $324 + 696 - 225 = 795$

Company Q:

Number of employees joined in March = $2400 * 16/100 = 384$
 Number of employees in December = $456 + 384 - 216 = 624$

Company R:

Number of employees joined in March = $2400 * 25/100 = 600$
 Number of employees in December = $258 + 600 - 198 = 660$

Companies	Number of employees till February	Number of employees who joined in March	Number of employees left in November	Number of employees in December
P	324	696	225	795
Q	456	384	216	624
R	258	600	198	660
S	712	720	312	1120

1) Answer: D

Number of employees in company R in December = 660
 Number of employees left in company R and S together in November = $198 + 312 = 510$
 Required ratio = $660:510 = 22:17$

2) Answer: B

Total number of employees in company P in March = $324 + 696 = 1020$
 Number of female employees in company P in March = $1020 * 1/(2 + 1) = 1020 * 1/3 = 340$
 Total number of employees in company Q in March = $456 + 384 = 840$
 Number of female employees in company Q in March = $840 * 3/(4 + 3) = 840 * 3/7 = 360$
 Required sum = $340 + 360 = 700$

3) Answer: C

Number of employees in company T in December = $624 * 125/100 = 780$
 Number of employees left in company T in November = $225 * 4/5 = 180$
 Therefore, the number of employees in company T in August = $780 + 180 = 960$

4) Answer: D

Number of employees in company P in May = $324 + 696 = 1020$
 Required percentage = $(1020 - 600)/600 * 100 = 420/600 * 100 = 70\%$ more

5) Answer: A

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Average number of employees in companies P and Q in February = $(324 + 456)/2 = 780/2 = 390$

Number of employees in company X in February = $390 + 90 = 480$

Required percentage = $720/480 * 100 = 150\%$

6) Answer: B

ACQ,

$$(2x + 2 + 6)/(3x + 2 + 6) = 6/7$$

$$(2x + 8) * 7 = (3x + 8) * 6$$

$$14x + 56 = 18x + 48$$

$$4x = 8$$

$$x = 2$$

The present age of B = $3 * 2 + 2 = 8$ years

Therefore, the present age of C = $10 * 2 - 8 = 20 - 8 = 12$ years

7) Answer: C

A alone complete the work = 15 days

The ratio of the time taken by A to B = 150:100 = 3:2

B alone complete the work = $15 * 2/3 = 10$ days

Total work = 30 units (LCM of 15 and 10)

A's one day work = $30/15 = 2$ units

B's one day work = $30/10 = 3$ units

Work done in 2 days = $3 + 2 = 5$ units

Therefore, the required time = $30/5 * 2 = 12$ days

8) Answer: D

Let the number A = $4x$

And the number B = $4x * 175/100 = 4x * 7/4 = 7x$

And the number C = $7x - 60$

ACQ,

$$4x + 7x + 7x - 60 = 340 * 3$$

$$18x = 1020 + 60$$

$$x = 1080/18$$

$$x = 60$$

The number A = $4 * 60 = 240$

And the number C = $7 * 60 - 60 = 420 - 60 = 360$

$$2/y = 240/360$$

$$y = 3$$

Therefore, the value of $y = 3$

9) Answer: A

ACQ,

$$(6000 * 8)/(7000 * (8 - X)) = 12/7$$

$$48 * 7/12 = 56 - 7X$$

$$7X = 56 - 28$$

$$X = 28/7$$

$$X = 4$$

Therefore, the value of $X = 4$

10) Answer: B

The ratio of the discount offered on A to B = 1:2

$$120 - 1x/(100 - 2x) = 5/3$$

$$(120 - 1x) * 3 = 5 * (100 - 2x)$$

$$360 - 3x = 500 - 10x$$

$$7x = 140$$

$$x = 20$$

Therefore, the selling price of B = $100 - 2 * 20 = 100 - 40 = \text{Rs.}60$

11) Answer: A

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$$100 + 15^2 = 325$$

$$325 - 16^2 = 69$$

$$69 + 17^2 = 358$$

$$358 - 18^2 = 34$$

$$34 + 19^2 = 395$$

12) Answer: B

$$1341 \div 3 + 3 = 450$$

$$450 \div 3 + 3 = 153$$

$$153 \div 3 + 3 = 54$$

$$54 \div 3 + 3 = 21$$

$$21 \div 3 + 3 = 10$$

13) Answer: E

$$8 * 1.5 = 12$$

$$12 * 1.5 = 18$$

$$18 * 1.5 = 27$$

$$27 * 1.5 = 40.5$$

$$40.5 * 1.5 = 60.75$$

14) Answer: D

$$10 + 2^3 + 1 = 19$$

$$19 + 3^3 + 1 = 47$$

$$47 + 4^3 + 1 = 112$$

$$112 + 5^3 + 1 = 238$$

$$238 + 6^3 + 1 = 455$$

15) Answer: C

$$2 * 2 + 2 = 6$$

$$6 * 3 + 3 = 21$$

$$21 * 5 + 5 = 110$$

$$110 * 7 + 7 = 777$$

$$777 * 11 + 11 = 8558$$

16) Answer: C

$$18 \quad 62 \quad 93 \quad 113 \quad 124 \quad 128$$

$$44 \quad 31 \quad 20 \quad 11 \quad 4$$

$$-13 \quad -11 \quad -9 \quad -7$$

Directions (17-21):

The ratio of the initial quantity of milk to water in vessel A = 5:2

Let the initial quantity of P1 in vessel B = 1a

And the initial quantity of milk in vessel B = 2a

$$2a + 28 * \frac{5}{5+2} = 40$$

$$2a + 28 * \frac{5}{7} = 40$$

$$2a = 40 - 20$$

$$a = 20/2$$

$$a = 10$$

The initial quantity of P1 in vessel B = 10 liters

And the initial quantity of Milk in vessel B = 2 * 10 = 20 liters

$$10 = 20 \text{ liters}$$

The quantity of milk in vessel B in the final mixture = 20 + 20 = 40 liters

$$\text{mixture} = 20 + 20 = 40 \text{ liters}$$

The quantity of water in vessel B in the final mixture = 28 - 20 = 8 liters

$$\text{mixture} = 28 - 20 = 8 \text{ liters}$$

The initial quantity of mixture in vessel B = 20 + 10 = 30 liters

$$10 = 30 \text{ liters}$$

The initial quantity of mixture in vessel C = 30 * 13/6 = 65 liters

$$13/6 = 65 \text{ liters}$$

The initial quantity of milk in vessel A = 5b

The initial quantity of water in vessel A = 2b

The initial quantity of water in vessel C = 2b

The initial quantity of P1 in vessel C = c

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$$c * (100 - 40)/100 = 15$$

$$c * 60/100 = 15$$

$$c = 25$$

$$2b = 65 - 25 = 40$$

$$b = 20$$

The initial quantity of P1 in vessel C = 25 liters

And the initial quantity of water in vessel C = 40 liters

The initial quantity of water in vessel A = 40 liters

And the quantity of water in vessel A in the final mixture = $40 - 8 = 32$ liters

The initial quantity of milk in vessel A = $40 * 5/2 = 100$ liters

And the quantity of milk in vessel A in the final mixture = $100 - 20 = 80$ liters

Vessels	The initial quantity of milk	The initial quantity of water	The initial quantity of P1
A	100 liters	40 liters	-
B	20 liters	-	10 liters
C	-	40 liters	25 liters

17) Answer: C

$$\text{Required ratio} = 10:40:8 = 5:20:4$$

18) Answer: A

$$\text{Required difference} = 80 - 32 = 48 \text{ liters}$$

19) Answer: D

$$\begin{aligned} \text{Required percentage} &= (40 - 25)/25 * 100 = \\ 15/25 * 100 &= 60\% \end{aligned}$$

20) Answer: B

The initial quantity mixture in vessel A = $100 + 40 = 140$ liters

And the initial quantity of mixture in vessel D = $140 * 100/140 = 100$ liters

Therefore, the initial quantity of mixture in vessel D except water = $100 * (2 + 5)/(2 + 5 + 3) = 100 * 7/10 = 70$ liters

21) Answer: C

The quantity of water in vessel C in final mixture = $40 * (100 - 40)/100 = 40 * 60/100 = 24$ liters

Required difference = $40 - 24 = 16$ liters

22) Answer: C

$$x^2 - 18x + 77 = 0$$

$$x^2 - 11x - 7x + 77 = 0$$

$$x(x - 11) - 7(x - 11) = 0$$

$$x = + 11, + 7$$

$$y^2 - 21y + 108 = 0$$

$$y^2 - 12y - 9y + 108 = 0$$

$$y(y - 12) - 9(y - 12) = 0$$

$$y = + 12, + 9$$

The relationship can't be determined

23) Answer: B

$$x^2 - 10x - 75 = 0$$

$$x^2 - 15x + 5x - 75 = 0$$

$$x(x - 15) + 5(x - 15) = 0$$

$$x = + 15, - 5$$

$$y^2 + 18y + 65 = 0$$

$$y^2 + 13y + 5y + 65 = 0$$

$$y(y + 13) + 5(y + 13) = 0$$

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$$y = -13, -5$$

Hence, $x \geq y$

24) Answer: A

$$x^2 + 14x + 45 = 0$$

$$x^2 + 9x + 5x + 45 = 0$$

$$x(x + 9) + 5(x + 9) = 0$$

$$x = -9, -5$$

$$y^2 + 21y + 110 = 0$$

$$y^2 + 11y + 10y + 110 = 0$$

$$y(y + 11) + 10(y + 11) = 0$$

$$y = -11, -10$$

Hence, $x > y$

25) Answer: B

$$x^2 - 9x - 36 = 0$$

$$x^2 - 12x + 3x - 36 = 0$$

$$x(x - 12) + 3(x - 12) = 0$$

$$x = +12, -3$$

$$2y^2 + 15y + 27 = 0$$

$$2y^2 + 6y + 9y + 27 = 0$$

$$2y(y + 3) + 9(y + 3) = 0$$

$$y = -3, -9/2$$

$$y = -3, -4.5$$

Hence, $x \geq y$

26) Answer: D

$$2x^2 - 13x + 20 = 0$$

$$2x^2 - 8x - 5x + 20 = 0$$

$$2x(x - 4) - 5(x - 4) = 0$$

$$x = +4, +5/2$$

$$x = +4, +2.5$$

$$y^2 - 16y + 63 = 0$$

$$y^2 - 7y - 9y + 63 = 0$$

$$y(y - 7) - 9(y - 7) = 0$$

$$y = +7, +9$$

Hence, $x < y$

27) Answer: E

$$3x^2 - x - 24 = 0$$

$$3x^2 - 9x + 8x - 24 = 0$$

$$3x(x - 3) + 8(x - 3) = 0$$

$$x = +3, -8/3$$

$$x = +3, -2.67$$

$$y^2 - 11y + 24 = 0$$

$$y^2 - 8y - 3y + 24 = 0$$

$$y(y - 8) - 3(y - 8) = 0$$

$$y = +8, +3$$

28) Answer: A

The ratio of the quantity of milk to water =
 $58(1/3):(100 - 58(1/3)) = 175/3:(100 - 175/3) =$
 $175/3:125/3 = 7:5$

Milk in 120 liters of mixture = $120 * 7/(7 + 5) =$
 $120 * 7/12 = 70$ liters

Water in 120 liters of mixture = $120 - 70 = 50$
liters

ACQ,

$$70 - (x + 15) * 7/(7 + 5) + 8 = 20 + 50 - (x + 15) * 5/(7 + 5)$$

$$70 - (x + 15) * 7/12 + 8 = 70 - (x + 15) * 5/12$$

 $- 7x/12 - 105/12 + 8 = - 5x/12 - 75/12$

$$2x/12 = - 105/12 + 75/12 + 8$$

$$x/6 = 8 - 30/12$$

$$x = (96 - 30)/12 * 6$$

$$x = 66/2$$

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$$x = 33$$

Therefore, the value of $x = 33$

29) Answer: D

The ratio of the number of valid votes received by A to B = 114.28:100 = 8:7

$$\text{The total votes} = (8x + 7x) * 100/75 = 15x * 100/75 = 20x$$

$$\text{Required percentage} = 8x/20x * 100 = 40\%$$

30) Answer: C

Let the income of A = $7x$

The income of B = $5x$

The expenditure of B = $3y$

The actual expenditure of A = $2y$

The new expenditure of A = $2y * 2 = 4y$

$$7x - 4y = 5000 \text{ ---(1)}$$

$$5x - 3y = 3500 \text{ ---(2)}$$

From (1) and (2),

$$21x - 12y = 15000$$

$$- 20x + 12y = - 14000$$

$$x = 1000$$

Therefore, the income of B = $5 * 1000 = \text{Rs.}5000$

31) Answer: D

Let the actual marks scored by Y = $5a$

And the actual marks scored by X = $5a *$

$$120/100 = 6a$$

ACQ,

$$6a + 4 + 5a + 4 = 80 * 120/100$$

$$11a + 8 = 96$$

$$11a = 88$$

$$a = 8$$

Therefore, the marks scored by Y = $5 * 8 = 40$ marks

32) Answer: B

Let the length of train A = $21a$

And the length of train B = $19a$

$$21a + 30 = x * 6$$

$$7a + 10 = 2x \text{---(1)}$$

$$21a + 19a = (x - 15) * 16$$

$$40a = 16x - 240 \text{---(2)}$$

From (1) and (2),

$$- 56a - 80 = - 16x$$

$$40a = 16x - 240$$

$$16a = 160$$

$$a = 10$$

The length of train A = $21 * 10 = 210 \text{ m}$

$$x = (210 + 30)/6 = 240/6 = 40$$

Therefore, the value of $x = 40$

33) Answer: E

Let the principal of Ram = $3x$

$$3x * 6 * 7/100 + 3x = 4260$$

$$126x + 300x = 4260 * 100$$

$$426x = 4260 * 100$$

$$x = 1000$$

Therefore, the amount received by Sam = $5 * 1000 = \text{Rs.}5000$

From quantity I,

Amount received by Sam = $5 * 1000 = \text{Rs.}5000$

From quantity II,

Rs.5000

Hence, Quantity I = Quantity II

IBPS RRB Clerk Mains Memory Based Paper 2022**34) Answer: C**

The downstream speed of the boat = $40/2.5 = 16$ km/hr

The upstream speed of the boat = $16/2 = 8$ km/hr

The speed of the boat in still water = $(16 + 8)/2 = 24/2 = 12$ km/hr

The speed of the stream = $16 - 12 = 4$ km/hr

From quantity I,

Therefore, the distance covered by the boat in upstream = $8 * 10.5 = 84$ km/hr

From quantity II,

The speed of the boat in still water is increased by 25% = $12 * 125/100 = 15$ km/hr

Required distance = $15 * 6 = 90$ km/hr

Hence, Quantity II > Quantity I

35) Answer: A

Let the breadth of the rectangle = $5x$

And the side of the square = $5x * 120/100 = 6x$

The length of the rectangle = $6x + 1$

$$4 * 6x - 2 * (5x + 6x + 1) = 6$$

$$24x - 2 * (11x + 1) = 6$$

$$24x - 22x - 2 = 6$$

$$2x = 8$$

$$x = 4$$

From quantity I,

$$\begin{aligned} \text{The perimeter of the rectangle} &= 2 * (11 * 4 + 1) \\ &= 2 * 45 = 90 \text{ m} \end{aligned}$$

From quantity II,

$$\text{The side of the square} = 6 * 4 = 24 \text{ m}$$

$$\text{The radius of the semicircle} = 24 - 10 = 14 \text{ m}$$

Therefore, the circumference of the semicircle = $22/7 * 14 + 2 * 14 = 72 \text{ m}$

Quantity I > Quantity II

Directions (36-40):

Let the total number of flats in all four societies = 100

$$100 = Z + 3Z + 3Z - 5 + 4Z - 5$$

$$100 = 11Z - 10$$

$$110 = 11Z$$

$$Z = 10$$

The total number of flats in all the given four societies = $125 * 4 = 500$

Society P:

The total number of flats = $10 * 500/100 = 50$

The ratio of the number of 2 BHK to 1 BHK flats = $(100 - 75):100 = 25:100 = 1:4$

The number of 2 BHK flats = $50 * 1/(1 + 4) = 50 * 1/5 = 10$

The number of 1 BHK flats = $50 - 10 = 40$

Society Q:

The total number of flats = $(3 * 10) * 500/100 = 150$

The ratio of the number of 2 BHK to 1 BHK flats = $(100 - 50):100 = 50:100 = 1:2$

The number of 2 BHK flats = $150 * 1/(1 + 2) = 150 * 1/3 = 50$

The number of 1 BHK flats = $150 - 50 = 100$

Society R:

The total number of flats = $(3 * 10 - 5) * 500/100 = (30 - 5) * 500/100 = 25 * 500/100 = 125$

The ratio of the number of 2 BHK to 1 BHK flats = $(100 - 75):100 = 25:100 = 1:4$

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The number of 2 BHK flats = $125 * 1/(1 + 4) = 125 * 1/5 = 25$

The number of 1 BHK flats = $125 - 25 = 100$

Society S:

The total number of flats = $(4 * 10 - 5) * 500/100 = (40 - 5) * 500/100 = 35 * 5 = 175$

The ratio of the number of 2 BHK to 1 BHK flats = $(100 - 60):100 = 40:100 = 2:5$

The number of 2 BHK flats = $175 * 2/(2 + 5) = 175 * 2/7 = 50$

The number of 1 BHK flats = $175 - 50 = 125$

Societies	The total number of flats	The number of 1 BHK flats	The number of 2 BHK flats
P	50	40	10
Q	150	100	50
R	125	100	25
S	175	125	50

36) Answer: A

The total number of 2 BHK flats in all the given four societies = $10 + 50 + 25 + 50 = 135$

Therefore, the total number of 3 BHK flats in all the given four societies = $135 * 5/3 = 225$

37) Answer: D

The total number of flats in society Q = 150

The total number of 1 BHK flats in societies R and S together = $100 + 125 = 225$

Required percentage = $225/150 * 100 = 150\%$

38) Answer: B

The total number of 1 BHK flats in society X = $125 + 20 = 145$

And the total number of 2 BHK flats in society X = $50 - 25 = 25$

The total number of flats in society X = $145 + 25 = 170$

Required ratio = $175:170 = 35:34$

39) Answer: C

The area of each 1 BHK flat in society P = $15 * 10 = 150 \text{ m}^2$

Therefore, the total area of 1 BHK flats in society P = $40 * 150 = 6000 \text{ m}^2$

40) Answer: B

The total number of flats in society T = $(50 + 150)/2 = 200/2 = 100$

The number of 2 BHK flats in society T = $(100 - 80)/2 = 20/2 = 10$

Required difference = $50 - 10 = 40$