IBPS RRB PO MEMORY BASED MOCK

IBPS RRB PO Pre 2023 Memory Based Mock-01

Directions (1-5): **Study the following information carefully and answer the questions given below:**
Eight persons P, Q, R, S, T, U, V and W were born in different years viz. 1994, 1996, 1998, 1999, 2001, 2002, 2004 and 2005 but not necessarily in the same order. Base year is counted as 2021.
At most one person is older to P. Two persons were born between P and V. Q was born just before V in the odd numbered year. R is 4 years older to T. W is older to U and younger to S.

Q1. **Who was born in the year 1998?**
(a) P
(b) Q
(c) R
(d) T
(e) U

Q2. **In which year S was born?**
(a) 2002
(b) 1999
(c) 2001
(d) 1998
(e) 2005

Q3. **Which of the following statements is true?**
(a) P was born in 1994.
(b) V was born in 1996.
(c) T is the oldest among all.
(d) U was born in 2002.
(e) R is older than P.

Q4. **How many persons were born between W and T?**
(a) 1
(b) 2
(c) 3
(d) 4
(e) Cannot be determined

Q5. **Who is the oldest person among them?**
(a) P
(b) Q
(c) R
(d) S
(e) V

Directions (6-8): **In each of the questions below some statements are given followed by two conclusions. 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.**
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

Q6. **Statements:** All flowers are plants. Only a few plants are fruits. No fruits is vegetables.
Conclusion I: Some flowers are fruits.
Conclusion II: Some pants are not vegetables.

Q7. **Statements:** Only birds are mammals. All birds are eggs. No birds are reptiles.
Conclusion I: Some mammals are eggs.
Conclusion II: Some reptiles can be birds.

Q8. **Statements:** Only a few apples are oranges. All oranges are bananas. Only bananas are grapes.
Conclusion I: Some apples are bananas.
Conclusion II: Some grapes are not oranges.

Directions (9-13): **Study the following information carefully and answer the questions given below:**
Nine boxes are arranged one above the other. More than four boxes are placed below the box G.
Three boxes are placed between box G and box H. The numbers of boxes are placed above box H is same as the numbers of boxes placed below box C. Box A is placed two places above the box E which is placed just above the box I. Box F and box H are not placed adjacent to each other. Box B is placed above the box D.

Q9. **Which box is placed exactly in the middle of the arrangement?**
(a) A
(b) E
(c) C
(d) D
(e) None of these

Q10. **How many boxes are placed between boxes A and I?**
(a) Two
(b) Three
(c) One
(d) More than four
(e) None of these

Q11. **If box F is placed immediately below box D, how many boxes are there between boxes F and G?**
(a) Two
(b) Three
(c) One
(d) Four
(e) None of these

Q12. **The numbers of boxes are placed between box G and box H is same as the numbers of boxes are placed between box ___ and box ____.**
(a) C, H
(b) F, G
(c) G, A
(d) H, B
(e) I, C

Q13. **Which of the following statement is true?**
I. Box F is placed above the box E
II. More than two boxes are placed between box A and box I
III. No box is placed below the box H
(a) Both II and III
(b) Only I
(c) Both I and II
(d) Only II
(e) All I, II and III

Directions (14-16): **In these questions, relationship between different elements is shown in the statements. These statements are followed by two conclusions. Mark answer as**
(a) If only conclusion I follows.
(b) If only conclusion II follows.
(c) If either conclusion I or II follows.
(d) If neither conclusion I nor II follows.
(e) If both conclusions I and II follow.

Q14. Statements: $J < Q \leq L = M$; $K = Q > P$
Conclusions: I. $J < P$ II. $M > P$

Q15. Statements: $A < K < T = C > Y$; $T = N > P$
Conclusions: I. $N > A$ II. $C > P$

Q16. Statements: $G \geq H > I = L < M$; $V \leq K < O$
Conclusions: I. $O \geq I$ II. $L > O$

Directions (17-20): **Study the following information carefully and answer the questions given below:**
Certain numbers of persons sit in a row and face north. A sits 3rd to the left of F. Three persons sit between F and R. R sits 2nd to the left of C who sits just left of V. One person sits between U and V. U sits right of C. B sits 2nd to the left of N and 3rd to the right of U. Q sits 3rd to the left of D who sits just right to A. The numbers of persons sit between Q and R is one less than the numbers of persons sit to the right of N. No one sits left of Q.

Q17. **How many persons are there between D and Q?**
(a) 1
(b) 2
(c) 3
(d) 4
(e) 5

Q18. **Which of the following statements is true?**

(a) B sits to the immediate right of N.
(b) U sits at one of the ends of the row.
(c) A sits to the immediate left of F.
(d) V sits at one of the ends of the row.
(e) C sits second to the right of R.

Q19. **How many persons sit in the row?**
(a) 19
(b) 21
(c) 28

(d) 17
(e) 18

Q20. **How many persons sit between V and B?**
(a) 9
(b) 2
(c) 4
(d) 7
(e) 8

Q21. **In the number '479486553', if odd digits are subtracted by 1 and even digits are subtracted by 2. Then, what will be the sum of the digits which are 2nd, 4th and 6th from the left end in the new number formed after rearrangement?**
(a) 13
(b) 14
(c) 12
(d) 16
(e) None of these

Directions (22-26): **Study the following information carefully and answer the questions given below:**
In a certain code:
"Shuffle new word" is coded as "xf bf go"
"New word towards corner" is coded as "xf bf hu hh"
"Towards chapter word table" is coded as "hu qt bf dm"
"Table around towards" is coded as "dm ch hu"

Q22. **What is the code for the word "Towards"?**
(a) bf
(b) hu
(c) qt
(d) dm
(e) None of the above

Q23. **What is the code for the word "chapter"?**
(a) bf
(b) hu
(c) qt
(d) dm
(e) None of the above

Q24. **Which of the following word is coded as "ch"?**
(a) New
(b) Word
(c) Towards
(d) Around
(e) None of the above

Q25. **What is the code for the word "Table"?**
(a) bf
(b) hu
(c) qt
(d) dm
(e) None of the above

Q26. **Which of the following word is coded as "xf"?**
(a) New
(b) Word
(c) Towards
(d) Chapter
(e) None of the above

Directions (27-31): **Study the following information carefully and answer the questions given below:**
Seven persons from M-S live in seven storey building and belongs to different countries viz. Italy, Canada, Germany, China. Spain, India and Brazil but not necessarily in the same order. The bottom most floor is numbered as 1 and so on till the topmost floor is numbered as 7.
S lives two floors above the one who belongs to Brazil and live on prime numbered floor. More than two floors gap between S and the one who belongs to Canada. N belong to Spain and lives three floors below the one who belongs to Canada. O lives just above the one who belongs to Italy. The numbers of persons live below M as same as live above R who lives just below P. The one who belongs to China lives just above the one who belongs to India.

Q27. **Who lives on the 5th floor?**
(a) Q
(b) S
(c) The one who belongs to Italy
(d) R
(e) Both (a) and (c)

Q28. **Which country does O belong to?**
(a) India
(b) Italy
(c) Brazil
(d) China
(e) Germany

Q29. **How many floors are there between P and the person from Canada?**
(a) 1
(b) 2
(c) 3

(d) 4
(e) Cannot be determined

Q30. **Which country does the person on the 3rd floor belong to?**
(a) Germany
(b) Brazil
(c) Italy
(d) China
(e) Canada

Q31. **If all the persons live in alphabetical order from top to bottom then how many persons remain at the same position (Excluding M)?**
(a) One
(b) None
(c) Two
(d) Three
(e) More than three

Directions (32-34): **Study the following information and answer the questions given below:**
W walks 8m towards west from point P to reach point Q. He takes a left turn from point Q and walks 10m to reach point R. He takes a right turn from point R and walks 12m to reach point S. He takes another right turn from point S and walks 6m to reach point T. He takes a left turn from point T and walks 8m to reach his home.

Q32. **In which direction is point T with respect to point to Q?**
(a) North
(b) South
(c) South-east
(d) South-west
(e) North-east

Q33. **What is the shortest distance between point S and W's home?**
(a) 22m
(b) 10m
(c) 12m
(d) 26m
(e) None of these

Q34. **What is the total distance travelled by W?**
(a) 47m
(b) 40m
(c) 44m
(d) 41m
(e) 36m

Q35. **Find the odd one out?**
(a) UPR
(b) RMO
(c) LGI
(d) GBE
(e) YTV

Directions (36-40): **Study the following information and answer the questions given below:**
Eight persons sit around a circular table in which some of them face inside and some of them face outside.
H sits 3rd to the right of K and both face the same direction. I sits opposite K but both face opposite direction. L sits 2nd to the right of I. F sits opposite D who sits 2nd to the left of E. Immediate neighbor of E face opposite direction as E faces. G sits 3rd to the right of D and not an immediate neighbor of I and K. L and E face inside. G and F face the same direction.

Q36. **Who sits 3rd to the left of F?**
(a) H
(b) L
(c) I
(d) G
(e) None of these

Q37. **Who sits opposite the one who sits just right of G?**
(a) L
(b) I
(c) H
(d) None of these
(e) F

Q38. **How many persons sit between E and I when counted from the right of I?**
(a) Four
(b) Three
(c) One
(d) None
(e) Two

Q39. **Which of the following is true?**
(a) G sits 2nd to the left of I
(b) H and F face the same direction
(c) L and D are immediate neighbors
(d) E and G face opposite direction to each other
(e) All are true

Q40. **Who are the immediate neighbors of E?**
(a) K and F
(b) L and D
(c) G and K
(d) I and H
(e) D and G

Q41. **A and B entered into a partnership business with investment of Rs. 1300 & Rs. 500 respectively. After six months, C joined them with investment of Rs. 1800. At the end of a year, the profit share of C is Rs. 360. Find the difference between profit share of A and B.**
(a) 480 Rs.
(b) 280 Rs.
(c) 400 Rs.
(d) 320 Rs.
(e) 180 Rs.

Q42. **Five years ago, the average age of A and B was 15 years. The ratio of present age of A and C is 6 : 5 respectively. If B is four years younger than C, then find the sum of present age of B and C (in years).**
(a) 34 years
(b) 32 years
(c) 36 years
(d) 24 years
(e) 40 years

Q43. **The average weight of eight people is X kg. Two new people joined them with total weight of 151 kg and average weight of all people increased by $\frac{3}{2}$ kg. If the weight of lightest people out of two people joined is X−5 kg, the find the difference between weight these two people who joined later.**
(a) 27 kg
(b) 21 kg
(c) 15 kg
(d) 25 kg
(e) 22 kg

Q44. **A gets 40% marks in an exam and he received 40 less marks than passing marks. B gets 70% marks in same exam and received 20 more marks than passing marks. If C gets 65% marks in the same exam, then find the difference between marks received by A and C in the exam.**
(a) 30
(b) 60
(c) 40
(d) 25
(e) 50

Q45. **A man invested Rs. P in scheme A on compound interest at rate of 10% p.a. for two years and he invested Rs. (P+500) in scheme B on simple interest at rate of 12% p.a. for same period of time. If the interest received by man from scheme A is Rs. 150 less than that of from scheme B, then find amount invested in scheme B.**
(a) 1250 Rs.
(b) 1000 Rs.
(c) 1500 Rs.
(d) 2000 Rs.
(e) 2500 Rs.

Direction (46- 50): **Find the wrong number in the given number series.**

Q46. 6400, 400, 50, 12.5, 6.25, 3, 12.5
(a) 400
(b) 12.5
(c) 6.25
(d) 3
(e) 50

Q47. 34, 32, 36, 30, 38, 48, 40
(a) 34
(b) 32
(c) 48
(d) 36
(e) 30

Q48. 43, 47, 56, 72, 108, 133, 182
(a) 72
(b) 56
(c) 43
(d) 47
(e) 108

Q49. 12, 28, 60, 108, 172, 256, 348
(a) 12
(b) 28
(c) 60
(d) 256
(e) 108

Q50. 3, 7, 27, 112, 565, 3396, 23779
(a) 7
(b) 3
(c) 27
(d) 565
(e) 23779

Direction (51-55): **The table given below shows the total number of rooms available in the five different hotels (A, B, C, D and E). It also shows the number of vacant rooms in these five hotels. Read the data carefully and answer the following questions given below.**

Hotels	Total number of rooms	Vacant rooms
A	220	110
B	250	150
C	280	180
D	260	130
E	310	120

Note: Total number of rooms available in a hotel = Vacant rooms + Occupied rooms

Q51. **Find the average number of occupied rooms in hotel B, C and E together.**
(a) 130
(b) 120
(c) 140
(d) 150
(e) 110

Q52. **In hotel F, total number of rooms available is 25% more than that of C and the number of rooms occupied is 40% more than the rooms vacant in hotel E. Find the total number of rooms vacant in the hotel F.**
(a) 184
(b) 180
(c) 176
(d) 182
(e) 178

Q53. **The cost of a room in hotel A is Rs. X and the cost of a room in hotel C is Rs. Y. If the revenue generated from the hotel A is Rs. 55000 and the ratio of revenue generated from C to A is 10: 11, then find the sum of X and Y.**
(a) 2000
(b) 4000
(c) 5000
(d) 3000
(e) 1000

Q54. **Find the number of rooms vacant in D is what percent of the total number of rooms in the hotel B.**
(a) 55%
(b) 52%
(c) 58%
(d) 60%
(e) 62%

Q55. **Find the number of rooms occupied in hotel A and D together are how many more/less than the number of rooms occupied in hotel E and B together.**
(a) 60
(b) 80
(c) 50
(d) 20
(e) 70

Direction (56-60) **What approximate value should come in the place of question (?) mark in the following questions.**

Q56. $98.99 + 19.98 - 101.03 = \frac{107.97}{?}$
(a) 2
(b) 4
(c) 6
(d) 8
(e) 12

Q57. $\sqrt{?} = (27.99)^2 - 1180.03 + (20.07)^2$
(a) 64
(b) 100
(c) 16
(d) 36
(e) 144

Q58. $19.09^2 - 20.04\%\ of\ 190.04 - ? = 90.12$
(a) 233
(b) 247
(c) 212
(d) 202

(e) 285

Q59. $32.01 \div 1.99^2 \times 127.99 = 2^?$

(a) 11

(b) 9

(c) 8

(d) 10

(e) 12

Q60. 24.01% of $449.98 + ?^2 = (16.01)^2 - \sqrt[3]{63.93}$

(a) 8

(b) 12

(c) 10

(d) 9

(e) 14

Q61. **In a mixture, the quantity of milk is x liters and water are 8 liters. Five liters pure milk and six liters of water added in the mixture so that milk becomes 75% of resultant mixture. If 10 liters of resultant mixture is removed, then find the remaining quantity of mixture (in liters).**

(a) 48

(b) 42

(c) 56

(d) 46

(e) 37

Q62. **In a right-angled triangle hypotenuse is $8\sqrt{10}$ cm and based is half of the height. If height and based of the triangle are equal to height & radius of a cylinder, then find curved surface area of cylinder.**

(a) 512π cm^2

(b) $256\ \pi$ cm^2

(c) $128\ \pi$ cm^2

(d) $556\ \pi$ cm^2

(e) None of these

Q63. **The ratio of speed of P to speed of Q is 5:8, P covers D km distance in 3 hours and Q covers (D+40) km in 2.5 hours. If P increases his speed by 25%, then find the time taken by P to cover (D+180) km distance. (in hours)**

(a)6

(b)5

(c)8

(d)7.5

(e)4.5

Q64. **The sum of five consecutive multiples of four is 200. Find the smallest multiple.**

(a)28

(b)44

(c)36

(d)32

(e)40

Q65. **The speed of boat A in still water is 4 times the speed of stream and covers 24 km upstream in 8 hours. If the speed of boat B in still water is 2 kmph more than the speed of boat A in downstream, then find the time (in minutes) taken by boat B to cover the same distance in upstream.**

(a)210

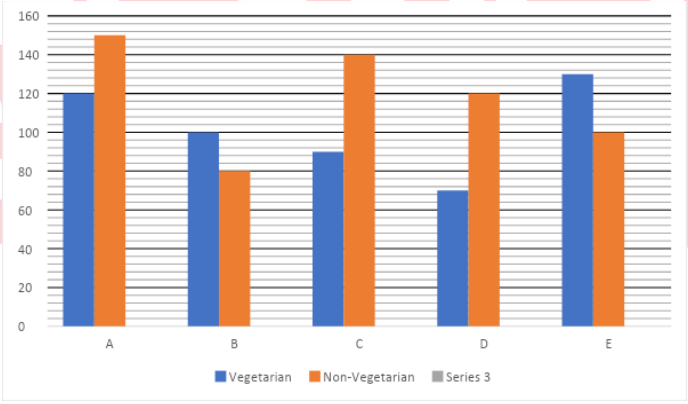
(b)180

(c)240

(d)300

(e)360

Direction (66 – 70): **The bar graph given below shows total number of people (Vegetarian + non-Vegetarian) visited in five (A, B, C, D and E) different restaurants daily. Read the bar graph carefully and answer the questions.**



Q66. **Total vegetarian people visited in F are $\frac{7}{5}th$ of total non-vegetarian people visited A and total non-vegetarian people visited in F are 50% more than total vegetarian people visited in B. Find total people visited in F are how much more than total non-vegetarian people visited in D.**

(a) 210
(b) 240
(c) 260
(d) 200
(e) 180

Q67. **Total non-vegetarian people visited in C and D together are what percent (approx.) more or less than total people visited in B.**
(a) 83%
(b) 67%
(c) 44%
(d) 71%
(e) 69%

Q68. **If daily same number of vegetarian and non-vegetarian people visited in restaurant D, then find total number of people visited in a week in restaurant D.**
(a) 1290
(b) 1330
(c) 1310
(d) 1320
(e) 1270

Q69. **Find the ratio of total people visited in E to that in A.**
(a) 23 : 21
(b) 25 : 27
(c) 23 : 25
(d) 23 : 27
(e) 28 : 27

Q70. **Total vegetarian people visited in A are what percent more than average number of non-vegetarian people visited in B and D together**.
(a) 25%
(b) 5%
(c) 10%
(d) 20%
(e) 30

Q71. **Average of present age A, B and C is 14 years, while four years ago, average age of B, C and D was 15 years. If the sum of present of A and D is 27 years, then find the age of D five years hence will be** (in years).
(a) 21
(b) 26
(c) 17
(d) 27
(e) 29

Q72. **A seller has 230 kg of mangoes which he purchases at rate of Rs. 10 per kg. 20% of total mangoes were rotten in packaging and thrown away. If seller sold half of the remaining mangoes at the rate of Rs. 20 per kg, then at what price (per kg) should seller sell the remaining mangoes to gain a total profit of 15% on the total quantity seller had initially (in Rs. /kg)?**
(a) 8.75
(b) 8.25
(c) 8.5
(d) 9.25
(e) 9.75

Q73. **30 women working 9 hours in a day can pack 1000 parcels in 10 days. If the efficiency of woman is $\frac{100}{3}$% more than that of a man, then find how many men will pack 1500 parcel working 5 hours a day for 10 days**.
(a) 52
(b) 42
(c) 44
(d) 48
(e) 50

Direction (74– 75): **Given below in each question there are two statements (I) and (II). You must determine; which statement is enough to give the answer of question. Also, there are five alternatives given, you have to choose one alternative as your answer of the questions**:

Q74. **Find out the length of train X given that speed of train X is 20 m/sec.**
I. Train X crosses another train Y moving in opposite direction in 6 sec and the speed of train Y is 50% more than the speed of train X.
II. Length of train Y is 50% less than length of train X.
(a) Both I and II together

(b) Only statement I
(c) Only statement II
(d) Both I and II together are not sufficient
(e) Either I or II alone

Q75. **Side of square is 3.5 cm more than radius of circle. What will be area of square?**
I. Difference between circumference and diameter of circle is 45 cm.
II. Radius of circle is 50% more than breadth of rectangle whose length is 15 cm. Ratio of circumference of circle & perimeter of rectangle is 3 : 2.
(a) Only statement II is sufficient
(b) Either statement I or Statement II alone is sufficient
(c) Statement I and II both together is sufficient
(d) Only statement I is sufficient
(e) Neither statement I nor statement II is sufficient

Direction (76–80): **Solve the given two equations and mark the correct option based on your answer.**
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.

Q76. I. $2x^2 - 17x + 21 = 0$
II. $3y^2 - x - 4 = 0$

Q77. I. $2x^2 - x - 45 = 0$
II. $2y^2 - 5y + 3 = 0$

Q78. I. $2x^2 - 23x + 66 = 0$
II. $3y^2 - 16y + 21 = 0$

Q79. I. $2x^2 + 16x + 24 = 0$
II. $6y^2 + 13y + 6 = 0$

Q80. I. $12x^2 - 12x = 13x - 12$
II. $12y^2 - 13y + 3 = 0$

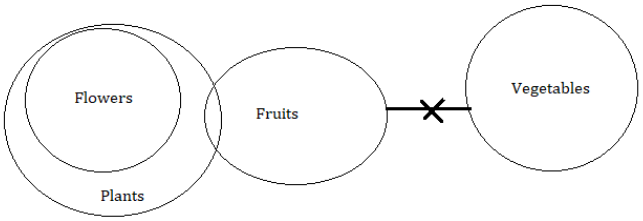
solutions:

Directions (1-5):

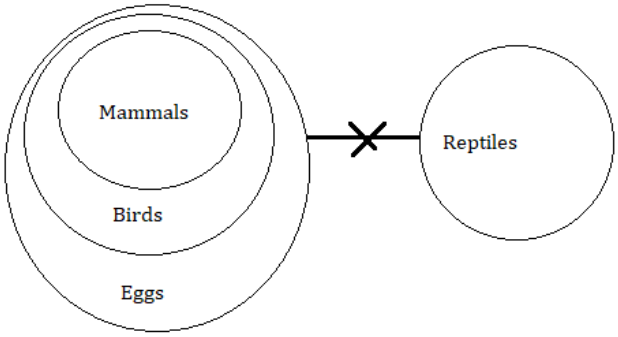
Year	Age	Persons
1994	27	R
1996	25	P
1998	23	T
1999	22	Q
2001	20	V
2002	19	S
2004	17	W
2005	16	U

S1. Ans. (d)
S2. Ans. (a)
S3. Ans. (e)
S4. Ans. (c)
S5. Ans. (c)

Directions (6-8):
S6. Ans. (b)
Sol.

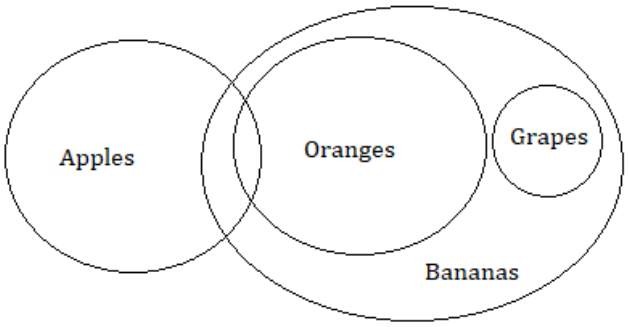


S7. Ans. (a)



Sol.
S8. Ans. (e)

Sol.



Directions (9-13):

Boxes
F
C
A
G
E
I
B
H
D

S9. Ans. (b)
S10. Ans. (a)
S11. Ans. (b)
S12. Ans. (e)
S13. Ans. (c)

Directions (14-16):
S14. Ans. (b)
S15. Ans. (e)
S16. Ans. (c)

Directions (17-20):

S17. Ans. (b)
S18. Ans. (e)
S19. Ans. (c)
S20. Ans. (c)

S21. Ans. (c)
479486553
268264442
6+2+4 = 12

Directions (22-26):

Word	Code
New	Xf
Word	Bf
Shuffle	Go
Towards	Hu
Corner	Hh
Table	Dm
Chapter	Qt
Around	Ch

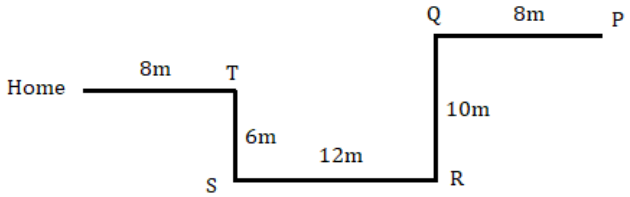
S22. Ans. (b)
S23. Ans. (c)
S24. Ans. (d)
S25. Ans. (d)
S26. Ans. (a)

Directions (27-31):

Floor	Persons	Country
7	M	Canada
6	O	Germany
5	Q	Italy
4	N	Spain
3	S	China
2	P	India
1	R	Brazil

S27. Ans. (e)
S28. Ans. (e)
S29. Ans. (d)
S30. Ans. (d)
S31. Ans. (b)

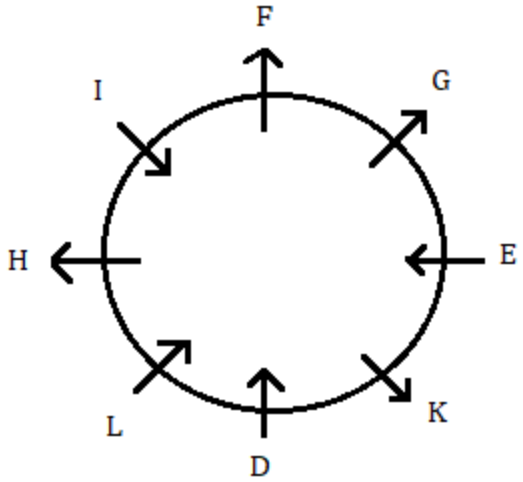
Directions (32-34):



S32. Ans. (d)
S33. Ans. (b)
S34. Ans. (c)

S35. Ans. (d)

Directions (36-40):



S36. Ans. (b)
S37. Ans. (c)
S38. Ans. (a)
S39. Ans. (e)
S40. Ans. (c)

S41. Ans. (d)
Sol. Ratio of profit share of A, B and C = 1300 × 12: 500 × 12: 1800 × 6
= 26 : 10 : 18
= 13 : 5 : 9
ATQ, $27P \times \frac{9}{27} = 360$
9P = 360
P = 40
Required difference = $27P \times \frac{13-5}{27} \times 40 = 320$ Rs.

S42. Ans(c)
Sol. Let present age of A and B be 'a' years and 'b' years respectively
a + b = 15 × 2 + 10 = 40 years
Let the age of A and C be 6x & 5x respectively
So, we can say a = 6x
So, age of B = 5x – 4
ATQ, 6x + 5x – 4 = 40
11x = 44
x = 4
Present age of B = $5 \times 4 - 4 = 16$ years
Present age of C = $5 \times 4 = 20$ *years*
Required sum = 16 + 20 = 36 years

S43. Ans(d)
Sol. ATQ, $\frac{8X+151}{10} = X + \frac{3}{2}$
8X + 151 = 10X + 15
2X = 136
X = 68
Weight of lightest people = (68 – 5) = 63 kg
Required difference = (151-63) – 63 = 25 kg

S44. Ans(e)
Sol. Let highest marks of the exam = 100x
$100x \times \frac{40}{100} + 40 = 100x \times \frac{70}{100} - 20$
30x = 60
x = 2
Total marks get by C = $200 \times \frac{65}{100} = 130$
Required difference = $130 - 200 \times \frac{40}{100} = 50$

S45. Ans(c)
Sol. Equivalent rate of interest at rate of 10% p.a. for two years =$(10+10+\frac{10\times10}{10})$ = 21%
$(P + 500) \times \frac{24}{100} - \frac{21P}{100} = 150$
$\frac{3P}{100} = 30$
P = 1000
Required amount = 1000 + 500 = 1500 Rs.

S46. Ans(d)
Sol. Wrong number = 3
Pattern of series –
$6400 \div 16 = 400$
$400 \div 8 = 50$
$50 \div 4 = 12.5$
$12.5 \div 2 = 6.25$
$6.25 \div 1 =$ **6.25**
$6.25 \div 0.5 = 12.5$

S47. Ans(c)
Sol. Wrong number= 48
Pattern of series –
34 – 2 = 32
32 + 4 = 36
36 – 6 = 30
30 + 8 = 38
38 – 10 = 28
28 + 12 = 40

S48. Ans(e)
Sol. Wrong number = 108
Pattern of series –
$43 + 2^2 = 47$
$47 + 3^2 = 56$
$56 + 4^2 = 72$
$72 + 5^2 = \mathbf{97}$
$97 + 6^2 = 133$
$133 + 7^2 = 182$

S49. Ans(d)
Sol. Wrong number = 256
Patten of series –
12 + 16 = 28
28 + 32 = 60
60 + 48 = 108
108 + 64 = 172
172 + 80 = **252**
252 + 96 = 348

S50. Ans(a)
Wrong number = 7
Pattern of series –
$3 \times 2 + 2 = 8$
$8 \times 3 + 3 = 27$
$27 \times 4 + 4 = 112$
$112 \times 5 + 5 = 565$
$565 \times 6 + 6 = 3396$
$3396 \times 7 + 7 = 23779$

Sol. (51-55):

Hotels	Total number of rooms	Vacant rooms	Occupied rooms
A	220	110	220-110 = 110
B	250	150	250-150 = 100
C	280	180	280-180 = 100
D	260	130	260-130 = 130
E	310	120	310-120 = 190

S51. Ans.(a)
Sol.
Required average $= \frac{100+100+190}{3} = \frac{390}{3} = 130$

S52. Ans. (d)
Sol.
Total number of rooms in hotel F $= \frac{125}{100} \times 280 = 350$
Total number of rooms occupied in hotel F $= \frac{7}{5} \times 120 = 168$
Total number of rooms vacant in hotel F= 350 – 168 = 182

S53. Ans. (e)
Sol.
Total revenue generated from hotel A = 55000
$X \times 110 = 55000$
$X = 500$
Total revenue generated from hotel C $= \frac{10}{11} \times 55000 = Rs.\,50000$
ATQ,
$Y \times 100 = 50000$
$Y = 500$
Required value = 500 + 500 = 1000

S54. Ans. (b)
Sol.
Required percentage $= \frac{130}{250} \times 100 = 52\%$

S55. Ans. (c)
Sol.
Number of rooms occupied in hotel A and D together = 110 + 130 = 240
Number of rooms occupied in hotel A and D together = 190 + 100 = 290
Required difference = 290 − 240 = 50

S56. Ans.(c)
Sol. $99 + 20 \div 101 \approx \frac{108}{?}$
$18 \approx \frac{108}{?}$
$? \approx 6$

S57. Ans. (c)
Sol. $\sqrt{?} \approx 784 - 1180 + 400$
$\sqrt{?} \approx 4$
$? \approx 16$

S58. Ans (a)

Sol.
$$19^2 - 20\%\ of\ 190 - ? \approx 90$$
$$361 - 38 - ? \approx 90$$
$$233 = ?$$

S59. Ans(d)
Sol. $2^5 \div 2^2 \times 2^7 \approx 2^?$
$2^{(5-2)} \times 2^7 \approx 2^?$
$2^{10} \approx 2^?$
$? \approx 10$

S60. Ans(b)
Sol.
$\frac{24}{100} \times 450 + ?^2 = 256 - 4$
$?^2 = 252 - 108$
$? = 12$

S61. Ans(d)
Sol. ATQ, $\frac{x+5}{8+6} = \frac{3}{1}$
x = 37
Required answer = (37+5+8+6) – 10 = 46 liters

S62. Ans(a)
Sol.
Let height of triangle = 2x
So, based of triangle = x
$5x^2 = 640$
$x^2 = 128$
Curved surface area of cylinder = $2\pi rh$
$= 2\pi\ 2x \times x$
$= 4 \times 128\pi$
$= 512\pi\ cm^2$

S63. Ans(a)
Sol
Let the speed of P and Q be 5x kmph and 8x kmph respectively.
ATQ,
$D = 3 \times 5x = 15x$ .....(I)
Also, $D + 40 = 2.5 \times 8x$
$D = 20x - 40$ .....(II)
Solving (I) and (II),
$15x = 20x - 40$
$x = 8$
So, $D = 15x = 120$ km
Original speed of P= $5x = 40$ kmph
Required time= $\frac{120+180}{40 \times \frac{125}{100}} = \frac{300}{50} = 6$ hour

S64. Ans(d)
Sol.
Let the five consecutive multiples of four be 4a, 4b, 4c, 4d, 4e;
where a=x, b=x+1, c=x+2, d=x+3 and e=x+4
.....(I)
ATQ,
$4a + 4b + 4c + 4d + 4e = 200$
$a + b + c + d + e = 50$
Or, $x + x + 1 + x + 2 + x + 3 + x + 4 = 50$
.....from (I)
$5x = 50 - 10$
$x = 8$
So, smallest multiple= $4a = 4x = 4 \times 8 = 32$

S65. Ans(c)
Sol.
Let the speed of stream be x kmph.
So, Speed of boat A in still water= $4 \times x = 4x$ kmph
ATQ,
$\frac{24}{4x-x} = 8$
$x = 1$
So, speed of stream= $x = 1$ kmph
Speed of boat B in still water= $5x + 2 = 5 \times 1 + 2 = 7$ kmph
Required time= $\frac{24}{7-1} = 4$ hours= $4 \times 60 = 240$ minutes

S66. Ans(b)
Sol. Total people (Vegetarian + non-Vegetarian) visited in F
$= 150 \times \frac{7}{5} + 100 \times \frac{150}{100}$
$= 210 + 150$
$= 360$
Required difference = 360 – 120 = 240

S67. Ans(c)
Sol. Total non-vegetarian people visited in C and D
= (140 + 120) = 260
Required percentage = $\frac{260-180}{180} \times 100 = 44.44\% \approx 44\%$

S68. Ans(b)
Sol. Required sum = $70 \times 7 + 120 \times 7$
$= 490 + 840$
$= 1330$

S69. Ans(d)
Sol. Total people visited E= $130 + 100 = 230$
Total people visited A= $120 + 150 = 270$
Required ratio= $230: 270$
$= 23: 27$

S70. Ans(d)
Sol. Average number of non-vegetarian people visited in B and D
$= \frac{80+120}{2} = 100$
Required percentage = $\frac{120-100}{100} \times 100 = 20\%$

S71. Ans(b)
Sol. Let present age of A, B, C and D be a, b, c & d respectively
$a + b + c = 14 \times 3 = 42$ --- (i)
$b + c + d = 15 \times 3 + 4 \times 3 = 57$ ------(ii)
a + d = 27 -----(iii)
From (i) and (ii)
d – a = 15 ------(iv)
From (iii) and (iv)
d = 21
Required age = 21 + 5 = 26 years

S72. Ans(a)
Sol.
Total cost price of quantity of mangoes seller had = $230 \times 10 = 2300$ Rs.
So, total selling price of quantity of mangoes seller had, if he had to gain 15% profit = $2300 \times \frac{115}{100} = 2645\ Rs.$
Total quantity of mangoes available for selling = $230 \times \frac{80}{100} = 184$ kg
Total selling price of half of 184 kg of mangoes which seller sold at Rs. 20 per kg = $184 \times \frac{1}{2} \times 20 = 1840\ Rs.$
So, seller had to sell the remaining mangoes = $\frac{2645\ -1840}{92} \times \frac{1}{100} = 8.75\ Rs./\text{kg}$

S73. Ans. (d)
Sol.
Let the efficiency of a woman be 4x and total number of men required be m.
So, the efficiency a man = $4x \times \frac{3}{4} = 3x$
$30 \times 4x \times 9 \times 1000 \times 10 = 3x \times m \times 1500 \times 5 \times 10$
$m = 48$

S74. Ans.(a)
Sol.
Speed of train X = 20 m/sec
Let length of train X be x m
From II
length of train Y = 0.5 x m
From I
Speed of train Y = 20 × 1.5 = 30 m/sec
From I & II
$$\frac{x + 0.5x}{6} = 30 + 20$$
x = 200 m

S75. Ans(b)
Sol.
Let radius of circle = r cm
So, side of square = r + 3.5 cm

From I –

$2 \times \frac{22}{7} \times r - 2r = 45$

r = 10.5 cm

side of square = 10.5 + 3.5 = 14 cm

Area of square = 196 cm^2

Statement I alone is sufficient to give answer.

From II –

Let breadth of rectangle = 2x

So, radius of circle will be = 3x

ATQ –

$\frac{2 \times \frac{22}{7} \times 3x}{2(2x+15)} = \frac{3}{2}$

x = 3.5 cm

Radius of circle = 10.5 cm

side of square = 10.5 + 3.5 = 14 cm

Area of square = 196 cm^2

So, either statement I or Statement II alone is sufficient.

S76. Ans(a)

Sol. I. $2x^2 - 14x - 3x + 21 = 0$

$2x(x - 7) - 3(x - 7) = 0$

$x = 7, \frac{3}{2}$

II. $3y^2 - x - 4 = 0$

$3y^2 - 4y + 3y - 4 = 0$

$y(3y-4) + 1(3y-4) = 0$

$y = -1, \frac{4}{3}$

$x > y$

S77. Ans (e)

Sol. I. $2x^2 - x - 45 = 0$

$2x^2 - 10x + 9x - 45 = 0$

$2x(x-5) + 9(x-5) = 0$

$x = 5, -4.5$

II. $2y^2 - 5y + 3 = 0$

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

$y(2y-3) - 1(2y-3) = 0$

$y = 1, \frac{3}{2}$

So, there is no relation between x and y.

S78. Ans(a)

Sol. I. $2x^2 - 23x + 66 = 0$

$2x^2 - 12x - 11x + 66 = 0$

$2x(x-6) - 11(x-6) = 0$

$x = \frac{11}{2}, 6$

II. $3y^2 - 16y + 21 = 0$

$3y^2 - 9y - 7y + 21 = 0$

$3y(y-3) - 7(y-3) = 0$

$y = 3, \frac{7}{3}$

So, x>y

S79. Ans(c)

Sol.

I. $2x^2 + 12x + 4x + 24 = 0$

$2x(x + 6) + 4(x + 6) = 0$

$(2x + 4)(x + 6) = 0$

$x = -2, -6$

II. $6y^2 + 9y + 4y + 6 = 0$

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

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

$y = -\frac{3}{2}, -\frac{2}{3}$

x<y

S80. Ans.(b)

Sol.

I. $12x^2 - 12x = 13x - 12$

$12x^2 - 25x + 12 = 0$

$12x^2 - 16x - 9x + 12 = 0$

$(4x - 3)(3x - 4) = 0$

$x = \frac{3}{4}, \frac{4}{3}$

II. $12y^2 - 13y + 3 = 0$

$\Rightarrow 12y^2 - 4y - 9y + 3 = 0$

$\Rightarrow 12y^2 - 4y - 9y + 3 = 0$

$\Rightarrow 4y(3y - 1) - 3(3y - 1) = 0$

$\Rightarrow (4y - 3)(3y - 1) = 0$

$\Rightarrow y = \frac{3}{4}, \frac{1}{3}$

So, $x \geq y$