IBPS RRB Clerk Pre 2025 Memory Based Paper Based on 6th December 1st Shift

Directions (1-3): Study the information carefully and answer the questions given below.
B has only one son. A is child of B. C is sister-in-law of A. E is son of C. F is grandfather of E. H is unmarried. H is daughter of D. F and B are of same gender. F is the spouse of D. G is the male member of the family.

Q1. How is C related to B?
(a) Daughter
(b) Daughter-in-law
(c) Aunt
(d) Mother-in-law
(e) None of these

Q2. How is G related to D?
(a) Son
(b) Daughter
(c) Nephew
(d) Uncle
(e) Son-in-law

Q3. How is E related to brother-in-law of H?
(a) Son
(b) Son-in-law
(c) Nephew
(d) Uncle
(e) None of these

Q4. Find the odd-one out.
(a) KMO
(b) GIK
(c) BDF
(d) UXZ
(e) EGI

Directions (5-9): Study the following information carefully and answer the questions given below.
In a certain coded language:
"Mat on brown table" is coded as "uy ir ps ks"
"Metal on glasses" is coded as "ps ko re"
"Under metal mat box" is coded as "ym ef re ks"
"Glasses kept brown" is coded as "ko gt uy"

Q5. What is the code for the words 'Kept on table'?
(a) re gt ko
(b) gt ps ir
(c) ko gt ps
(d) ir ps uy
(e) ko ym gt

Q6. Which among the following word pair is coded as 'uy ef'?
(a) On box
(b) Box brown
(c) Mat under
(d) Under brown
(e) Can't be determined

Q7. What is the code for the word pair 'Mat Glasses'?
(a) uy ko
(b) ps ks
(c) ks ko
(d) ks gt
(e) ir ko

Q8. Which word corresponds to the code 're'?
(a) Kept
(b) Metal
(c) Glasses
(d) Under
(e) On

Q9. Which among the following word is coded as 'uy'
(a) Mat
(b) Table
(c) On
(d) Kept
(e) Brown

Directions (10-14): Study the following information carefully and answer the questions given below.
Six persons A, B, C, D, E and F were born on two different dates 7th and 24th of the months March, April and May of the same year. All the information is not necessarily in the same order.
B was born immediately after A. C was born on 7th April. One person was born between A and E. Two persons were born between C and F.

Q10. Who among the following was born on 7th May?
(a) F
(b) B
(c) E
(d) D
(e) A

Q11. On which date and month was D born?
(a) 7th May
(b) 24th March
(c) 7th March
(d) 24th May
(e) Can't be determined

Q12. How many persons were born after E?
(a) Five
(b) One
(c) Three
(d) Two
(e) Four

Q13. If D is related to C and in the same way C is related to B, then who among the following is related to F?
(a) A
(b) B
(c) C
(d) D
(e) E

Q14. Four of the following five are alike in a certain way so form a group, which of the following does not belong to that group?
(a) D
(b) C
(c) E
(d) B
(e) F

Q15. If in the given word **"PREVAIL",** if vowels are changed to immediately succeeding letter and consonants are changed to immediately preceding letter, then find how many vowels are there in the new arrangement?
(a) One
(b) None
(c) Two
(d) Three
(e) Four

Directions (16-20): Study the following information carefully and answer the questions given below.

Eight persons A, B, C, D, E, F, G and H sit around a square table. Four persons sit at the corners and face inside and four sit at the middle of each side and face outside. All the information is not necessarily in the same order.

C sits second to the right of H. Three persons sit between A and C. D sits immediate right of A but doesn't sit at the corners. F is not A's immediate neighbour. G sits second to the left of D. Two persons sit between G and B.

Q16. Four of the following five pairs are alike in a certain way. Find the one that doesn't belong to the group:

(a) A-C
(b) B-H
(c) F-D
(d) E-C
(e) G-E

Q17. Who sits fifth to the right of E?

(a) G
(b) F
(c) H
(d) C
(e) D

Q18. How many persons sit between C and D when counted from left of C?

(a) Two
(b) Three
(c) Four
(d) Five
(e) Six

Q19. Who sits third to the left of B?

(a) H
(b) C
(c) F
(d) G
(e) D

Q20. Which among the following statements is/are NOT correct?

I. G and C are immediate neighbours.
II. E faces inside.
III. Three persons sit between B and H.

(a) Only I
(b) Only II
(c) Both I and II
(d) Both I and III
(e) All I, II and III

Q21. In the word **'TROUBLE'**, how many pairs of the letters have the same number of letters between them (both forward and backward direction) as in the English alphabet?
(a) Four
(b) Two
(c) One
(d) Three
(e) More than four

Directions (22-24): In this question, relationship between different elements is shown in the statements. The statements are followed by two conclusions.
Give answer:

Q22. Statements: R > T ≤ W < K = P > H ≥ J
Conclusions:
I. W < H
II. J ≤ K
(a) If only conclusion I is true
(b) If only conclusion II is true
(c) If either conclusion I or II is true
(d) If neither conclusion I nor II is true
(e) If both conclusions I and II are true

Q23. Statements: Q ≥ M < R = T > K ≥ S > V
Conclusions:
I. R > K
II. V ≥ M
(a) If only conclusion I is true
(b) If only conclusion II is true
(c) If either conclusion I or II is true
(d) If neither conclusion I nor II is true
(e) If both conclusions I and II are true

Q24. Statements: L > X ≥ D ≥ P = Y < H ≤ C
Conclusions:
I. X ≥ Y
II. C > P

(a) If only conclusion I is true
(b) If only conclusion II is true
(c) If either conclusion I or II is true
(d) If neither conclusion I nor II is true
(e) If both conclusions I and II are true

Directions (25-27): The following question contains some statements followed by two conclusions numbered I and II. Assume that all the statements are true, even if they seem to differ from commonly known facts. Analyze both conclusions and decide which one logically follows from the given statements.

Q25. Statements:
Only a few cars are blue
Some blue are fast
Conclusions:
I. Some cars being fast is a possibility
II. Some fast is not blue
(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

Q26. Statements:
Some roses are red
All red are fresh
Only a few fresh is dry
Conclusions:
I. No red is dry
II. No roses being dry is a possibility
(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

Q27. Statements:
All rivers are valleys
Some valleys are hills
No hills are mountains
Conclusions:
I. No rivers being hills is a possibility
II. Some valleys are not mountains

(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

Directions (28-30): Read the given information carefully and answer the related question:
Six persons A, B, C, D, E and F have different heights (in cm).
F is taller than C but shorter than D. The height of 2nd tallest person is 181cm. E is shorter than D but taller than A. B is taller than D. E is taller than C but shorter than F. The third shortest person is 174cm.

Q28. How many persons are shorter than B?
(a) One
(b) Two
(c) Three
(d) Four
(e) Five

Q29. What will be the possible height of F?
(a) 168cm
(b) 183cm
(c) 178cm
(d) 159cm
(e) 173cm

Q30. Who among the following is second shortest?
(a) F
(b) E
(c) B
(d) Either C or A
(e) A

Directions (31-35): The following question is based on the 3-letter word series given below. Read carefully and answer accordingly:

SUN EAT DOG ANT JAM

Q31. If all the words are arranged alphabetically from left then, which word will become third from the right end?
(a) EAT
(b) JAM
(c) SUN
(d) DOG
(e) ANT

Q32. If second letter in each word is changed to its immediate next letter (as per English alphabet), then how many words will become meaningful?
(a) Three
(b) Two
(c) One
(d) None
(e) Four

Q33. How many letters are between 'first letter of second from left end' and 'third letter of third word from right end', as per English alphabet?
(a) Three
(b) One
(c) Four
(d) Six
(e) Seven

Q34. If the letters within each word are arranged in dictionary order from left, then how many words will have third letters as vowel?
(a) One
(b) Two
(c) Three
(d) Four
(e) None

Q35. Which letter is third from the left in the word which is fourth from left end?
(a) M
(b) N
(c) G
(d) T
(e) E

Directions (36-40): Read the given information carefully and answer the related questions:
Seven persons A, B, C, D, E, F and G are designated on different designations in a company but not in same order as given. The designations are CEO, COO, AM, GM, AGM, Manager and Executive. The designations are given in decreasing order of their seniority such that CEO is the seniormost designation and Executive is the junior most designation.
A is four designations junior to G. D is designated immediately junior to A. Two persons are designated between B and C. F is two designations senior to C.

Q36. Who among the following is designated as AM?

(a) C
(b) B
(c) E
(d) A
(e) F

Q37. How many persons are designated junior to C?
(a) None
(b) One
(c) Two
(d) Three
(e) Four

Q38. If G is related to F, in the similar way C is related to A, then D is related to whom?
(a) A
(b) B
(c) E
(d) C
(e) G

Q39. What is the designation of B?
(a) COO
(b) AGM
(c) GM
(d) CEO
(e) Executive

Q40. Who among the following is two designations senior to D?
(a) E
(b) F
(c) B
(d) C
(e) G

Directions (41-45): The table given below shows the total number of scooter and car sold by five companies. Read the data and answer the following question.

Companies	Scooters sold	Cars sold
A	200	150
B	420	120
C	250	390
D	160	240
E	300	140

Q41. Find the ratio of scooters sold by A and B together to cars sold by D.
(a) 7:9
(b) 13:12
(c) 12:13
(d) 61:62
(e) 31:12

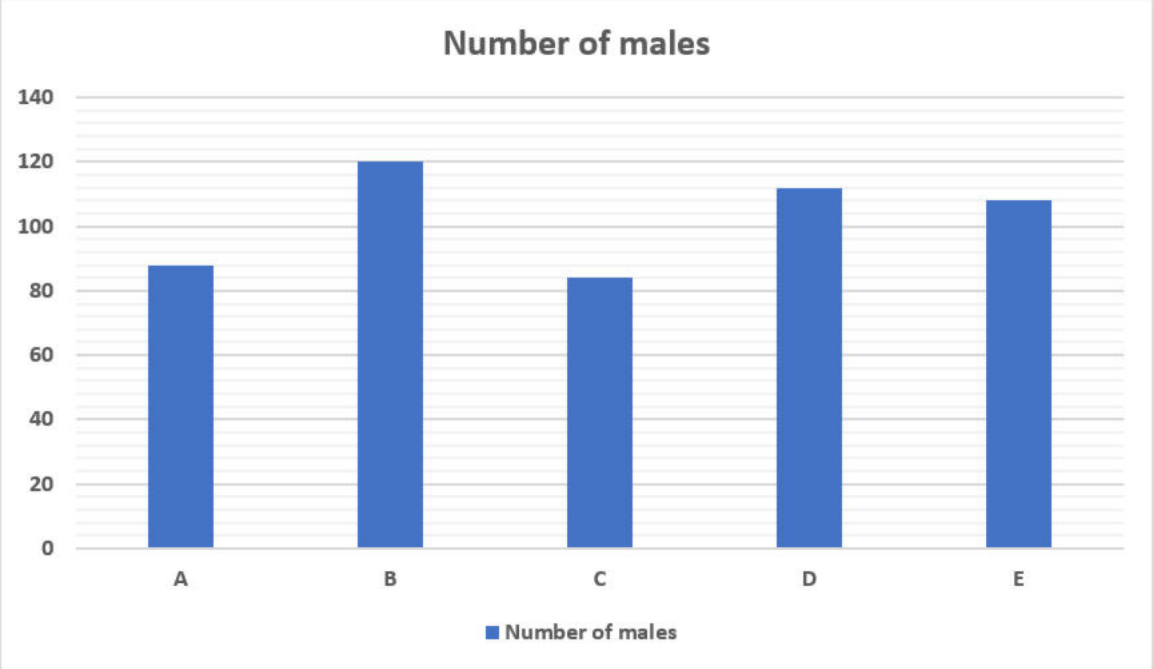
Q42. If the ratio of sold to unsold scooters in D is 1:2, then find the total (sold + unsold) scooters in D
(a) 420
(b) 480
(c) 400
(d) 450
(e) 410

Q43. Out of the total **Cars sold by B, 25% of the cars are defective. Find the non-defective cars sold by B is what percentage of total scooter sold by C.**
(a) 37%
(b) 33%
(c) 31%
(d) 26%
(e) 36%

Q44. Average number of scooters sold by all the companies.
(a) 266
(b) 113
(c) 166
(d) 176
(e) 196

Q45. If company F sold 20% more scooters than A and 30% less cars than E, then find the sum of total number of scooters and cars sold by F
(a) 266
(b) 333
(c) 366
(d) 376
(e) 338

Directions (46-50): The bar graph given below shows the data about male in five companies (A, B, C, D and E). Read the data and answer the following question.



Q46. If number of females in B is 33 1/3 % more than males in B and number of females in C is 20 more than the males in D, then find the total female in B and C.

(a) 266
(b) 213
(c) 216
(d) 276
(e) 292

Q47. Find the average number of males in E, B, and C.

(a) 104
(b) 103
(c) 106
(d) 107
(e) 110

Q48. If the ratio of females in A and B is 2:1 and the ratio of females in B to males in C is 1:2, then find the females in A

(a) 66
(b) 84
(c) 86
(d) 76
(e) 96

Q49. Find the difference between males in A and males in E.
(a) 36
(b) 13
(c) 20
(d) 16
(e) 19

Q50. Males in C is what percentage of males in D.
(a) 69%
(b) 33%
(c) 66%
(d) 76%
(e) 75%

Q51. A shopkeeper marked an article 25% above its cost price and allowed 20% profit on the article. If the discount allowed on the article is Rs 20, then find the cost price of the article (in Rs).
(a) 250
(b) 400
(c) 500
(d) 480
(e) 350

Q52. A and B started a business with investment of Rs 2000 and Rs 4000 respectively. After 6 months B invested 50% more of his initial investment and at the end of the year the total profit of Rs 14000. Find the profit share of B (in Rs).
(a) 12000
(b) 10000
(c) 8000
(d) 7000
(e) 5000

Q53. A 44-liter mixture contains milk and water. The quantity of milk is 6 liters more than that of water. How much water must be added so that the ratio of milk to water becomes equal?
(a) 6
(b) 5
(c) 7
(d) 8
(e) 10

Q54. 520 meters long train can cross a pole in 13 seconds. Find the time taken by the train to cross 130-meter-long platform (in seconds).

(a) $16\frac{3}{4}$

(b) $18\frac{1}{4}$

(c) $16\frac{1}{4}$

(d) $18\frac{3}{4}$

(e) $15\frac{1}{4}$

Q55. If the circumference of the circle is 88 cm, then find the area of the circle (in cm^2).

(a) 900

(b) 824

(c) 616

(d) 1024

(e) 540

Q56. The present ages of A and B are in the ratio of 7 : 9, respectively. Six years ago, the ratio of their ages was 11 : 15, respectively. Find the age of B three years from now (in years).

(a) 36

(b) 33

(c) 42

(d) 39

(e) 45

Q57. A man spends 20% of his income on rent and 10% of the remaining amount on groceries. He saves the rest. If his total expenditure (on rent and groceries) is Rs 4200, find the amount he saves (in Rs).

(a) 9850

(b) 19200

(c) 15400

(d) 12400

(e) 10800

Q58. The total cost of 6 pens and 9 pencils is Rs 150. What will be three-fourth of the total cost of 12 pens and 18 pencils?

(a) Rs 225

(b) Rs 280

(c) Rs 262.5

(d) Rs 202.5

(e) Rs 240

Q59. The average of three consecutive even numbers is 106. Find the average of the second largest and the largest numbers.
(a) 112
(b) 110
(c) 107
(d) 103
(e) 105

Q60. The population of a town increases by 10% in the first year and decreases by 5% in the next. What is the overall percentage change after two years.
(a) 4% increase
(b) 4.5% increase
(c) 5% increase
(d) 5.5% increase
(e) No change

Directions (61-65): Find the wrong number in the given series.

Q61. 220, 225, 215,231, 206, 242
(a)225
(b)220
(c)231
(d)206
(e)242

Q62. 121, 123, 126, 131, 138, 150
(a)121
(b)150
(c)123
(d)126
(e)138

Q63. 13, 104, 197, 292, 380, 488
(a)13
(b)104
(c)380
(d)112
(e)488

Q64. 322, 330, 338, 336, 354, 362
(a)322
(b)330
(c)362
(d)336
(e)354

Q65. 3, 4, 7, 10, 18, 34
(a)3
(b)4
(c)7
(d)10
(e)18

Directions (66 -80): What will come in the place of question (?) mark in following questions.

Q66. 44% of 750 + $?^3$ = 546
(a) 5
(b) 8
(c) 4
(d) 6
(e) 3

Q67. (48×?)+(52×6)=80% of 840
(a) 3.5
(b) 12.5
(c) 2.5
(d) 4.5
(e) 7.5

Q68. $(32)^{0.4}\times(16)^{0.3}\times(64)^{0.2}=(2)^{?}$
(a) 4.6
(b) 4.5
(c) 4.3
(d)4.4
(e)4.2

Q69. ? × 1.3 × 6.5 = 1.17 × 195
(a) 23
(b) 27
(c) 25
(d) 26
(e) 22

Q70. $?^2+114-24\times5=163$
(a) 15
(b) 13
(c) 14
(d) 12
(e) 11

Q71. $\frac{3}{4}$ of $\frac{4}{7}$ of $343 = ? \times 21$
(a) 12
(b) 5
(c) 7
(d) 10
(e) 14

Q72. $60 \times \frac{2}{4} - 26 = ?$
(a) 4
(b) 3
(c) 2
(d) 6
(e) 8

Q73. $66\%\ of\ 350 + ? = \frac{5}{8}\ of\ 1256$
(a) 521
(b) 496
(c) 554
(d) 568
(e) 544

Q74. 15% of $300+9.09\%$ of $803+3=(?)^2$
(a) 10
(b) 11
(c) 9
(d) 8
(e) 12

Q75. $680 \div 17 \times 15 = ?$
(a) 592
(b) 608
(c) 604
(d) 598
(e) 600

Q76. $544 \div 8.5 = 2^{?}$
(a) 7
(b) 3
(c) 1
(d) 6
(e) 9

Q77. $\left(\frac{9}{7}\right)^3 \times \left(\frac{14}{27}\right)^2 \times 7^{?} = 28$
(a) 2
(b) 6
(c) 4
(d) 3
(e) 5

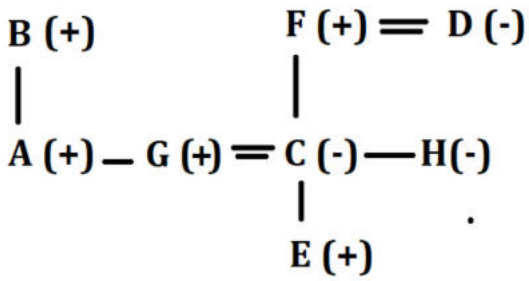
Q78. $\sqrt{784} \div \frac{4}{7} \div 49 = ?$
(a) 9
(b) 1
(c) 8
(d) 4
(e) 6

Q79. 635 - 28 + 320 ÷ 8 = ?
(a) 607
(b) 627
(c) 647
(d) 617
(e) 637

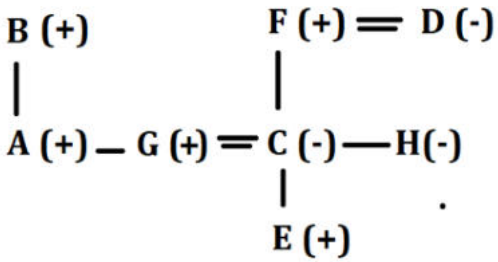
Q80. 35% of 250 + 25% of 35 = ?
(a) 96.25
(b) 81.65
(c) 82.85
(d) 80.65
(e) 79.65

Solutions

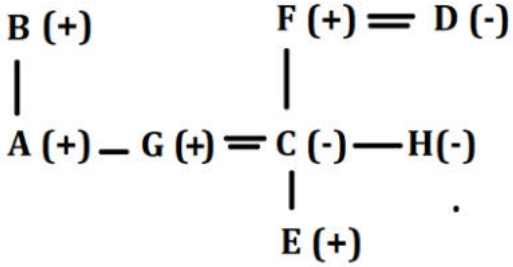
S1. Ans. (b)
Sol.



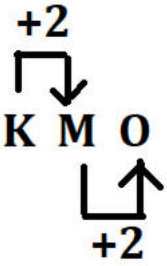
S2. Ans. (e)
Sol.



S3. Ans. (a)
Sol.



S4. Ans. (d)
Sol. Logic here is:



S5. Ans. (b)
Sol.

Words	Codes
Mat	ks
Brown	uy
On	ps
Table	ir
Metal	re
Glasses	ko
Under/ Box	ym /ef
Kept	gt

S6. Ans. (e)
Sol.

Words	Codes
Mat	ks
Brown	uy
On	ps
Table	ir
Metal	re
Glasses	ko
Under/ Box	ym /ef
Kept	gt

S7. Ans. (c)
Sol.

Words	Codes
Mat	ks
Brown	uy
On	ps
Table	ir
Metal	re
Glasses	ko
Under/ Box	ym /ef
Kept	gt

S8. Ans. (b)
Sol.

Words	Codes
Mat	ks
Brown	uy
On	ps
Table	ir
Metal	re
Glasses	ko
Under/ Box	ym /ef
Kept	gt

S9. Ans. (e)
Sol.

Words	Codes
Mat	ks
Brown	uy
On	ps
Table	ir
Metal	re
Glasses	ko
Under/ Box	ym /ef
Kept	gt

S10. Ans. (b)
Sol.

Months	Dates	Persons
March	7	D
	24	E
April	7	C
	24	A
May	7	B
	24	F

S11. Ans. (c)
Sol.

Months	Dates	Persons
March	7	D
	24	E
April	7	C
	24	A
May	7	B
	24	F

S12. Ans. (e)
Sol.

Months	Dates	Persons
March	7	D
	24	E
April	7	C
	24	A
May	7	B
	24	F

S13. Ans. (a)
Sol.

Months	Dates	Persons
March	7	D
	24	E
April	7	C
	24	A
May	7	B
	24	F

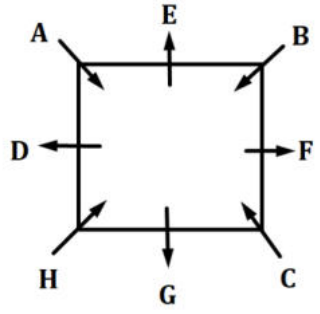
S14. Ans. (b)
Sol.

Months	Dates	Persons
March	7	D
	24	E
April	7	C
	24	A
May	7	B
	24	F

Except C, all were born in the month having 31 days.

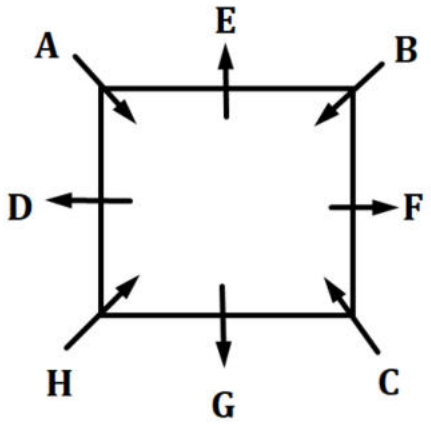
S15. Ans. (c)
Sol. PREVAIL = **O**QF**U**BJK

S16. Ans. (d)
Sol.

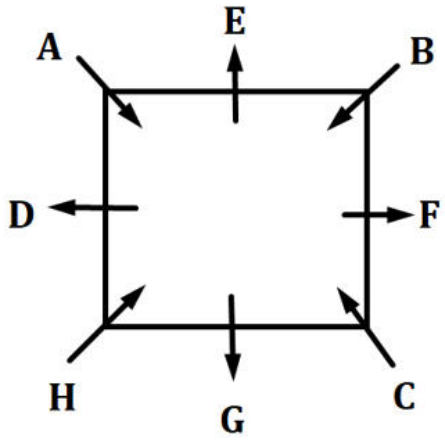


Except E-C, all the pair of persons sit opposite to each other.

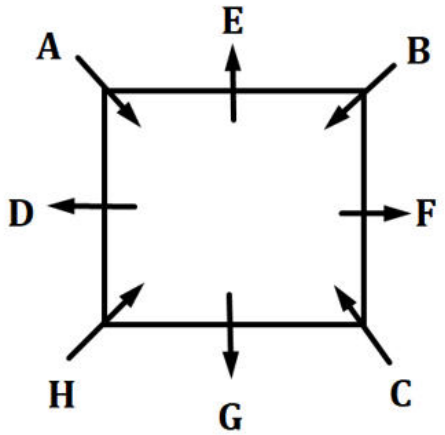
S17. Ans. (c)
Sol.



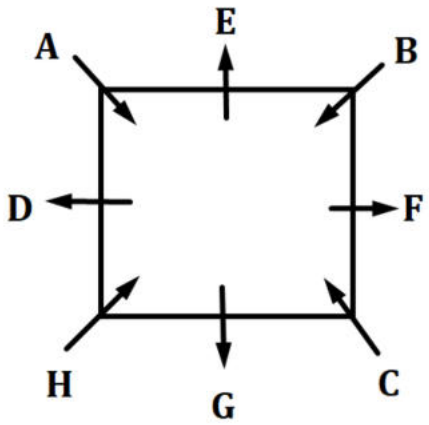
S18. Ans. (a)
Sol.



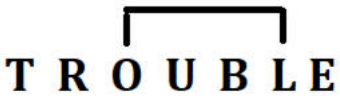
S19. Ans. (d)
Sol.



S20. Ans. (b)
Sol.



S21. Ans. (c)
Sol. One pair

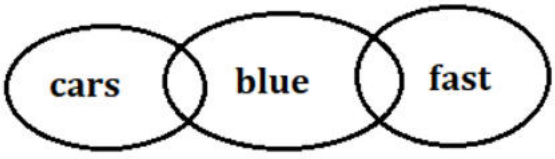


S22. Ans. (d)
Sol.
I. W < H (False)
II. J ≤ K (False)

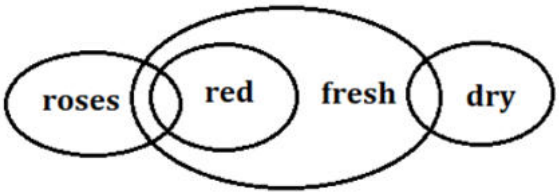
S23. Ans. (a)
Sol.
I. R > K (True)
II. V ≥ M (False)

S24. Ans. (e)
Sol.
I. X ≥ Y (True)
II. C > P (True)

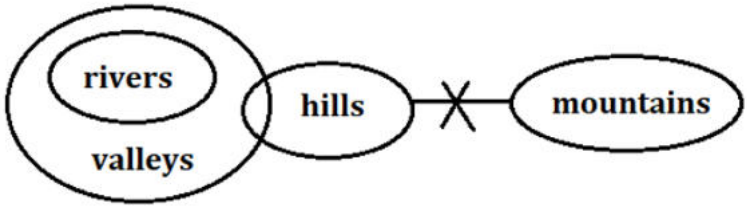
S25. Ans. (a)
Sol.



S26. Ans. (b)
Sol.



S27. Ans. (e)
Sol.



S28. Ans. (e)
Sol. B > D (181cm) > F > E (174cm) > C/A > A/C

S29. Ans. (c)
Sol. B > D (181cm) > F > E (174cm) > C/A > A/C

S30. Ans. (d)
Sol. B > D (181cm) > F > E (174cm) > C/A > A/C

S31. Ans. (a)
S32. Ans. (d)
S33. Ans. (b)
S34. Ans. (b)
S35. Ans. (d)

S36. Ans. (c)
Sol.

Designations	Persons
CEO	G
COO	F
AM	E
GM	C
AGM	A
Manager	D
Executive	B

S37. Ans. (d)
Sol.

Designations	Persons
CEO	G
COO	F
AM	E
GM	C
AGM	A
Manager	D
Executive	B

S38. Ans. (b)
Sol.

Designations	Persons
CEO	G
COO	F
AM	E
GM	C
AGM	A
Manager	D
Executive	B

S39. Ans. (e)
Sol.

Designations	Persons
CEO	G
COO	F
AM	E
GM	C
AGM	A
Manager	D
Executive	B

S40. Ans. (d)
Sol.

Designations	Persons
CEO	G
COO	F
AM	E
GM	C
AGM	A
Manager	D
Executive	B

S41. Ans. (e)
Sol. Required answer = 200 +420:240 = 620:240 = 31:12

S42. Ans. (b)
Sol. Unsold scooter in D = 2×160=320
Required answer = 320 + 160 = 480

S43. Ans. (e)
Sol. Non defective cars sold by B = 75% of 120 = 90
Required answer = 90/250×100=36%

S44. Ans. (a)
Sol. Required answer = (200+420+250+160+300)/5=266

S45. Ans. (e)
Sol. Scooters sold by F = 120% of 200 = 240
Cars sold by F = 70% of 140 = 98
Required answer = 240+98 = 338

S46. Ans. (e)
Sol. Females in B = 4/3 of 120 = 160
Females in C = 20 + 112 = 132
Required answer=160+132 = 292

S47. Ans. (a)
Sol. Required answer = (108+120+84)/3=104

S48. Ans. (b)
Sol. Females in B = 1/2×84=42
Females in A = 2×42= 84

S49. Ans. (c)
Sol. Required answer= 108 – 88 = 20

S50. Ans. (e)
Sol. Required answer = 84/112×100=75%

S51. Ans. (b)
Sol. Information Given in the Question:
Markup on cost price = 25%
Profit allowed = 20%
Discount allowed = Rs 20
Need to find: **Cost Price (CP)**

Concept/Formula Used in the Question:
Marked Price (MP) = CP × (1 + Markup%)
Selling Price (SP) = CP × (1 + Profit%)
Discount = MP - SP
Detailed Explanation:
Let the Cost Price be Rs x
Marked Price (MP) = x × (1 + 25%) = 1.25x
Selling Price (SP) = x × (1 + 20%) = 1.20x
Discount = MP - SP = 1.25x - 1.20x = 0.05x
Given: Discount = Rs 20
So,
0.05x = 20
x = 20 / 0.05 = 400
Cost Price = Rs 400

S52. Ans. (b)
Sol. Information Given in the Question:
A's investment = ₹2000 (for 12 months)
B's initial investment = Rs 4000
After 6 months, B increases investment by 50% of Rs 4000
= Rs 2000 more
⇒ Total = Rs 6000 for next 6 months
Total profit = Rs 14,000
Concept/Formula Used in the Question:
Profit is divided in the ratio of **(investment × time)**
Compute effective investment for both A and B:
A = 2000 × 12 = Rs 24,000
B = 4000 × 6 + 6000 × 6
= 24,000 + 36,000 = Rs 60,000
Ratio of A : B = 24,000 : 60,000 = 2 : 5
Detailed Explanation:
A's capital × time = 2000 × 12 = Rs 24,000
B's capital:
First 6 months: 4000 × 6 = Rs 24,000
Next 6 months: 6000 × 6 = Rs 36,000
Total = 24,000 + 36,000 = Rs 60,000
Profit ratio A : B = 24,000 : 60,000 = 2 : 5
Total ratio parts = 2 + 5 = 7 parts
B's profit = (5 / 7) × 14,000 = Rs 10,000

S53. Ans. (a)
Sol. Information Given in the Question:
Total mixture = 44 liters
Milk = Water + 6 liters
Need to add water so that Milk = Water

Detailed Explanation:
Let water = w
Then milk = w + 6
Total = w + (w + 6)
= 2w + 6 = 44
2w = 38
w = 19
Milk = 25 liters
Let **x** liters of water be added
Then, new water = 19 + x
Milk = 25 liters
ATQ,
25 = 19 + x
x = 6

S54. Ans. (c)
Sol. Information Given in the Question:
Length of train = 520 meters
Time to cross a pole = 13 seconds
Platform length = 130 meters
Concept/Formula Used in the Question:
Speed = Distance / Time
Time to cross platform = (Length of train + Length of platform) / Speed
Detailed Explanation:
Speed of the train = 520 / 13 = 40 m/s
Total distance to cross platform = Train + Platform
= 520 + 130 = 650 meters
Required time = 650 / 40 = 65/4 seconds
$= 16\frac{1}{4}$ seconds

S55. Ans. (c)
Sol. Information Given in the Question:
Circumference of the circle = 88 cm
Concept/Formula Used in the Question:
Circumference of circle = $2\pi r$
Area of circle = πr^2
Detailed Explanation:
Given,
$2\pi r = 88$
$r = \frac{88}{2\pi}$
$= \frac{88}{2 \times \frac{22}{7}}$
$= \frac{88 \times 7}{44}$
$= 14$ cm

Required Area = πr^2

$= \frac{22}{7} \times 14 \times 14$

$= \frac{22}{7} \times 196$

$= 616\ cm^2$

S56. Ans. (d)

Sol. Information Given in the Question:

Present age ratio of A : B = 7 : 9

Six years ago, age ratio was A : B = 11 : 15

Detailed Explanation:

Let the present ages of A and B be 7x and 9x respectively.

Six years ago:

A's age = 7x - 6

B's age = 9x - 6

Using the ratio:

$\frac{7x-6}{9x-6} = \frac{11}{15}$

$15(7x-6) = 11(9x-6)$

$105x - 90 = 99x - 66$

$105x - 99x = -66 + 90$

$6x = 24$

$x = 4$

Now, present age of B = 9x = 9 × 4 = 36 years

So, age of B 3 years from now = 36 + 3 = 39 years

S57. Ans. (e)

Sol. Information Given in the Question:

Rent = 20% of income

Groceries = 10% of remaining income after rent

Total expenditure = Rs 4,200

Detailed Explanation:

Let income = Rs x

Rent = 0.20x

Remaining = 0.80x

Groceries = 0.10 × 0.80x = 0.08x

Total Expenditure = 0.20x + 0.08x = 0.28x

Given:

$0.28x = 4200$

$x = \frac{4200}{0.28} = 15{,}000$

Now, Savings = 0.72x

= 0.72×15000=Rs 10,800

S58. Ans. (a)
Sol. Information Given in the Question:
Cost of 6 pens and 9 pencils = Rs 150
Need to find: ¾ of the cost of 12 pens and 18 pencils
Detailed Explanation:
Given that cost of 6 pens + 9 pencils = Rs 150
Observe that 12 pens and 18 pencils = exactly double of 6 pens and 9 pencils
Cost of 12 pens + 18 pencils = 2 × Rs 150 = Rs 300
Required = 3/4th of Rs 300 = (3/4) × 300 = Rs 225
Short Exam Hall Approach:
Notice that 12 pens + 18 pencils = 2 × (6 pens + 9 pencils)
So, total cost = 2 × 150 = 300
Required = 300 × 3/4 = Rs 225

S59. Ans. (c)
Sol. Information Given in the Question:
Average of 3 consecutive even numbers = 106
Concept/Formula Used in the Question:
Average of n numbers = (Sum of numbers) / n
Detailed Explanation:
Let the three consecutive even numbers be: (x − 2), x, and (x + 2)
Their average = (x − 2 + x + x + 2)/3
= (3x)/3
= x
Given average = 106
x = 106
So, the numbers are: 104, 106, 108
Second largest = 106, Largest = 108
Average of these two = (106 + 108)/2
= 214/2 = 107

S60. Ans. (b)
Sol. Information Given in the Question:
Population increases by 10% in the first year.
Then decreases by 5% in the second year.
Concept/Formula Used in the Question:
If a value is increased by *x%* and then decreased by *y%*, the net percentage change is given by:
$$\text{Net Change} = x - y - \left(\frac{xy}{100}\right)$$
Alternatively, for step-by-step:
New population after Year 1 = Initial × (1 + 10/100)
New population after Year 2 = Year 1 Population × (1 - 5/100)

Detailed Explanation:
Assume initial population = 100 (for simplicity)
After 1st year:
= 100 + 10% of 100
= 100 × 1.10 = 110
After 2nd year:
= 110 - 5% of 110
= 110 × 0.95 = 104.5
Net increase = 104.5 - 100 = 4.5
Percentage change = (4.5 / 100) × 100 = 4.5% increase

S61. Ans. (a)
Sol. Wrong number - 225
The pattern of the series-
$220+2^2$ =**224**
$224-3^2$ =215
$215+4^2$ =231
$231-5^2$ =206
$206+6^2$ =242

S62. Ans. (b)
Sol. Wrong number - 150
The pattern of the series-
121+2=123
123+3=126
126+5=131
131+7=138
138+11=**149**

S63. Ans. (c)
Sol. Wrong number- 380
The pattern of the series-
13+91=104
104+93=197
197+95=292
292+97=**389**
389+99=488

S64. Ans. (d)
Sol. Wrong number- 336
The pattern of the series-
322 + 8=330
330 + 8 =338
338+8=**346**
346+8=354
354+8= 362

S65. Ans. (c)
Sol. Wrong number- 7
The pattern of the series-
3×2-2=4
4×2-2=**6**
6×2-2=10
10×2-2=18
18×2-2=34

S66. Ans. (d)
Sol.
$\frac{44}{100} \times 750 + ?^3 = 546$
$?^3 = 546 - 330$
$?^3 = 216$
$? = 6$

S67. Ans. (e)
Sol.
$48 \times ? = \frac{80}{100} \times 840 - 312$
$48 \times ? = 360$
$? = 7.5$

S68. Ans. (d)
Sol.
$(2)^{5\times0.4} \times (2)^{4\times0.3} \times (2)^{6\times0.2} = (2)^?$
$(2)^? = (2)^{2+1.2+1.2}$
$? = 4.4$

S69. Ans. (b)
Sol.
$? \times 1.3 \times 6.5 = 1.17 \times 195$
$? = \frac{1.17\times195}{1.3\times6.5} = 27$

S70. Ans. (b)
Sol.
$?^2 + 114 - 24 \times 5 = 163$
$?^2 + 114 - 120 = 163$
$?^2 = 169$
$? = 13$

S71. Ans. (c)

Sol.

$\frac{3}{4}$ of $\frac{4}{7}$ of $343 = ? \times 21$

$\frac{3}{4} \times \frac{4}{7} \times 343 = ? \times 21$

$? = 49 \times \frac{3}{21} = 7$

S72. Ans. (a)

Sol.

$60 \times \frac{2}{4} - 26 = ?$

$? = 4$

S73. Ans.(c)

Sol.

$\frac{66}{100}$ of $350 + ? = \frac{5}{8}$ of 1256

$\Rightarrow 231 + ? = 785$

$\therefore ? = 785 - 231 = 554$

S74. Ans.(b)

Sol.

$\frac{15}{100} \times 300 + \frac{1}{11} \times 803 + 3 = (?)^2$

$45 + 73 + 3 = (?)^2$

$(?)^2 = 121$

$? = 11$

S75. Ans. (e)

Sol.

$680 \div 17 \times 15 = ?$

$40 \times 15 = ?$

$? = 600$

S76. Ans. (d)

Sol.

$544 \div 8.5 = 2^?$

$2^? = 64$

$?=6$

S77. Ans. (a)
Sol.

$\left(\frac{9}{7}\right)^3 \times \left(\frac{14}{27}\right)^2 \times 7^? = 28$

$\frac{4}{7} \times 7^? = 28$

$7^? = 49$

? = 2

S78. Ans. (b)
Sol.

$\sqrt{784} \div \frac{4}{7} \div 49 = ?$

$? = \frac{28 \times 7}{4 \times 49}$

?=1

S79. Ans. (c)
Sol. 635- 28 + 320 ÷8 = ?

635-28+40=?

?= 647

S80. Ans. (a)
Sol.

$\frac{35}{100} \times 250 + \frac{25}{100} \times 35 = ?$

? = 87.5 + 8.75

?= 96.25