

RRB TEST - 1

ANSWERS WITH EXPLANATIONS

RRB (QUANT)

Directions (1 - 5): What approximate value should come in the place of the question mark (?) in the following questions? (You are not expected to calculate the exact value.)

Q1. 15.5% of 323 - 20.8% of 198 =?

- a. 12
- b. 5
- c. 15
- d. 3
- e. 9

Ans: E

Solution:

$$\begin{aligned} ? &\approx \frac{16 \times 320}{100} - \frac{21 \times 200}{100} \\ &\approx 51.20 - 42 \approx 9.20 \approx 9 \end{aligned}$$

Q2. 3058 ÷ 27 × 3 =?

- a. 360
- b. 348
- c. 340
- d. 330
- e. 321

Ans: C

Solution:

$$? = \frac{3058}{27} \times 3 \approx 340$$

Q3. (3.58)² × (1.75)² = ?

- a. 25
- b. 40
- c. 30
- d. 35
- e. 50

Ans: B

Solution:

$$? = (3.6)^2 \times (1.8)^2 \approx 40$$

Q4. $\sqrt{5138} \div \sqrt{36} = ?$

- a. 21
- b. 6
- c. 12
- d. 18
- e. 26

Ans: C

Solution:

$$? \approx \frac{72}{6} \approx 12$$

Q5. $37.5 \times 34.9 \div 2.75 = ?$

- a. 476
- b. 491
- c. 464
- d. 453
- e. 486

Ans: A

Solution:

$$? \approx \frac{37.5 \times 35}{2.75} \approx 477.27$$

Required answer = 476

Directions (6 - 8): What should come in place of the question mark (?) in the following number series?

Q6. $3? 6 18 72 360 2160$

- a. 4.5
- b. 3
- c. 4
- d. 5.5
- e. None of these

Ans: B

Solution:

The pattern of the number series is:

$$3 \times 1 = 3; \quad 3 \times 2 = 6; \quad 6 \times 3 = 18; \quad 18 \times 4 = 72$$

$$72 \times 5 = 360$$

Q7. $1520 760 380 190 95 47.5?$

- a. 23.75
- b. 22.25
- c. 24.75
- d. 21.25
- e. None of these

Ans: A

Solution:

The pattern of the number series is:

$$1520 \div 2 = 760; \quad 760 \div 2 = 380; \quad 380 \div 2 = 190;$$

$$190 \div 2 = 95; \quad 95 \div 2 = 47.5; \quad 47.5 \div 2 = 23.75$$

Q8. $2 13 67 ? 817 1639 1645$

- a. 271
- b. 205
- c. 262
- d. 218
- e. None of these

Ans: A

Solution:

The pattern of the number series is:

$$2 \times 6 + 1 = 13; \quad 13 \times 5 + 2 = 67; \quad 67 \times 4 + 3 = \boxed{271}$$

$$271 \times 3 + 4 = 817; \quad 817 \times 2 + 5 = 1639$$

Directions (9 - 13) What should come in place of questions mark (?) in the following number series?

Q9. 289, 361, 529, 841, 961, ?

- a. 2209
- b. 2136
- c. 1849
- d. 1681
- e. 1369

Ans: E

Solution:

The pattern of number series is as follow

$$\begin{array}{cccccc} 281 & 361 & 529 & 841 & 961 & \boxed{1369} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 17^2 & 19^2 & 23^2 & 29^2 & 31^2 & 37^2 \end{array}$$

Q10. 30, 34, 43, 59, 84, 120, ?

- a. 169
- b. 148
- c. 153
- d. 176
- e. None of these

Ans: A

Solution:

The pattern of number series is as follow

$$\begin{array}{cccccc} 30 & 34 & 43 & 59 & 84 & 120 & \boxed{169} \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +2^2 & +3^2 & +4^2 & +5^2 & +6^2 & +7^2 & \end{array}$$

Q11. 24, 36, 72, 180, 540, 1890, ?

- a. 4320
- b. 3640
- c. 7560
- d. 5610
- e. None of these

Ans: C

Solution:

The pattern of number series is as follow

$$\begin{array}{cccccc} 24 & 36 & 72 & 180 & 540 & 1890 & \boxed{7560} \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ \times 1.5 & \times 2 & \times 2.5 & \times 3 & \times 3.5 & \times 4 & \end{array}$$

Q12. 8, 31, 122, 485, 1936, 7739, ?

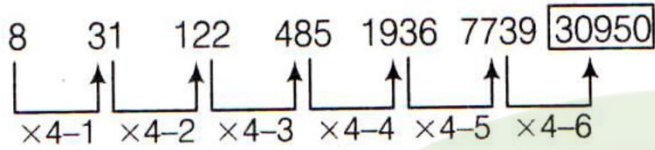
- a. 30460

- b. 30720
- c. 30840
- d. 30950
- e. None of these

Ans: D

Solution:

The pattern of number series is as follow



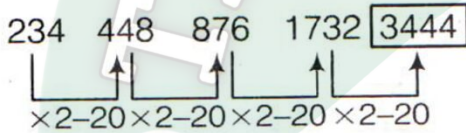
Q13. 234, 448, 876, 1732, ?

- a. 3444
- b. 3222
- c. 3333
- d. 3555
- e. None of these

Ans: A

Solution:

The pattern of number series is as follow



Q14. Six-eleventh of a number is equal to 22% of second number. Second number is equal to the one-fourth of third number. The value of the third number is 2400. What is the 45% of first number?

- a. 107.6
- b. 131.1
- c. 115.4
- d. 143.8
- e. None of these

Ans: E

Q15. Which of the following represents $ab = 64$?

- a. $8 : a = 8 : b$
- b. $a : 16 = b : 4$
- c. $a : 8 = b : 8$
- d. $32 : a = b : 2$
- e. None of these

Ans: D

Solution:

$$\frac{32}{a} = \frac{b}{2}$$

$$\Rightarrow ab = 64$$

Q16. The average of four consecutive odd numbers A, B, C and D respectively is 24. What is the product of B and D?

- a. 483
- b. 675
- c. 621
- d. 525
- e. None of these

Ans: C

Solution:

$$x + x + 2 + x + 4 + x + 6 = 4 \times 24$$

$$\Rightarrow 4x + 12 = 96$$

$$\Rightarrow 4x = 96 - 12 = 84 \therefore x = \frac{84}{4} = 21$$

$$\therefore B = 21 + 2 = 23;$$

$$D = x + 6 = 21 + 6 = 27 \therefore B \times D = 23 \times 27 = 621$$

Q17. The simple interest accrued on an amount of R 12450 at the end of 6 yr is R 8964. What is the rate of interest per cent per annum?

- a. 11
- b. 14
- c. 10
- d. 12
- e. None of these

Ans: D

Solution:

$$SI = R 8964, P = R 12450, T = 6 \text{ yr}, r = ?$$

$$R = \frac{8964 \times 100}{12450 \times 6} = \frac{896400}{12450 \times 6}$$

$$= \frac{896400}{74700} = 12\%$$

Q18. 48% of first number is 60% of the second number. What is the respective ratio of the first number to the second number?

- a. 4 : 5
- b. 3 : 4
- c. 5 : 4
- d. Data inadequate
- e. None of the above

Ans: C

Solution:

Suppose first number is x and second is y .

$$48\% \text{ of } x = 60\% \text{ of } y$$

$$x \times \frac{48}{100} = y \times \frac{60}{100} \Rightarrow 48x = 60y$$

$$\Rightarrow \frac{x}{y} = \frac{60}{48} = \frac{5}{4} = 5 : 4$$

Q19. At what rate of interest per annum will a sum double itself in 8 yr?

- a. $12\frac{1}{2}\%$
- b. $6\frac{1}{4}\%$
- c. 35%
- d. Data inadequate
- e. None of these

Ans: A

Solution:

Let the sum be R100.

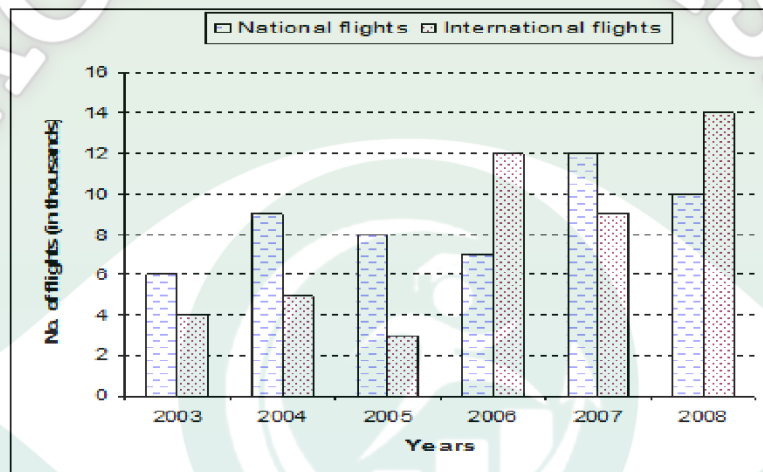
In 8 yr, amount = $100 \times 2 = \text{R } 200$

$$I = 200 - 100 = \text{R } 100$$

$$R = \frac{100 \times 100}{100 \times 8} = \frac{25}{2} = 12\frac{1}{2}\%$$

Directions (20-24): Study the following graph and answer the questions that follow.

Number of National and International flights (in hundreds) cancelled in six different years



Q20. What is the approximate average number of national flights cancelled over all the years?

- a. 780
- b. 867
- c. 898
- d. 824
- e. 765

Ans: B

Solution:

Approximate average =

$$\frac{6+9+8+7+12+10}{6} = \frac{52}{6} = 8.666 \approx 8.67$$

$$= 8.67 \times 10^2 = 867$$

Q21. Total number of international flights cancelled in the years 2006 and 2007 together is approximately what percentage of international flights cancelled in the years 2003, 2004 and 2008 together?

- a. 81
- b. 85
- c. 96
- d. 91

e. 99

Ans: D

Solution:

Approximate percentage

$$= \left(\frac{12+9}{4+5+14} \right) \times 100 = \frac{21}{23} \times 100 = 91.30 \approx 91$$

Q22. What is the difference between the total number of national flights and the total number of international flights cancelled over all the years?

- a. 500
- b. 250
- c. 700
- d. 450
- e. None of these

Ans: A

Solution:

Required difference

$$= (6 + 9 + 8 + 7 + 12 + 10) - (4 + 5 + 3 + 12 + 9 + 14)$$
$$= 52 - 47 = 5 \times 100 = 500$$

Q23. In which year is the total number of flights (both national and international) cancelled the second lowest?

- a. 2003
- b. 2004
- c. 2006
- d. 2007
- e. None of these

Ans: E

Q24. What is the ratio of the number of international flights cancelled in the year 2007 to the total number of national flights cancelled in the years 2004 and 2005 together?

- a. 9:17
- b. 9:8
- c. 16:9
- d. 3:1
- e. None of these

Ans: A

Solution:

respective ratio = 9:17

Directions (25 - 29): Study the following pie-chart carefully to answer these questions:

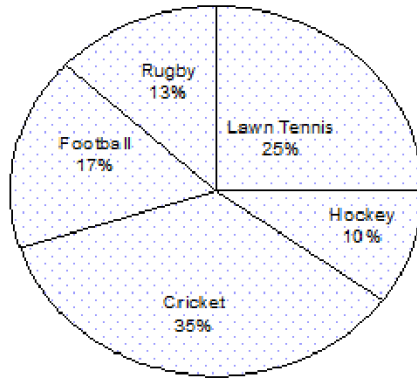
Percentage-wise Distribution of Players

Who play Five Different Sports

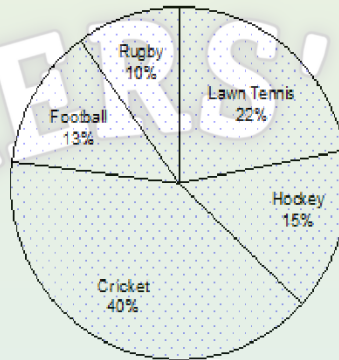
Total Players are 4200, out of which Female

Players are equal to 2000

Total Players = 4200



Female Players = 2000



Q25. What is the average number of players (both male and female) who play Football and Rugby together?

- a. 620
- b. 357
- c. 230
- d. 630
- e. None of these

Ans: D

Solution:

Average number of players who plays Football and Rugby together

$$= \frac{1}{2} \times 30\% \text{ of } 4200 = 630$$

Q26. What is the different between the number of female players who play Lawn Tennis and the number of male players who play Rugby?

- a. 94
- b. 84
- c. 220
- d. 240
- e. None of these

Ans: A

Solution:

Number of female players who play Law Tennis = 22% of 2000 = 440

Number of males players who play Rugby

13% of 4200 – 10% of 2000

$$= 546 - 200 = 346$$

$$\text{Required number} = 440 - 346 = 94$$

Q27. What is the ratio of the number of female players who play Cricket to the number of male players who play Hockey?

- a. 20:7
- b. 4:21
- c. 20:3
- d. 3:20
- e. None of these

Ans: C

Solution:

Number of female players who play

Cricket = 40% of 2000 = 800

Number of male players who play Hockey
= 10% of 4200 – 15% of 2000 = 420 – 300 = 120

Required ratio = 800 : 120 = 20:3

Q28. What is the total number of the male players who play Football, Cricket and lawn tennis together?

- a. 1724
- b. 1734
- c. 1824
- d. 1964
- e. None of these

Ans: B

Solution:

Required number of male players who play Football, Cricket and Lawn Tennis together
= 77% of 4200 – 75% of 2000
= 3234 – 1500 = 1734

Q29. The number of male players who play Rugby is approximately what percentage of the total number of players who play Lawn Tennis?

- a. 33
- b. 39
- c. 26
- d. 21
- e. 43

Ans: A

Solution:

Male players who play Rugby
13% of 4200 – 10% of 2000
= 546 – 200 = 346

Required percentage

$$= \frac{346}{25\% \text{ of } 4200} \times 100 \approx 33\%$$

Q30. Karan starts a business by investing Rs. 60,000 . Six months later Shirish joins him by investing Rs. 1,00,000. At the end of one year from commencement of the business, they earn a profit of Rs. 1,51,800. What is the Shirish's share in the profit:

- a. Rs. 55200
- b. Rs. 82800

- c. Rs. 62500
- d. Rs. 96600
- e. none of these

Ans: E

Solution:

Ratio of the profit= ratio of the equivalent capitals of Karan and Shirish for 1 month = $60000 \times 12 : 100000 \times 6 = 720000 : 600000 = 6:5$

Shirish's share in the profit = $Rs \left(\frac{5}{11} \times 151800 \right) = Rs. 69000$

Q31. Sonu invested 10% more than Mona. Mona invested 10% less than Raghu. If the total sum of their investment is Rs. 5,780, how much amount did Raghu invest:

- a. Rs. 2010
- b. Rs. 2000
- c. Rs. 2100
- d. Rs. 2210
- e. None

Ans: B

Solution:

Let Mona's investment = Rs 100

Sonu's investment = Rs 110 and Raghu's investment = $Rs \frac{1000}{9}$; Ratio of mona's, sonu's and Raghu's

Investments = $100 : 110 : \frac{1000}{9} = 90 : 99 : 100$; Sum of ratios = $90+99+100 = 289$; Raghu's investment = $Rs. \left(\frac{100}{289} \times 5780 \right) Rs. 2000$

Q32. The ratio of ages of Tina and Rakesh is 9:10 respectively. Ten years ago the ratio of their ages was 4:5 respectively. What is the present age of Rakesh:

- a. 25 yr
- b. 20 yr
- c. 30 yr
- d. 24 yr
- e. None

Ans: B

Solution:

Let the present ages of Tina and Rakesh be $9x$ and $10x$ years respectively.

10 years ago, $\frac{9x-10}{10x-10} = \frac{4}{5} \rightarrow 5x = 10 \rightarrow x = \frac{10}{5} = 2$; Rakesh's present age = $10x = 10 \times 2 = 20$ years

Q33. Sum of five consecutive even numbers are 380. What is the second number in ascending order?

- a. 76
- b. 78
- c. 74
- d. 72
- e. None of these

Ans: C

Solution:

Let first even number be x .

Then, second = $x - 2$

Third = $x + 2$

$$\text{Fourth} = x - 4$$

$$\text{Fifth} = x + 4$$

$$\text{So, } x - 2 + x - 4 + x + x + 2 + x + 4 = 380$$

$$\Rightarrow 5x = 380 \quad \Rightarrow \quad x = 76$$

So, second number in ascending order

$$= x - 2 = 74$$

Q34. Sophia invests 25% of her monthly salary in insurance policies. She spends 15% of her monthly salary in shopping and 35% of her salary on household expenses. She saves the remaining amount of R 9050. What is Sophia's annual income?

- a. R 84500
- b. R 530000
- c. R 325200
- d. R 434400
- e. None of these

Ans: D

Solution:

Let the monthly salary of Sophia = R x

Total expenses = 25% of x + 15% of x + 35% of x

$$= 75\% \text{ of } x = \frac{75x}{100}$$

$$\text{Savings} = x - \frac{75x}{100} = \frac{25x}{100}$$

$$\text{So, } \frac{25x}{100} = 9050$$

$$\therefore x = \frac{9050 \times 100}{25} = \text{R } 36200$$

So, annual income = $36200 \times 12 = \text{R } 434400$

Q35. If the cost of 12 kg of wheat is R 228, what is the cost of 112 kg of wheat?

- a. R 2048
- b. R 2868
- c. R 2478
- d. None of these

Ans: E

Solution:

\therefore Cost of 12 kg wheat is R228.

e. \therefore Cost of R 2298

$$1 \text{ kg wheat is } \text{R } \frac{228}{12}$$

\therefore Cost of 112 kg wheat =

$$\frac{228}{12} \times 112 = \frac{2536}{12} = \text{R } 2128$$

Q36. In an examination it is required to get 210 of the aggregate marks to pass. A student gets 168 marks and is declared failed by 8% marks. What are the maximum aggregate marks a student can get?

- a. 615
- b. 525
- c. 500

- d. Data inadequate
- e. None of the above

Ans: B

Solution:

Let the maximum aggregate marks be x .

Therefore,

$$8\% \text{ of } x = 210 - 168$$

$$\Rightarrow \frac{8}{100} \times x = 42$$

$$\Rightarrow x = 525$$

Q37. The average age of a woman and her daughter is 21 yr. The ratio of their is 5 :1, respectively. What will be ratio of their ages after 5 yr?

- a. 10 : 3
- b. 3 : 10
- c. 7 : 3
- d. 3 : 1
- e. None of these

Ans: A

Solution:

Let the ages of woman and her daughter are $5x$ and x respectively. Therefore,

$$\frac{5x + x}{2} = 21$$

$$\Rightarrow 6x = 42$$

$$\Rightarrow x = 7$$

After 5 yr,

Ratio

$$= \frac{5x + 5}{x + 5} = \frac{5 \times 7 + 5}{7 + 5} = \frac{40}{12} = \frac{10}{3} = 10:3$$

Q38. Vinod makes a profit of Rs. 110 if he sells a certain number of pencils he has at the price of Rs. 2.5 per pencil and incurs a loss of Rs. 55 if he sells the same number of pencils for Rs. 1.75 per pencil. How many pencils does Vinod have ?

- a. 220
- b. 240
- c. 200
- d. Cannot be determined
- e. None of these

Ans: A

Solution:

Let Vinod have x pencils.

$$\therefore 2.5 \times x - 1.75 \times x = 110 + 55$$

$$\Rightarrow 0.75 \times x = 165$$

$$\Rightarrow x = \frac{165}{0.75} = 220$$

Q39. Six years from now, the average of Monu's age that time and Ninu's age that time will be 29 years. Five years ago, if the respective ratio between Monu's age and Ninu's age that time was 11 : 7, what is Ninu's present age?

- a. 17 years
- b. 33 years
- c. 27 years
- d. 19 years
- e. 22 years

Ans: D

Solution:

Let the age of Monu = x

Age of Ninu = y

Six years from now,

Monu's age = $x + 6$

Ninu's age = $y + 6$

$$\therefore \frac{x + 6 + y + 6}{2}$$

$$\Rightarrow x + y = 58 - 12 = 46$$

According to question,

$$\frac{x - 5}{y - 5} = \frac{11}{7}$$

$$\Rightarrow 7x - 35 = 11y - 55$$

$$\Rightarrow 7(46 - y) - 35 = 11y - 55$$

$$\Rightarrow 322 - 7y - 35 = 11y - 55$$

$$\Rightarrow -18y = -342$$

$$\Rightarrow y = 19$$

$$\therefore x = 46 - y = 46 - 19 = 27$$

Ninu's age = $y = 19$ years

Q40. What would be the compound interest obtained on an amount of R 4000 at the rate of 5% per annum after 3 yr?

- a. R 612.5
- b. R 578.5
- c. R 525.5
- d. R 630.5
- e. None of these

Ans: D

Solution:

$$\text{Compound interest} = P \left[\left(1 + \frac{r}{100} \right)^t - 1 \right]$$

$$= 4000 \left[\left(1 + \frac{5}{100} \right)^3 - 1 \right]$$

$$= 4000 \left[\left(\frac{105}{100} \right)^3 - 1 \right]$$

$$= 4000 \left[\left(\frac{21}{20} \times \frac{21}{20} \times \frac{21}{20} \right) - 1 \right]$$

$$= 4000 \left[\frac{9261}{8000} - 1 \right]$$

$$= 4000 \left[\frac{9261 - 8000}{8000} \right]$$

$$= 4000 \frac{1261}{8000} = \text{R } 630.50$$

RRB (REASONING)

Directions (01 - 04) Study the following information carefully and answer the questions given below.

A, B, C, D, E, F and G are seven members of a club. Each of them likes one day of the week viz. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday, not necessarily in the same -order. Each of them owns a different car type viz. Swift, Alto, Figo, Beat, SX4, Estillo and Optra, not necessarily in the same order.

C likes Wednesday and his favourite car is neither SX4 nor Optra. E does not like Monday and his favourite car is Beat. The favourite car of the one who likes Friday is Figo. The one whose favourite car is Estillo likes Tuesday. D likes Saturday and D's favourite car is not SX4. G's favourite car is Alto. F likes Thursday. B does not like Estillo.

Q01. Who among them likes Tuesday?

- a. A
- b. B
- c. D
- d. Data inadequate
- e. None of these

Ans: A

Solution:

Member	Day	Car
A	Tuesday	Estillo
B	Friday	Figo
C	Wednesday	Swift
D	Saturday	Optra
E	Sunday	Beat
F	Thursday	SX4
G	Monday	Alto

Q02. Whose favorite car is Figo?

- a. A
- b. B
- c. F
- d. C
- e. None of these

Ans: B

Q03. Who among them likes Sunday?

- a. A
- b. C
- c. F
- d. E
- e. Data inadequate

Ans: D

Q04. Whose favorite car is SX4?

- a. B
- b. A

- c. F
- d. D
- e. None of these

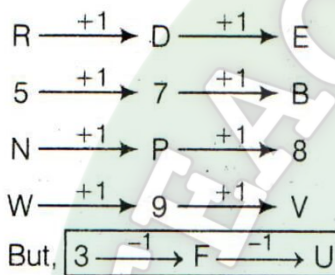
Ans: C

Q05. Four of the following five are alike in a certain way based on their positions in the above arrangement and so form a group. Which is the one that does not that group?

- a. RDE
- b. 57B
- c. NP8
- d. W9V
- e. 3FU

Ans: E

Solution:



Q06. How many such numbers are there in the above arrangement, each of which is immediately preceded by a consonant and also immediately followed by a consonant?

- a. None
- b. One
- c. Two
- d. Three
- e. More than three

Ans: D

Solution:

Consonant	Number	Consonant
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Such combinations are M2R, W9V, F3H.

Q07. Statements B * K, K \$ N, N % R

Conclusions

- I. R \$ K
- II. R * K

Ans: C

Solution:

Statements B * K \Rightarrow B < K

K \$ N \Rightarrow K = N, N % R \Rightarrow N \geq R

So, B < K = N \geq R

Conclusions

I. R \$ K \Rightarrow R = K (False)

II. $R * K \Rightarrow R < K$ (False)

Q08. Statements $H \% F, F * W, W \$ E$

Conclusions

I. $E \delta F$

II. $H \delta W$

Ans: A

Solution:

Statements $H \% F \Rightarrow H \geq F, F * W \Rightarrow F < W, W \$ E$

Conclusions

I. $E \delta F \Rightarrow E > F$ (True)

II. $H \delta W \Rightarrow H > W$ (False)

So, $H \geq F < W E$

Q09. Statements $Z \delta D, D \odot K, K \delta M$

Conclusions

I. $M * D$

II. $Z \delta K$

Ans: D

Solution:

Statements $Z \delta D \Rightarrow Z > D, D \odot K \Rightarrow D \leq K, K \delta M \Rightarrow K > M$

So, $Z > D \leq K > M$

Conclusions

I. $M * D \Rightarrow M < D$ (False)

II. $Z \delta K \Rightarrow Z > K$ (False)

Directions (10 - 13) Study the following information carefully and answer the questions given below. A, B, C, D, E, F and G are sitting around a circle facing the center, not necessarily in the same order. D is not second to the left of F but D is second to the right of A. C is third to the right of A and C is second to the left of G. B is not an immediate neighbor of G.

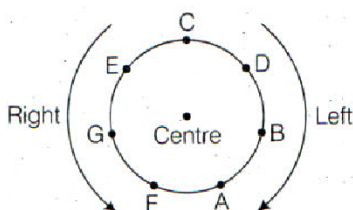
Q10. Who is to the immediate right of C?

- a. D
- b. G
- c. E
- d. B
- e. Data inadequate

Ans: C

Solution:

Seven persons seating arrangements are as follows



Q11. Who is the 'only one person sitting between A and G?

- a. B

- b. D
- c. C
- d. E
- e. F

Ans: E

Q12. Who is to the immediate left of D?

- a. B
- b. C
- c. A
- d. Data inadequate
- e. None of these

Ans: A

Q13. Who is E's position with respect to D?

- a. To the immediate right
- b. To the immediate left
- c. Third to the right
- d. Second to the right
- e. Third to the left

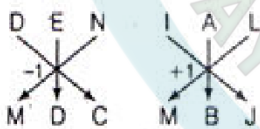
Ans: D

Q14. In a certain code DENIAL is written as MDCMBJ. How is SOURCE written in that code?

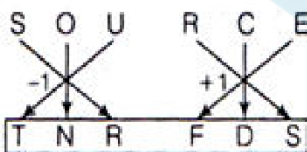
- a. TNRFDS
- b. RNTFDS
- c. TNRSDF
- d. TRNDBQ
- e. None of these

Ans: A

Solution:



Similarly,



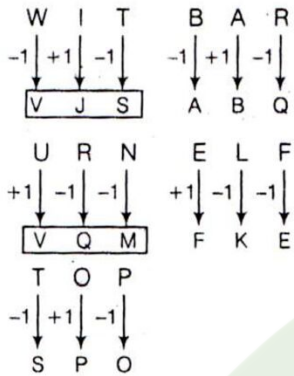
Q15. If in each of the given words, each of the consonants is changed to previous letter and each vowel is changed to next letter in the English alphabetical series, in how many words thus formed will no vowels appear?

- a. None
- b. One

- c. Two
- d. Three
- e. More than three

Ans: C

Solution:



Q16. Statements

All stars are planets.

All planets are galaxies.

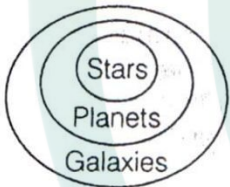
Conclusions

- I. All galaxies being planets is a possibility.
- II. All stars are galaxies.

Ans: E

Solution:

According to the statements, venn diagram is as follow



Conclusions

- I. ✓
- II. ✓

Both Conclusions I and II follow.

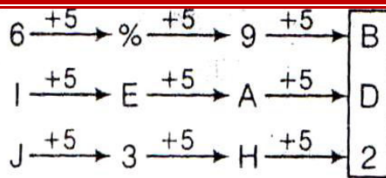
Q17. What will come in the place of the question mark (?) In the following series based on the above arrangement?

6IJ, %E3, 9AH, ?

- a. B@2
- b. 7@D
- c. 7BD
- d. BD2
- e. None of these

Ans: D

Solution:



Q18. Which of the following means T is wife of P?

- $P \times S \div T$
- $P \div S \times T$
- $P - S \div T$
- $P + T \div S$
- None of these

Ans: E

Solution:

In expression (1) and (3) sex of T can't be determined.

In expression (2), T is wife of S.

In expression (4), T is father of P.

Hence, given choices are not perfect to choose.

Directions (19 - 21) Study the following information carefully and answer the questions that follow.

- A, B, C, D, E and F are six members in a family in which there are two married couples.
- D is brother of F. Both D and F are lighter than B.
- B is mother of D and lighter than E.
- C a lady, is neither heaviest nor the lightest in the family is the second oldest in the family.
- E is lighter than C.
- The grandfather in the family is the heaviest.

Q19. How is E related to F?

- Grandmother
- Brother
- Father
- Data inadequate
- None of these

Ans: C

Solution:

E is the husband of B and B is the mother of F. So, E is the father of F.

In terms of weight, $F < B$, $D < B$, $B < E$, $E < C$. So, we have $D < F < B < E < C$ or $F < D < B < E < C$. C is not the heaviest. So, A is the heaviest.

Thus, the sequence becomes $F < D < B < E < C < A$ or $D < F < B < E < C < A$.

D is the brother of F.

B is the mother of D and F.

A, being the heaviest, is the grandfather.

Now, C is a lady and so one couple is AC.

B is a female and so can't pair up with C. So, the other couple is BE.

Q20. Which of the following is a pair of married couples?

- AB

- b. BC
- c. AD
- d. BE
- e. None of these

Ans: D

Solution: AC and BE are the married couples

Q21. How many male members are there in the family?

- a. Two
- b. Three
- c. Four
- d. Data inadequate
- e. None of these

Ans: D

Solution: The sex of F can't be ascertained from the given data.

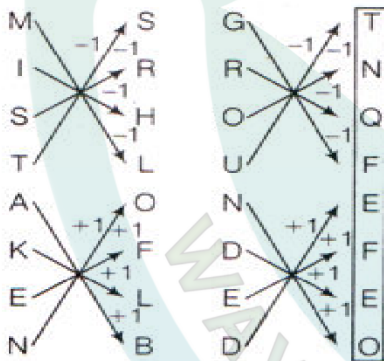
Q22. In a certain code, MISTAKEN is written as SRHLOFLB. How is GROUNDED written in that code?

- a. CDCMTNQF
- b. TNQFCDCM
- c. EFEO TNQF
- d. TNQFEFEO
- e. None of these

Ans: D

Solution:

As, Similarly,



Directions (23 - 27) In the following questions, the symbols @, ©, ★, \$ and % are used with the following meaning as illustrated below.

- I. 'P ★ Q' means 'P is neither smaller than nor equal to Q'.
- II. 'P © Q' means 'P is neither greater than nor equal to Q'.
- III. 'P @ Q' means 'P is not greater than Q'.
- IV. 'P % Q' means 'P is not smaller than Q'.
- V. 'P \$ Q' means 'P is neither smaller than nor greater than Q'.

Now in each of the following questions assuming the given statements to be true, find which of the two Conclusions I and II given below them is/are definitely true?

Give Answer

- 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 $H @ K, K \% D, D \$ B$

Conclusions

- I. $H @ B$
 II. $B @ K$

Ans: B

Solution:

Statements $H @ K \Rightarrow H \leq K$

$K \% D \Rightarrow K \geq D$

$D \$ B \Rightarrow D = B$

Therefore, $H \leq K \geq D = B$

Conclusions

I. $H @ B \Rightarrow H \leq B$ (False)

II. $B @ K \Rightarrow B \leq K$ (True)

Hence, only II is true.

Q24. Statements $M \% F, F \odot R, R \star K$

Conclusions

I. $K \odot F$

II. $M \star R$

Ans: D

Solution:

Statements $M \% F \Rightarrow M \geq F$

$F \odot R \Rightarrow F < R$

$R \star K \Rightarrow R > K$

Therefore, $M \geq F < R > K$

Conclusions

I. $K \odot F \Rightarrow K < F$ (False)

II. $M \star R \Rightarrow M > R$ (False)

Hence, none is true.

Q25. Statements $A \star F, H @ F, M \odot H$

Conclusions

I. $M \odot F$

II. $A \star H$

Ans: E

Solution:

Statements $A \star F \Rightarrow A > F$

$H \odot F \Rightarrow H \leq F$

Therefore, $A > F \geq H > M$

Conclusions

I. $M \odot F \Rightarrow M < F$ (True)

II. $A \star H \Rightarrow A > H$ (True)

Hence, both are true.

Q26. Statements $R \odot M, M \star W, T @ W$

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Conclusions

- I. $T \odot M$
- II. $T \odot R$

Ans: A

Solution:

Statements $R \odot M \Rightarrow R < M$

$M \star W \Rightarrow M > W$

$T @ W \Rightarrow M \leq W$

Therefore, $R < M > W \geq T$

Conclusions

- I. $T \odot C M \Rightarrow T < M$ (True)
- II. $T \odot R \Rightarrow T < R$ (False)

Hence, only I is true.

Q27. Statements $J \odot K, K @ D, D \$ F$

Conclusions

- I. $F \star K$
- II. $F \$ K$

Ans: C

Solution:

Statements $J @ K \Rightarrow J < K$

$K @ D \Rightarrow K \leq D$

$D \$ F \Rightarrow D = F$

Therefore, $J < K \leq D = F$

Conclusions

- I. $F \star K \Rightarrow F > K$ (False)
- II. $F \$ K \Rightarrow F = K$ (False)

F is either greater than or equal to K.

Therefore, either I or II is true.

Directions (28- 30) Following questions are based on the five three digit numbers given below.

518 723 496 375 254

Q28. If 1 is added to the first digit of each number and 1 is subtracted from the third digit of each number, which of the following will be the new second lowest number?

- a. 518
- b. 723
- c. 496
- d. 375
- e. 254

Ans: D

Solution:

$518 \Rightarrow 617; 723 \Rightarrow 822; 496 \Rightarrow 595$

$375 \Rightarrow 474; 254 \Rightarrow 353$

Second lowest number $\Rightarrow 474 \Rightarrow 375$

Q29. If the positions of the first and the second digits, of each of the above numbers are interchanged, which of the following will be the third digit of the lowest number?

- a. 8
- b. 3
- c. 6
- d. 5
- e. 4

Ans: A

Solution:

518 \Rightarrow 158; 723 \Rightarrow 273; 496 \Rightarrow 946 375 \Rightarrow 735; 254 \Rightarrow 524

Lowest number \Rightarrow 158 \Rightarrow 51 $\boxed{8}$

Q30. If the positions of the first and the third digits of each of the above numbers are interchanged which of the following will be the second digit of the highest number?

- a. 1
- b. 2
- c. 9
- d. 7
- e. 5

Ans: A

Solution:

518 \Rightarrow 815; 723 \Rightarrow 327; 496 \Rightarrow 694

375 \Rightarrow 573; 254 \Rightarrow 452

Highest number \Rightarrow 815 \Rightarrow 5 $\boxed{1}$ 8

Ans: A

Directions (31 - 35) In each question below is given a group digits/symbols followed by four combinations of letters (1), (2), (3) and (4). You have to find out which of the combinations correctly represents the group of digits/symbols based on the following coding system and the conditions that follow and mark the number of that combination as your answer. If none of the combinations correctly represents the group of digits/symbols, mark (5) i.e., 'None of these' as your answer.

Digit/symbol	5	@	3	©	9	8	%	8	1	4	2	\$	#	7	6	*
Letter code	P	I	M	A	E	G	F	J	H	B	D	N	R	Q	T	U

Conditions

- I. If the first unit is a symbol and the last unit is an even digit both are to be coded as the code for the even digit.
- II. If the first unit is an even digit and the last unit is an odd digit their codes are to be interchanged.
- III. If the first unit is an odd digit and the last unit is a symbol both are to be coded as the code for the symbol.
- IV. If both the first and the last units are symbols both are to be coded as Z.

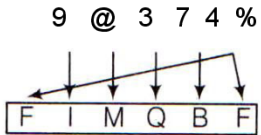
Q31. 9 @ 374%

- a. EIMQBF
- b. FBQMIE
- c. ZIMQBZ
- d. FIMQBF

e. None of these

Ans: D

Solution:



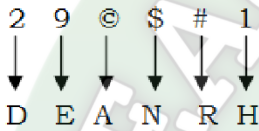
∴ Condition (iii) follows.

Q32. 29 © \$ # 1

- a. HEANRD
- b. DEANRH
- c. DEANRD
- d. HEANRH
- e. None of these

Ans: B

Solution:



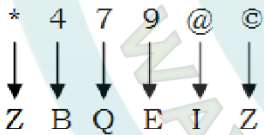
∴ None condition follows.

Q33. * 479 @ ©

- a. UBQEIA
- b. ZBQEIA
- c. ZBQEIZ
- d. ABQEIU
- e. None of these

Ans: C

Solution:



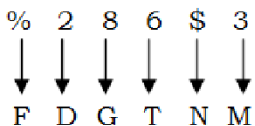
∴ Condition (iv) follows.

Q34. % 286 \$ 3

- a. FDGTNF
- b. FDGTNM
- c. FGDTNM
- d. ZDGTNZ
- e. None of these

Ans: B

Solution:



∴ None condition follows.

Q35. 54 # * @ 6

- a. PBURIT
- b. PBRUIP
- c. TBRUIP
- d. TBRUIT
- e. None of these

Ans: E

Solution:

5	4	#	*	@	6
↓	↓	↓	↓	↓	↓
P	B	R	U	I	T

∴ No condition follows.

Directions (36 - 40) Read the following information carefully and then answer the questions based on it.

- I. A, B, C, D, E and F are six members in the family. There are two pair of couples in the family.
- II. There are two Engineers, one Teacher, one Sociologist and two Artists. Both the Engineers are of the same sex.
- III. A and C are in the same profession.
- IV. The Teacher is married to the Engineer and the Artist is married to the lady Sociologist.
- V. A is an Artist. E is a male Engineer. Both of them are unmarried.
- VI. F is B's husband.

Q36. Who is married with the Teacher?

- a. F
- b. C
- c. E
- d. B
- e. None of these

Ans: A

Solution:

Male Engineer F is married to female Teacher B.

Since, A and E are unmarried, the two couples will be (F-B) and (C-D). A and C will be Artists out of which C is married and A is unmarried.

Now, from the information (iv), (v) and (vi), we get that C the male Artist is married to D, a lady Sociologist and F, the male Engineer is married to B, a female Teacher.

	Engin- -eer	Artist	Teach- -er	Sociol- -ogist
A	X	✓	X	X
B	X	X	✓	X
C	X	✓	X	X
D	X	X	X	✓
E	✓	X	X	X
F	✓	X	X	X

Q37. Who is Sociologist by profession?

- a. B
- b. F

- c. C
- d. Can't be determined
- e. None of the above

Ans: E

Solution:

Female D is a Sociologist.

Q38. Which of the following are the pairs of couples?

- a. FD and BD
- b. CD and FB
- c. CD and FD
- d. Can't be determined
- e. None of the above

Ans: B

Solution:

CD and FB are the married couples.

Q39. What is the profession of B?

- a. Engineer
- b. Teacher
- c. Sociologist
- d. Artist
- e. None of these

Ans: B

Q40. Who is Artist by profession?

- a. B
- b. A
- c. D
- d. F
- e. None of these

Ans: B

