RRB (GROUP D) MOCK TEST – 03 (SOLUTION)

1. (D) According to question,
Mohan + Rohan + 2Shyam = 59 ....(i)
Shyam + Rohan + 3Mohan = 68 .... (ii)
Mohan + 3Shyam + 3Rohan = 108 ...(iii)
Subtract equation (iii) from thrice the equation (ii), we get
3Shyam + 3Rohan + 9Mohan – Mohan – 3Shyam – 3Rohan = 204 – 108
$\Rightarrow$ 8Mohan = 96
$\Rightarrow$ Mohan = $\frac{96}{8}$ = 12 years

2. (D) Let the money borrowed be ₹ x and rate be r%.
and Time = 2 years
$\therefore$ 4000 = $\frac{x \times r \times 2}{100}$
$\Rightarrow$ rx = 200000
and $x\left(1+\frac{r}{100}\right)^2 = x + 4200$
$\Rightarrow$ $x + \frac{xr^2}{10000} + \frac{2xr}{100} = 4200 + x$
$\Rightarrow$ $20r + 4000 = 4200$
$\Rightarrow$ r = 10%

3. (A) Equivalent capital of Sonu for 3 year
= ₹ (60,000 × 1 + 80,000 × 2)
= ₹ (60,000 + 1,60,000) = ₹ 2,20,000
Equivalent capital of Monu for 3 year
= ₹ (90,000 × $2\frac{1}{2}$)
= ₹ $\left(90{,}000 \times \frac{5}{2}\right)$ = ₹ 22, 50, 00
Ratio of their capitals = 220000 : 225000
= 44 : 45
Sum of ratios = 44 + 45 = 89
Total profit = ₹ 71,20,000
$\therefore$ Sonu's share
= ₹ $\left(\frac{44}{89} \times 71{,}20{,}000\right)$ = ₹ 35,20,000

4. (A) Books on Economics are to be kept together. Hence, we are to arrange 3 books on management, 4 books on Statistics and one book on Economics.
These can be arranged in 8! ways.
Again, 4 books on Economics can be arranged together in 41 ways.
$\therefore$ Total number of arrangements
= 8! × 4! = 967680
[$n!$ = 1.2.3.4 .... (n–1) (n)]

5. (B) Let the production cost of article = ₹x
A.T.Q,
$\frac{x \times 110 \times 115 \times 125}{100 \times 100 \times 100}$ = 1265
$\Rightarrow$ x = 800
So, the cost price of article = ₹800

6. (D) New ratio of fares (1st, 2nd and 3rd)
= 8 × $\frac{5}{6}$: 6 × $\frac{11}{12}$: 3 × 1
= 80 : 66 : 36 = 40 : 33 : 18
Ratio of passengers = 9 : 12 : 26
$\Rightarrow$ Ratio of amount collected
= 40 × 9 : 12 × 33 : 26 × 18
= 90 : 99 : 117
Amount collected from 1st class fares
= $\frac{99}{306}$ × 1088 = ₹ 320

7. (B) $\because$ Distance between 21 posts
= (21 – 1) × 50 = 1000 m
$\therefore$ Speed of train = 1 km/min = 60 km/h

8. (B) Let one man takes x days to complete the work and one woman takes y days to complete the work independently.
Then, $\frac{4 \times 4}{x} + \frac{10 \times 4}{y} = \frac{1}{3}$
and $\frac{6 \times 2}{x} + \frac{12 \times 2}{y} = \frac{2}{9}$
Solving above equations, we get
x = 108, y = 216
Let z women be added to complete the work in 3 days.
Then, $\frac{6 \times 3}{108} + \frac{3(12+z)}{216} = 1 - \left(\frac{1}{3} + \frac{2}{9}\right) = \frac{4}{9}$
$\Rightarrow$ $36 + 36 + 3z = \frac{216+4}{9} = 96$
$\Rightarrow$ $3z = 96 - 72 = 24$ $\Rightarrow$ z = 8

9. (D) Initially, let x g of water and Acid was taken. Initially 1st process
First test tube = $(x - 20)$ g
Second test tube = $(x + 20)$ g
2nd process

First test tube = $(x - 20) + (x + 20) \times \frac{2}{3}$

Second test tube = $(x + 20) \times \frac{1}{3}$

A/Q, $(x - 20) + \frac{2}{3}(x + 20) = 4 \times \frac{1}{3}(x + 20)$

$\Rightarrow x - 20 = \frac{2}{3}(x + 20)$

$\Rightarrow 3x - 60 = 2x - 40$

$\Rightarrow x = 100$ grm

10. (A) Largest side of the right angle triangle
$= \sqrt{6^2 + 8^2} = 10$ cm
Side of square = 10 × 3 = 30 cm
$\therefore$ Digonal of the square = $30\sqrt{2}$ cm

11. (B) If total maximum marks be x, then,

$\frac{x \times 64}{100} = 2240 - 128 = 2112$

$\Rightarrow ? = \frac{2112 \times 100}{64} = 3300$

Marks obtained by 54 unite
= 2240 – 907 = 1333
Required percentage

$= \frac{1333}{3300} \times 100 \approx 40\%$

12. (C) If the number of ₹ 2 coins be x, then number of ₹ 5 coins = $x - 5$
$\therefore 2x + 5(x - 5) = 50 - 26$
$\Rightarrow 2x + 5x - 25 = 24$
$\Rightarrow 7x = 24 + 25 = 49$

$\Rightarrow x = \frac{49}{7} = 7$

13. (A) C's present age = 85 – 7 = 78 years
B's present age = 78 – 12 = 66 years

$\therefore$ A's present age = $\frac{3}{11} \times 66 = 18$ years

$\therefore$ A's father's present age
= 25 + 18 = 43 years

14. (C) According to question,
CP of 20 articles = SP of x articles = 1 (let)

$\therefore$ CP of 1 articles = $\frac{1}{20}$

SP of 1 articles = $\frac{1}{x}$

Profit per cent = $\frac{\frac{1}{x} - \frac{1}{20}}{\frac{1}{20}} = \frac{25}{100}$

$\Rightarrow \frac{20 - x}{x} = \frac{1}{4}$
$\Rightarrow 80 - 4x = x$
$\Rightarrow 5x = 80$
$\Rightarrow x = 16$

15. (B) Required probability = $\frac{5_{C_2}}{7_{C_2}} = \frac{10}{21}$

16. (A) Total runs in the first 10 overs
= 10 × 3.2 = 32
Runs rate in the remaining 40 overs

$= \frac{282 - 32}{40} = \frac{250}{40} = 6.25$

17. (B) Required difference

$= \left(\frac{7}{11} \times 2 - \frac{4}{11} \times 3\right)$

$= \frac{2}{11} \times 73689 =$ ₹ 13398

18. (A) Actual weight of 75 girls

$= \frac{75 \times 47 - 20}{75} = 46.73$ kg

19. (C) Let the number of children be x
$\therefore$ No. of sweets received by each child

$= \frac{405}{x}$

$\Rightarrow \frac{405}{x} = 20\%$ of x

$\Rightarrow \frac{405}{x} = \frac{x}{5}$
$\Rightarrow x^2 = 405 \times 5$
$\Rightarrow x = \sqrt{405 \times 5}$
$\Rightarrow x = \sqrt{81 \times 5 \times 5} = 9 \times 5 = 45$

$\therefore$ Required no. of sweets received by each child

$= \frac{405}{45} = 9$

20. (C) Let the speed of boat in still water be x kmph and that of current be y kmph.

$\therefore x + y = \dfrac{4.8}{\frac{8}{60}} = \dfrac{4.8 \times 60}{8}$

$\Rightarrow x + y = 36$....(i)

and, $x - y = \dfrac{4.8}{\frac{9}{60}} = \dfrac{4.8 \times 60}{9}$

$\Rightarrow x - y = 32$ ....(ii)

By equation (i) – (ii),

$x + y - x + y = 36 - 32 = 4$

$\Rightarrow 2y = 4$

$\Rightarrow y = \dfrac{4}{2} = 2$ kmph

21. (A) $\because$ 12 men can complete the work in 36 days.

$\therefore$ 12 × 36 men can complete the work in 1 day.

Again,

$\because$ 18 women can complete the work in 60 days.

$\therefore$ 18 × 60 women can complete the work in 1 day.

Now, 12 × 36 men = 18 × 60 women

$\Rightarrow$ 2 men = 5 women

Now, 8 men + 20 women

= (4 × 5 + 20) women = 40 women

$\because$ 18 women complete the work in 60 days.

$\therefore$ 40 womens' 20 days' work = $\dfrac{40 \times 20}{18 \times 60} = \dfrac{20}{27}$

$\therefore$ Remaining work = $1 - \dfrac{20}{27} = \dfrac{7}{27}$

$\therefore$ 18 × 60 women do 1 work in 1 day.

$\therefore$ 1 woman does = $\dfrac{1}{18 \times 60}$ Work in 1 day

$\therefore$ 1 woman does in 4 days

= $\dfrac{4}{18 \times 60} = \dfrac{1}{18 \times 15}$ Work

$\therefore$ $\dfrac{1}{18 \times 15}$ work is done in 4 days by 1 woman

$\therefore$ $\dfrac{7}{27}$ work is done in 4 days by

= $\dfrac{18 \times 15 \times 7}{27}$ = 70 women

22. (B) Let the length of the piece be x m

Cost of price = ₹ 35

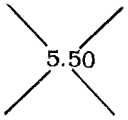
Then, price per metre = ₹ $\dfrac{35}{x}$

$\therefore (x + 4)\left(\dfrac{35}{x} - 1\right) = 35$

$\Rightarrow x = 10$ m

23. (B) Using Alligation Method,

Sugar I	**Sugar II**
5.75	4.50



5.50 – 4.50 5.75 – 5.50

=1.00 = 0.25

i.e., 4 : 1

Hence, the required quantity of Sugar I

= $\dfrac{75}{1} \times 4 = 300$ kg

24. (B) Area of the square = 22 × 22 = 484 sq.cm

$\therefore$ Circumference of circle = 484 cm

$\Rightarrow \pi \times$ Dimater = 484

$\Rightarrow \dfrac{22}{7} \times$ Dimater = 484

$\therefore$ Dimater = $\dfrac{484}{22} \times 7 = 154$ cm

$\therefore$ Lenght of rectangle

= 2 × 154 cm = 308 cm

$\therefore$ 2(lenght + breadht) = Perimeter of rectangle

$\Rightarrow 2(308 + x) = 668$ [Breadht = x (let)]

$\Rightarrow 308 + x = \dfrac{668}{2} = 334$

$\Rightarrow x = 334 - 308 = 26$ cm

25. (A) Let the distance between villages A and B be x km.

$\therefore \dfrac{x}{40} - \dfrac{x}{60} = 2 \Rightarrow \dfrac{3x - 2x}{120} = 2$

$\Rightarrow x = 2 \times 120 = 240$ km

26. (D) गणित विषय सूत्रों पर आधारित होता है और रसायन-शास्त्र **अभिक्रियाओं** पर आधारित होता है।

27. (D) जिस प्रकार,

F —विपरीत→ U

उसी प्रकार,

D —विपरीत→ **W**

28. (C) 60 × 2.5 = 150

46 × 2.5 = **115**

29. (A) 'सेहत की चाबी' पुस्तक महात्मा गाँधी ने लिखी और 'भारत की खोज' पुस्तक **जवाहर लाल नेहरू** द्वारा लिखी गयी है।

30. (D)

B ←विपरित→ Y (+5) G

K ←विपरित→ P (+5) P

H ←विपरित→ S (+5) M

A ←विपरित→ Z (+4) E

31. (D) **रोने** के अलावा, अन्य सभी भावनात्मक स्थिति है।

32. (D) (123, 36) ⇒ $(1 + 2 + 3)^2 = 36$

(243, 81) ⇒ $(2 + 4 + 3)^2 = 81$

(768, 441) ⇒ $(7 + 6 + 8)^2 = 441$

(622, 144) ⇒ $(6 + 2 + 2)^2 = 100 \neq 144$

33. (D) 8 × 4 – 8 = 24

7 × 5 – 7 = 28

9 × 6 – 9 = **45**

34. (A)

B C Y
2 + 3 ⇓ $(5)^2 = 25$

A B I
1 + 2 ⇓ $(3)^2 = 9$

B B **P**
2 + 2 ⇓ $(4)^2$ = **16**

35. (B) 7, 14, 56, 448, **7168**

(×2, ×4, ×8, ×16)

36. (D) 256 ÷ 64 × 41 – 76 = 88

⇒ 4 × 41 – 76 = 88

⇒ 164 – 76 = 88

⇒ **88 = 88**

37. (B) 18 $ 6 ⇒ (18 + 6) × (18 – 6) = 288

17 $ 7 ⇒ (17 + 7) × (17 – 7) = 240

27 $ 23 ⇒ (27 + 23) × (27 – 23) = 200

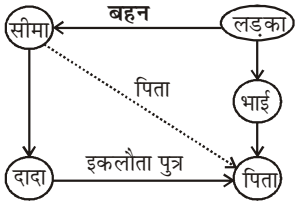
38. (D)

	B	W	I	F	H	O
वर्णमाल के अनुसार विपरीत स्थिति	25	4	18	21	19	12

जिस प्रकार, WIFI = 4 + 18 + 21 + 18 = 61

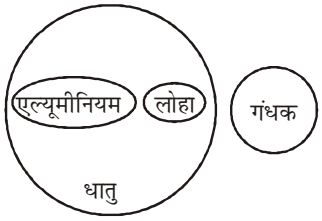
उसी प्रकार, HOW = 19 + 12 + 4 = **35**

39. (C)

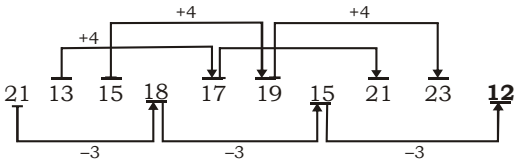


40. (C)

41. (D)



42. (C)



43. (C)

CAB, **HFG,** LJK, OMN

(+5, +4, +3)

44. (C)

45. (D)

46. (B)

47. (B)

48. (C)

49. (B)

50. (D)

I. ×

II. ×

अतः, न तो निष्कर्ष I न ही निष्कर्ष II सही है।

Answer key

1. (D)	14. (C)	27. (D)	38. (D)	49. (B)	62. (D)	75. (C)	88. (D)
2. (D)	15. (B)	28. (C)	39. (C)	50. (D)	63. (B)	76. (D)	89. (A)
3. (A)	16. (A)	29. (A)	40. (C)	51. (C)	64. (D)	77. (A)	90. (A)
4. (A)	17. (B)	30. (D)	41. (D)	52. (A)	65. (C)	78. (B)	91. (D)
5. (B)	18. (A)	31. (D)	42. (C)	53. (D)	66. (B)	79. (C)	92. (D)
6. (D)	19. (C)	32. (D)	43. (C)	54. (B)	67. (A)	80. (B)	93. (C)
7. (B)	20. (C)	33. (D)	44. (C)	55. (A)	68. (C)	81. (B)	94. (A)
8. (B)	21. (A)	34. (A)	45. (D)	56. (C)	69. (A)	82. (D)	95. (D)
9. (D)	22. (B)	35. (B)	46. (B)	57. (B)	70. (C)	83. (C)	96. (A)
10. (A)	23. (B)	36. (D)	47. (B)	58. (D)	71. (D)	84. (D)	97. (B)
11. (B)	24. (B)	37. (B)	48. (C)	59. (C)	72. (C)	85. (A)	98. (B)
12. (C)	25. (A)			60. (A)	73. (B)	86. (B)	99. (B)
13. (A)	26. (D)			61. (B)	74. (C)	87. (D)	100.(A)

For all RRB competitive exams