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2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

RRB MOCK TEST - 08 (SOLUTION)

1. (D) Salma's monthly salary

$$= \text{₹} \left(\frac{2170 \times 100}{7} \right) = \text{₹} 31000$$

Percentage monthly investment by Sujata

$$= 7 + 18 + 6 = 31\%$$

Salma's annual investment

$$= 12 \times \frac{31}{100} \times 31000 = \text{₹} 1,15,320$$

2. (B) Amount = Principal $\left(1 + \frac{\text{Rate}}{100}\right)^{\text{Time}}$

$$= 20000 \left(1 + \frac{10}{100}\right)^2 \left(1 + \frac{20}{100}\right)$$

(Rate of interest for the first year = 10%, Time = 2 half years)

$$= \text{₹} \left(20000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{6}{5} \right) = \text{₹} 29040$$

$$\therefore \text{C.I.} = \text{₹} (29040 - 20000) = \text{₹} 9040$$

3. (B) Clearly,

$$9 \times 360 \text{ children} = 18 \times 72 \text{ men}$$

$$= 12 \times 162 \text{ women}$$

$$\Rightarrow 45 \text{ children} = 18 \text{ men} = 27 \text{ women}$$

$$\Rightarrow 5 \text{ children} = 2 \text{ men} = 3 \text{ women}$$

Now, 4 men + 12 women + 10 children

$$= 4 \text{ men} + 8 \text{ men} + 4 \text{ men} = 16 \text{ men}$$

\therefore 18 men can complete the work in 72 days.

\therefore 16 men can complete the same work

$$= \frac{18 \times 72}{16} = 81 \text{ days}$$

4. (D) Ratio of the earned profit = Ratio of the equivalent capitiae of Alka and Priti

$$= 45000 \times 12 : 52000 \times 4$$

$$= 45 \times 3 : 52$$

$$= 135 : 52$$

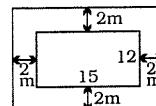
$$\text{Sum of ratios} = 135 + 52 = 187$$

\therefore Priti's share

$$= \text{₹} \left(\frac{52}{187} \times 56165 \right) = \text{₹} 15618.07$$

5. (A) Given that

$$\text{Area of outer rectangle} = 19 \times 16 = 304 \text{ m}^2$$



$$\text{Area of inner rectangle} = 15 \times 12 = 180 \text{ m}^2$$

$$\therefore \text{Required area} = (304 - 180) = 124 \text{ m}^2$$

6. (B) Required total score of the team

$$= 84 \times 8 - 92 + 85 = 665$$

7. (B) $\text{SI} = \frac{15000 \times 9 \times 2}{100} = \text{₹} 2700$

$$\text{CI} = 12000 \left[\left(1 + \frac{8}{100} \right)^2 - 1 \right]$$

$$= 12000 \left[\left(\frac{27}{25} \right)^2 - 1 \right]$$

$$= 12000 \left[\frac{729 - 625}{625} \right]$$

$$= 12000 \times \frac{104}{625} = \text{₹} 1996.8$$

\therefore Total interest earned

$$= \text{₹} (2700 + 1996.8) = \text{₹} 4696.8$$

8. (C) Total marked Price of article

$$= 25 \times 45 = \text{₹} 1125$$

Selling Price (Giving 10% discount)

$$= \frac{90}{100} \text{ of } 1125 = \text{₹} 1012.5$$

$$\text{CP} = \frac{1012.50}{150} \times 100 = \text{₹} 675$$

Now the selling price is ₹1125 then profit

$$= 1125 - 675 = \text{₹} 450$$

$$\% \text{ profit} = \frac{450}{675} \times 100 = 66 \frac{2}{3} \%$$

9. (B) Time taken in walking one way + riding other way

$$= 6 \text{ hours } 35 \text{ minutes} \quad \dots \text{(i)}$$

Time taken in riding both ways

$$= 4 \text{ hours } 35 \text{ minutes} \quad \dots \text{(ii)}$$

By equation (i) $\times 2$ - (ii),

$$2 \times \text{Time taken in walking one way}$$

$$= 13 \text{ hours } 10 \text{ minutes} - 4 \text{ hours } 35 \text{ minutes}$$

$$= 8 \text{ hours } 35 \text{ minutes}$$

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10. (B) Number of balls = $6 + 5 + 8 = 19$
 Exhaustive number of cases = Ways of selecting 4 balls out of 19
 $= {}^{19}C_4 = \frac{19 \times 18 \times 17 \times 16}{1 \times 2 \times 3 \times 4} = 3876$
 Favourable number of cases = Selecting 4 red balls or any two green balls out of the four = ${}^6C_4 + {}^5C_2 \times {}^{14}C_2$
 $= \frac{6 \times 5 \times 4 \times 3}{1 \times 2 \times 3 \times 4} + \frac{5 \times 4}{2} \times \frac{14 \times 13}{2}$
 $= 15 + 910 = 925$
 \therefore Required probability = $\frac{925}{3876}$
11. (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 $4!$ ways.
 \therefore Total number of arrangements
 $= 8! \times 4! = 967680$
 $[n! = 1.2.3.4 \dots (n-1) (n)]$
12. (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
13. (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
14. (A) Largest side of the right angle triangle
 $= \sqrt{6^2 + 8^2} = 10$ cm
 Side of square = $10 \times 3 = 30$ cm
 \therefore Diagonal of the square = $30\sqrt{2}$ cm
15. (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 units
 $= 2240 - 907 = 1333$
 Required percentage
 $= \frac{1333}{3300} \times 100 \approx 40\%$
16. (C) If the number of ₹ 2 coins be x , then number of ₹ 5 coins = $x - 5$
 $\therefore 2x + 5(x - 5) = 50 - 26$
 $\Rightarrow 2x + 5x - 25 = 24$
 $\Rightarrow 7x = 24 + 25 = 49$
 $\Rightarrow x = \frac{49}{7} = 7$
17. (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 = $\frac{1}{x}$
 $\text{Profit per cent} = \frac{\frac{1}{x} - \frac{1}{20}}{\frac{1}{20}} = \frac{25}{100}$
 $\Rightarrow \frac{20 - x}{x} = \frac{1}{4}$
 $\Rightarrow 80 - 4x = x$
 $\Rightarrow 5x = 80$
 $\Rightarrow x = 16$
18. (A) Total runs in the first 10 overs
 $= 10 \times 3.2 = 32$
 Runs rate in the remaining 40 overs
 $= \frac{282 - 32}{40} = \frac{250}{40} = 6.25$
19. (A) Actual weight of 75 girls
 $= \frac{75 \times 47 - 20}{75} = 46.73$ kg

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20. (A) ∵ 12 men can complete the work in 36 days.
 $\therefore 12 \times 36$ men can complete the work in 1 day.
 Again,
 $\therefore 18$ women can complete the work in 60 days.
 $\therefore 18 \times 60$ 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
 $= (4 \times 5 + 20)$ women = 40 women
 $\therefore 18$ women complete the work in 60 days.
 $\therefore 40$ women's 20 days' work = $\frac{40 \times 20}{18 \times 60} = \frac{20}{27}$
 \therefore Remaining work = $1 - \frac{20}{27} = \frac{7}{27}$
 $\therefore 18 \times 60$ women do 1 work in 1 day.
 $\therefore 1$ woman does = $\frac{1}{18 \times 60}$ Work in 1 day
 $\therefore 1$ woman does in 4 days
 $= \frac{4}{18 \times 60} = \frac{1}{18 \times 15}$ Work
 $\therefore \frac{1}{18 \times 15}$ work is done in 4 days by 1 woman
 $\therefore \frac{7}{27}$ work is done in 4 days by
 $= \frac{18 \times 15 \times 7}{27} = 70$ women
21. (B) Let the length of the piece be x m
 Cost of price = ₹ 35
 Then, price per metre = ₹ $\frac{35}{x}$
 $\therefore (x + 4) \left(\frac{35}{x} - 1 \right) = 35 \Rightarrow x = 10$ m
22. (B) Using Alligation Method,
- | | |
|----------------|-----------------|
| Sugar I | Sugar II |
| 5.75 | 4.50 |
- 
- $5.50 - 4.50 = 1.00$
 $i.e., 4 : 1$
 Hence, the required quantity of Sugar I
 $= \frac{75}{1} \times 4 = 300$ kg

23. (C) According to question,
- $$\frac{467}{0.467} = \frac{46.7}{x}$$
- $$\Rightarrow \frac{467 \times 1000}{467} = \frac{467}{10 \times x}$$
- $$\Rightarrow x = \frac{467}{10000}$$
- $$\Rightarrow x = 0.0467$$
24. (B) $8x \times 8y = 8 \times 168$
 $\Rightarrow xy = 21 = (3 \times 7)$
 \therefore The numbers are 24 and 56

$$\therefore \text{Required sum} = \frac{1}{24} + \frac{1}{56}$$

$$= \frac{7+3}{168} = \frac{5}{84}$$

25. (D) $1802 \div 9$, remainder = 2
 $1804 \div 9$, remainder = 4
 $1806 \div 9$, remainder = 6
 and, $808 \div 9$, remainder = 8

$$\text{now, } \frac{2 \times 4 \times 6 \times 8}{9} = \frac{384}{9}$$

So, required remainder = 6

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

27. (D) जिस प्रकार,

$$F \xrightarrow{\text{विपरीत}} U$$

उसी प्रकार,

$$D \xrightarrow{\text{विपरीत}} W$$

28. (C) $60 \times 2.5 = 150$

$46 \times 2.5 = 115$

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

30. (D)

$B \xleftarrow{\text{विपरीत}} Y$	$G \xrightarrow{\text{विपरीत}}$
$+5$	

$K \xleftarrow{\text{विपरीत}} P$	$P \xrightarrow{\text{विपरीत}}$
$+5$	

$H \xleftarrow{\text{विपरीत}} S$	$M \xrightarrow{\text{विपरीत}}$
$+5$	

$A \xleftarrow{\text{विपरीत}} Z$	$E \xrightarrow{\text{विपरीत}}$
$+4$	

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31. (D) रोने के अलावा, अन्य सभी भावनात्मक स्थिति है।
32. (D) $(123, 36) \Rightarrow (1 + 2 + 3)^2 = 36$
 $(243, 81) \Rightarrow (2 + 4 + 3)^2 = 81$
 $(768, 441) \Rightarrow (7 + 6 + 8)^2 = 441$
 $(622, 144) \Rightarrow (6 + 2 + 2)^2 = 100 \neq 144$
33. (D) $8 \times 4 - 8 = 24$
 $7 \times 5 - 7 = 28$
 $9 \times 6 - 9 = 45$
34. (A)
- | | | |
|---|-----|-------------------------|
| B | C | Y |
| ↓ | ↓ | ↓ |
| 2 | + 3 | $\Downarrow (5)^2 = 25$ |
-
- | | | |
|---|-----|------------------------|
| A | B | I |
| ↓ | ↓ | ↓ |
| 1 | + 2 | $\Downarrow (3)^2 = 9$ |
-
- | | | |
|---|-----|-------------------------|
| B | B | P |
| ↓ | ↓ | ↓ |
| 2 | + 2 | $\Downarrow (4)^2 = 16$ |
35. (B) $7, \frac{14}{\times 2}, \frac{56}{\times 4}, \frac{448}{\times 8}, \frac{7168}{\times 16}$
36. (D) $256 \div 64 \times 41 - 76 = 88$
 $\Rightarrow 4 \times 41 - 76 = 88$
 $\Rightarrow 164 - 76 = 88$
 $\Rightarrow 88 = 88$
37. (B) $18 \$ 6 \Rightarrow (18 + 6) \times (18 - 6) = 288$
 $17 \$ 7 \Rightarrow (17 + 7) \times (17 - 7) = 240$
 $27 \$ 23 \Rightarrow (27 + 23) \times (27 - 23) = 200$
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)
-
- ```

graph TD
 A((सीमा)) --> B((दादा))
 A((सीमा)) --> C((बहन))
 C((बहन)) --> D((भाइ))
 C((बहन)) --> E((पिता))
 E((पिता)) --> F((पिता))
 C((बहन)) -.-> G((इकलौता पुत्र))
 G((इकलौता पुत्र)) --> H((पिता))

```
40. (C)  
41. (D)
- 
42. (C)
- 
43. (C)
- 
44. (C)  
45. (D)  
46. (B)  
47. (B)  
48. (C)  
49. (B)  
50. (D)
- I.  $\times$   
II.  $\times$
- अतः, न तो निष्कर्ष I न ही निष्कर्ष II सही है।

**Answer key**

|         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (D)  | 11. (A) | 21. (B) | 31. (D) | 41. (D) | 51. (C) | 61. (B) | 71. (A) |
| 2. (B)  | 12. (B) | 22. (B) | 32. (D) | 42. (C) | 52. (D) | 62. (C) | 72. (B) |
| 3. (B)  | 13. (D) | 23. (C) | 33. (D) | 43. (C) | 53. (B) | 63. (D) | 73. (B) |
| 4. (D)  | 14. (A) | 24. (B) | 34. (A) | 44. (C) | 54. (A) | 64. (B) | 74. (B) |
| 5. (A)  | 15. (B) | 25. (D) | 35. (B) | 45. (D) | 55. (C) | 65. (D) | 75. (A) |
| 6. (B)  | 16. (C) | 26. (D) | 36. (D) | 46. (B) | 56. (B) | 66. (A) |         |
| 7. (B)  | 17. (C) | 27. (D) | 37. (B) | 47. (B) | 57. (D) | 67. (D) |         |
| 8. (C)  | 18. (A) | 28. (C) | 38. (D) | 48. (C) | 58. (A) | 68. (D) |         |
| 9. (B)  | 19. (A) | 29. (A) | 39. (C) | 49. (B) | 59. (A) | 69. (A) |         |
| 10. (B) | 20. (A) | 30. (D) | 40. (C) | 50. (D) | 60. (C) | 70. (D) |         |