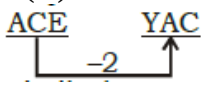
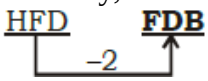
RAILWAY MOCK TEST – 4 (SOLUTION)

1. (D)
As, Screw Driver is used for Screw.
Similarly, **Hammer** is used for Nail.

2. (D)



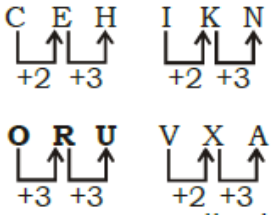
Similarly,



3. (B)
$10^3 = 1000$
Similarly, 17^3 = **4913**

4. (B)
Except **Umpire**, all others are the players of Cricket.

5. (C)

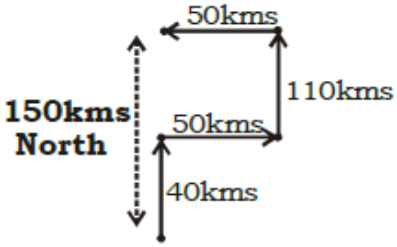


6. (B)
Except **729,** all others are prime numbers
OR
729 is a cubic number

7. (C)
Reciprocal → Repentant → Required → Requirement.

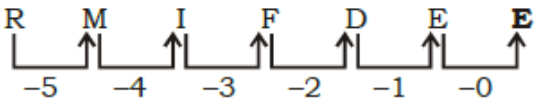
8. (A)
Difference between both dates
= 2 + 30 + 31 + 31 + 30 + 9
= 19 weeks
So, the day on 9th October is **Monday**

9. (B)

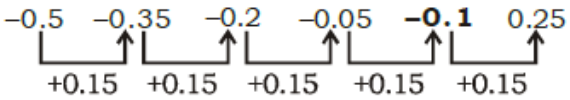


10. (C)
URINE

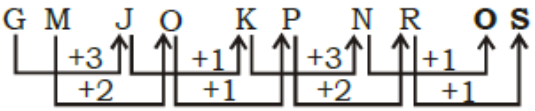
11. (D)



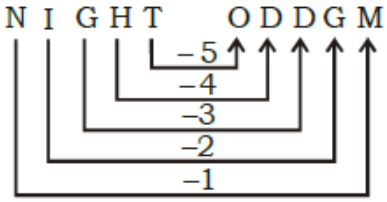
12. (B)

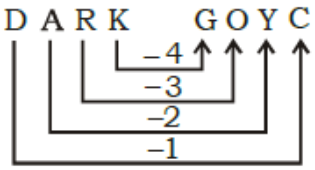


13. (B)

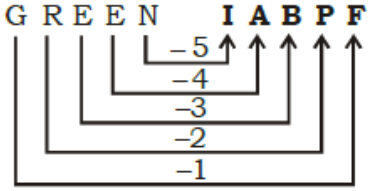


14. (A)





Similarly,



15. (A)
$4 \times 3 - 6 \div 2 + 7 = 8$
Changing the sign, as per given details,
Option A **$4 \times 3 + 6 \div 2 - 7 = 8$**
Option B $4 - 3 + 6 \div 2 - 7 \neq 8$
Option C $4 + 3 - 6 \div 2 \times 7 \neq 8$
Option D $4 \div 3 - 6 \times 2 + 7 \neq 8$

16. (B)
Take the symbol as # = ÷ and % = ×
then, $\frac{3}{4} \times 3 = 6$

$9 \times \frac{4}{3} = 12$

$12 \times \frac{6}{24} = \mathbf{3}$

17. (B)

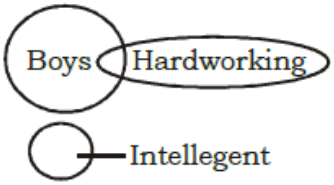
$9 \times 2 \times 8 - 1 = 143$

$7 \times 5 \times 8 - 1 = 279$

$9 \times 7 \times 8 - 1 = \mathbf{503}$

18. (A)

19. (D)



I True

II False

20. (C)

21. (A)

22. (A)

23. (A)

24. (A)

25. (B)

51. (B)

ATQ,

$$\frac{60}{x+y} + \frac{20}{x-y} = 4 \quad \left[\frac{1}{x+y} = u, \frac{1}{x-y} = v\right]$$

$\Rightarrow 60u + 20v = 4$-------(i) and,

$$\frac{40}{x+y} + \frac{40}{x-y} = 6$$

$\Rightarrow 40u + 40v = 6$ -------(ii)

from equation (i) and (ii),

$u = \frac{1}{40}$ and $v = \frac{1}{8}$

then $x + y = 40$ -----(iii) and

$x - y = 8$ ------(iv),

from equation (iii) and (iv),

$y = 16$ and $x = 24$

Hence, the speed of stream = **16 kmph**

52. (B)

ATQ,

New selling price = $\frac{3800}{76} \times 130$ = Rs.**6500**

53. (C)

ATQ,

Required distance = $2 \times \frac{22}{7} \times 28 \times 10$

= **1760 cm**

54. (B)

ATQ,

Total surface area

$$= 2 \times \frac{22}{7} \times \frac{14}{2} \times \frac{14}{2} + 2 \times \frac{22}{7} \times \frac{14}{2} \times 15$$

= 308 + 660 = **968cm^2**

55. (C)

ATQ,

Required discount = $56 + 14 - \frac{56 \times 14}{100}$

= **62.16%**

56. (A)

ATQ,

$x = 2 - y$

$x^2 = 3 + y^2$

$\Rightarrow (2 - y)^2 = 3 + y^2$

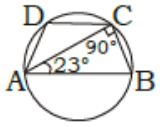
$\Rightarrow 4 + y^2 - 4y = 3 + y^2$

$\Rightarrow y = \frac{1}{4} \Rightarrow x = 2 - \frac{1}{4} = \frac{7}{4}$

Hence $xy = \frac{1}{4} \times \frac{7}{4} = \mathbf{\frac{7}{16}}$

57. (D)

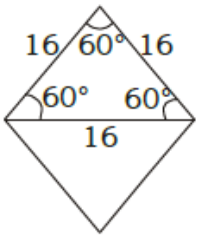
ATQ,



$\angle$ ADC = 180° – (90° – 23°) = **113°**

58. (B)

ATQ,



then, $2 \times \frac{\sqrt{3}}{4} \times 16 \times 16 = \frac{d_1 \times 16}{2}$

$\Rightarrow d_1 = 16\sqrt{3}$

Hence, Area of equilateral triangle

$= \frac{\sqrt{3}}{4} \times 16\sqrt{3} \times 16\sqrt{3} = \mathbf{192\sqrt{3}}$ **cm²**

59. (B)

ATQ,

$$236.544 = P \times \left(\frac{8}{100}\right)^2 \left(\frac{308}{100}\right)$$

$P = 12000$

Hence, Required amount = Rs.**12000**

60. (C)

ATQ,

$$\frac{\cos^2 A - \cos^2 B + \sin^2 A - \sin^2 B}{(\sin A - \sin B)(\cos A - \cos B)}$$

$$= \frac{(\cos^2 A + \sin^2 A) - (\cos^2 B + \sin^2 B)}{(\sin A - \sin B)(\cos A - \cos B)}$$

$$= \frac{1-1}{(\sin A - \sin B)(\cos A - \cos B)}$$

$= 0$

61. (A)

ATQ,

$$\frac{1}{x^{(a-b)}+1} + \frac{1}{x^{(b-a)}+1}$$

$$= \frac{1}{x^{(a-b)}+1} + \frac{1}{1+\frac{1}{x^{a-b}}} = \frac{x^{a-b}+1}{x^{a-b}+1} = \mathbf{1}$$

62. (B)

ATQ,

$x = 10 + 2\sqrt{21}$

$= (7)^2 + (\sqrt{3})^2 + 2\sqrt{7} \times \sqrt{3}$

$= (\sqrt{7} + \sqrt{3})^2$

$\Rightarrow \sqrt{x} = \sqrt{7} + \sqrt{3}$ and

$$\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{7}+\sqrt{3}} = \frac{\sqrt{7}-\sqrt{3}}{4}$$

Then, $\sqrt{x} + \frac{1}{\sqrt{x}} = \sqrt{7} + \sqrt{3} + \frac{\sqrt{7}-\sqrt{3}}{4}$

$$= \frac{\mathbf{5\sqrt{7} + 3\sqrt{3}}}{\mathbf{4}}$$

63. (A)

ATQ,

$$\frac{1+x}{\sqrt{x}+\frac{1}{\sqrt{x}}} - \frac{\sqrt{x}+\frac{1}{\sqrt{x}}}{1+x} + \frac{1}{\sqrt{x}}$$

$$= \frac{(1+x)\sqrt{x}}{x+1} - \frac{x+1}{(x+1)\sqrt{x}} + \frac{1}{\sqrt{x}}$$

$$= \sqrt{x} - \frac{1}{\sqrt{x}} + \frac{1}{\sqrt{x}} = \sqrt{\boldsymbol{x}}$$

64. (B)

ATQ,

$$\frac{p}{q} = \frac{a+9}{a-9}$$

Apply componando and dividendo rule,

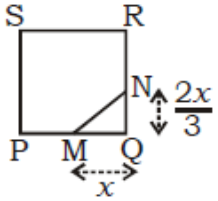
$$\frac{p+q}{P-q} = \frac{a}{9}$$

Square on both sides,

$$\Rightarrow \left(\frac{p+q}{p-q}\right)^2 \frac{\mathbf{a^2}}{\mathbf{81}}$$

65. (D)

ATQ,



Let MQ = x

then, NQ = $\frac{2x}{3}$

then, area of Δ MQN = $\frac{1}{2} \times x \times \frac{2x}{3} = 108$

$\Rightarrow x^2 = 324 \quad \Rightarrow x = 18$

Hence, length of PR (diagonal) $= 2 \times 18 \times \sqrt{2}$

$= \mathbf{36\sqrt{2}}$ **cm**

66. (B)

ATQ,

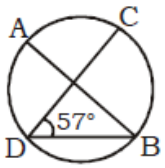
radius of circle (AO) = $\sqrt{35^2 + 12^2}$ = 37 cm

Then, ON = $\sqrt{(radius)^2 - (CN)^2}$

$\Rightarrow$ ON = $\sqrt{(35)^2 - (35)^2}$ = **12 cm**

67. (C)

ATQ,



$\angle$ ADB = 90° (angle made in half circle)
then, $\angle$ ADC = 90° – 57° = 33°
but $\angle$ ADC = $\angle$ ABC (angle made by same chord)
$\Rightarrow$ $\angle$ABC = **33°**
68. (B)
ATQ,
Let AB = x and BC = y
then, area of BCM = $\frac{1}{2} \times y \times \frac{2x}{3} = \frac{xy}{3}$
and area of CDN = $\frac{1}{2} \times \frac{2y}{3} \times x = \frac{xy}{3}$
then, area of ABCD = $x\,y$
Now, $xy - \frac{1}{3}xy - \frac{1}{3}xy = 17$
$\Rightarrow \frac{1}{3}xy = 17$
$\Rightarrow xy = 51$
Hence, area of ABCD = **51 cm^2**
69. (B)
ATQ,
(1 – sin A cos A) (sin A + cos A)
= (sin^2 A + cos^2 A – sin A cos A) (sin A + cos A)
= **(sin^3 A + cos^3 A)**
70. (C)
ATQ,

$$\sqrt{\frac{1-\sin A}{1+\sin A}} = \sqrt{\frac{1-\sin A}{1+\sin A} \times \frac{1-\sin A}{1-\sin A}}$$

$$= \sqrt{\frac{(1-\sin A)^2}{1-\sin^2 A}} = \frac{1-\sin A}{\cos A} = \textbf{sec A – tan A}$$

71. (D)
ATQ,

$$\sqrt{\frac{1}{\sin^2 A} + \frac{1}{\cos^2 A}} = \sqrt{\frac{\sin^2 A + \cos^2 A}{\sin^2 A \cos^2 A}}$$

$$= \frac{1}{\sin A \cos A} = \text{cosec A sec A}$$

$$= \sqrt{1+\tan^2 A}\ \sqrt{1+\cot^2 A}$$

$$= \sqrt{1+\tan^2 A}\ \sqrt{1+\frac{1}{\tan^2 A}}$$

$$= \sqrt{1+\tan^2 A}\ \frac{\sqrt{1+\tan^2 A}}{\tan A}$$

$$= \frac{1+\tan^2 A}{\tan A} = \textit{cot A + tan A}$$

72. (B)
ATQ,
Required average

$$= \frac{152+35+14+138+34+40+35+150+63+68+112+73+196}{13} = \textbf{85}$$

73. (C)
ATQ,
Option A = $\frac{(138-34)}{138} \times 100 = 75.36\%$
Option B = $\frac{(150-63)}{150} \times 100 = 58\%$
Option C = $\frac{(138-14)}{138} \times 100 = \textbf{90\%}$
Option D = $\frac{196-73}{196} \times 100 = 62.75\%$
74. (B)
See the solution of question no 72.
75. (A) Required amount

$$= (152+35+14+138+34+40+35+150+63+68+112+73+196) \times 56$$

$$= 1110 \times 50 = \textbf{₹ 55500}$$

RAILWAY MOCK TEST – 4 (ANSWER)

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