

RAILWAY MOCK TEST – 19 (SOLUTION)

1. (B) "Five Point Someone" is written by Chetan Bhagat and "Swami and Friends" is written by R.K. Narayan.

2. (C) $\underline{\text{BFJ}} : \underline{\text{KOS}} :: \underline{\text{KOS}} : \underline{\text{TXB}}$
 $\xrightarrow{+9} \quad \xrightarrow{+9}$

3. (C) As, $14 \Rightarrow 14 \times 2 + 2 = 30$

Similarly,

$16 \Rightarrow 16 \times 2 + 2 = 34$

4. (D) $\underline{\text{Z}} \underline{\text{B}} \underline{\text{D}} \quad \underline{\text{J}} \underline{\text{L}} \underline{\text{N}} \quad \underline{\text{Q}} \underline{\text{S}} \underline{\text{U}} \quad \underline{\text{N}} \underline{\text{O}} \underline{\text{P}}$
 $\boxed{+2} \uparrow \boxed{+2} \uparrow \quad \boxed{+2} \uparrow \boxed{+2} \uparrow \quad \boxed{+2} \uparrow \boxed{+2} \uparrow \quad \boxed{+1} \uparrow \boxed{+1} \uparrow$

5. (A) Except Body, others are parts of body.

6. (A) $1356 \Rightarrow 1 + 3 + 5 + 6 \neq 25$

$5497 \Rightarrow 5 + 4 + 9 + 7 = 25$

$7864 \Rightarrow 8 + 7 + 6 + 4 = 25$

$9943 \Rightarrow 9 + 9 + 4 + 3 = 25$

7. (D) Pemmafrost \rightarrow Permanence \rightarrow Permanent \rightarrow Permeability.

8. (A) As, $\begin{matrix} \text{D} & \text{I} & \text{S} & \text{O} & \text{R} & \text{D} & \text{E} & \text{R} \\ & \swarrow & \downarrow & \swarrow & \downarrow & \swarrow & \downarrow & \swarrow \\ \text{O} & \text{S} & \text{I} & \text{D} & \text{R} & \text{E} & \text{D} & \text{R} \end{matrix}$

Similarly, $\begin{matrix} \text{P} & \text{R} & \text{A} & \text{C} & \text{T} & \text{I} & \text{C} & \text{E} \\ & \swarrow & \downarrow & \swarrow & \downarrow & \swarrow & \downarrow & \swarrow \\ \text{C} & \text{A} & \text{R} & \text{P} & \text{E} & \text{C} & \text{I} & \text{T} \end{matrix}$

9. (B) $14 * 6 * 3 * 5 * 4 * 20$

From option (B),

$14 + 6 \div 3 \times 5 - 4 = 20$

$\Rightarrow 14 + 2 \times 5 - 4 = 20$

$\Rightarrow 14 + 10 - 4 = 20$

$\Rightarrow 20 = 20$

\therefore Option (B) is the right answer.

10. (C) Mohit > Kamal > Amit > Ramesh > **Rohit**
 Hence, Rohit is the shortest.

11. (B) $\underline{\text{DJO}}, \underline{\text{EKP}}, \underline{\text{FLQ}}, \underline{\text{GMR}}, \underline{\text{HNS}}$
 $\xrightarrow{+1} \quad \xrightarrow{+1} \quad \xrightarrow{+1} \quad \xrightarrow{+1}$

12. (C) $\underline{\text{PR}}, \underline{\text{VX}}, \underline{\text{BD}}, \underline{\text{HJ}}$
 $\xrightarrow{+6} \quad \xrightarrow{+6} \quad \xrightarrow{+6}$

13. (C) $4, 13, 40, 121, 364$
 $\boxed{\times 3+1} \uparrow \quad \boxed{\times 3+1} \uparrow \quad \boxed{\times 3+1} \uparrow \quad \boxed{\times 3+1} \uparrow$

14. (C) Neither I nor II follow.

15. (D) **Prem** > Raju > Sunder > Hari > Ompal
 Hence, Prem owns the highest share of land.

16. (D) $3^2 + 4^2 = 5^2$
 $12^2 + 5^2 = 13^2$
 $24^2 + 7^2 = 625$
 $= 25^2$

17. (B) $6 \times 7 = 42$
 $8 \times 4 = 32$
 $9 \times 5 = 45$

18. (B) $81 \times 9 + 10 - 6 \div 5$

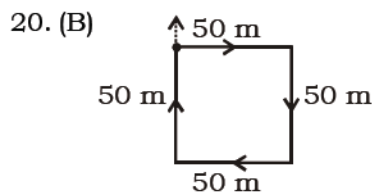
After changing the signs as per the given detail,

$81 \div 9 - 10 \times 6 + 5$

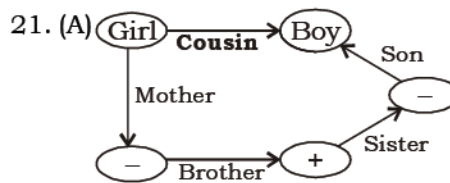
$= 9 - 60 + 5$

$= -46$

19. (D) abc / aabbcc / aaabbb

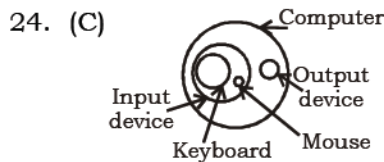


He is present at his original position.



22. (B)

23. (A)



25. (C) $\text{H} \quad \text{A} \quad \text{I} \quad \text{R} \quad \text{Y}$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
03, 33, 57, 78, 99

51. (C) Slant height (L) = $\sqrt{4^2 + 2^2}$
 $= \sqrt{16 + 4} = \sqrt{20} = 2\sqrt{5}$ cm
 Area of Slant surface = $4 \times$ Area of Triangle
 $= 4 \times \frac{1}{2} \times 8 \times 2\sqrt{5}$
 $= 32\sqrt{5}$ cm²
 Total surface area = Area of base + Area of Slant Surface
 $= (8)^2 + 32\sqrt{5}$
 $= 64 + 32\sqrt{5}$
 $= \mathbf{32(2 + \sqrt{5})}$ cm²

52. (C) Let the number be $(10x + y)$
 By reversing, it becomes $(10y + x)$
 ATQ,
 $(10y + x) - (10x + y) = 18$
 $\Rightarrow 9(y - x) = 18 \Rightarrow y - x = 2$
 So, the possible pairs of (x, y) are (1,3), (2, 4), (3,5), (4,6), (5,7), (6,8) and (7,9)
 But we want other than 13.
 Thus, there are **6** possible numbers
 i.e. 24, 35, 46, 57, 68, 79.

53. (B) $1.08, 7.2$ and $0.54 = \frac{108}{100}, \frac{720}{100}, \frac{54}{100}$

$$\text{HCF} = \frac{\text{HCF of Numerator}}{\text{LCM of Denominator}}$$

$$= \frac{\text{HCF}(108, 720, 54)}{\text{LCM}(100, 100, 100)} = \frac{18}{100} = \mathbf{0.18}$$

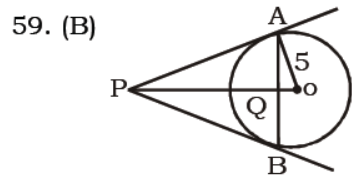
54. (A) Cost Price of 1 ball = $\frac{324}{12} = ₹27$
 S.P of 1 ball = 32.4
 So, Profit = ₹ $(32.4 - 27) = ₹ 5.4$
 \therefore Required profit percentage = $\frac{5.4}{27} \times 100 = \mathbf{20}$

55. (D) Let X pupils in the class.
 Total increase in marks = $x \times \frac{1}{4} = \frac{x}{4}$
 $\therefore \frac{x}{4} = 116 - 88 \Rightarrow x = \mathbf{112}$

56. (C) Let ages of Rama and Gama be $5x$ and $4x$ years. Then, $\frac{5x+3}{4x+3} = \frac{11}{9}$
 $\Rightarrow 9(5x+3) = 11(4x+3)$
 $\Rightarrow 45x - 44x = 33 - 27$
 $\Rightarrow x = 6$
 \therefore Present age of Gama = $4x = 4 \times 6 = \mathbf{24}$ years

57. (B) Let profit when SP ₹80 = ₹x
 Then, profit when SP ₹122 = ₹3x
 ATQ,
 $3x - x = 122 - 80$
 $\Rightarrow 2x = 42$
 $\Rightarrow x = 21$
 So, CP = $80 - 21 = ₹ 59$

58. (A) Area of circle = 1386
 $\Rightarrow \pi r^2 = 1386$
 $\Rightarrow r^2 = \frac{1386 \times 7}{22}$
 $\Rightarrow r = 21$ mm
 Circumference = $2\pi r = 2 \times \frac{22}{7} \times 21 = 132$ mm
 Circumference of circle = Perimeter of equilateral Δ .
 $\Rightarrow 132 = 3 \times \text{side}$
 $\Rightarrow \text{Side} = \frac{132}{3} = 44$
 \therefore Height = $\frac{\sqrt{3}}{2} \times \text{side} = \frac{\sqrt{3}}{2} \times 44 = \mathbf{22\sqrt{3}}$ mm



Let $AB = 2a = 6$ cm
 $\Rightarrow a = 3$ cm
 and, $r = 5$ cm
 We have,

$$\text{PB} = \text{PA} = \frac{ar}{\sqrt{r^2 - a^2}}$$

$$= \frac{3 \times 5}{\sqrt{5^2 - 3^2}} = \frac{15}{4} = \mathbf{3.75}$$
 cm

60. (D) $\angle ABC = 70^\circ$
 $\angle AEB = 75^\circ$
 $\therefore \angle BAE = 180^\circ - (70^\circ + 75^\circ) = 180^\circ - 145^\circ = 35^\circ$
 $\angle BCD + \angle DAB = 180^\circ$ (opp. angles of cyclic quadrilateral ABCD)
 $\Rightarrow \angle BCD + 35^\circ = 180^\circ$
 $\Rightarrow \angle BCD = 180^\circ - 35^\circ = 145^\circ$
 $\therefore \angle DCE = 180^\circ - \angle BCD = 180^\circ - 145^\circ = \mathbf{35^\circ}$

61. (B) Put, $a = 2, b = 2.5$
 $a^3 + b^3 = (2)^3 + (2.5)^3 = 8 + 15.625 = \mathbf{23.625}$

62. (A) $x^2 - \sqrt{2}x = -1$
 $\Rightarrow x(x - \sqrt{2}) = -1$
 $\Rightarrow x - \sqrt{2} = -\frac{1}{x}$
 $\Rightarrow x + \frac{1}{x} = \sqrt{2}$
 $\therefore \frac{x^4 + 1}{x^2} = x^2 + \frac{1}{x^2}$

$$= \left(x + \frac{1}{x}\right)^2 - 2x \times \frac{1}{x}$$

$$= (\sqrt{2})^2 - 2$$

$$= 2 - 2 = \mathbf{0}$$

63. (B) Let the width of rectangle = x cm
 Then, length of rectangle = $(x + 1)$ cm
 \therefore Area of rectangle = $l \times b$
 $\therefore 420 = x(x + 1)$
 $\Rightarrow x^2 + x = 420$
 $\Rightarrow x^2 + x - 420 = 0$
 $\Rightarrow x^2 + 21x - 20x - 420 = 0$
 $\Rightarrow x(x + 21) - 20(x + 21) = 0$
 $\Rightarrow x = -21, 20$
 Width = $x = 20$ cm
 Length = $x + 1 = 20 + 1 = 21$ cm
 \therefore Perimeter = $2(l + b) = 2(20 + 21)$
 $= 2(41) = \mathbf{82 \text{ cm}}$

64. (B) $37.5\% = \frac{3}{8}$

Sum	Amount
8	11
8	11
64	121

C.I. = 57

ATQ,
 121 units = ₹ 2420
 1 unit = ₹ 20
 \therefore Sum = $64 \times 20 = \mathbf{₹1280}$

65. (A) A.T.Q,

$$\text{Required Time} = \frac{150 + 180}{(51 - 42) \times \frac{5}{18}}$$

$$= \frac{330}{9 \times \frac{5}{18}} = \frac{330 \times 2}{5}$$

$$= 132 \text{ sec.}$$

$$= \mathbf{2 \text{ minutes } 12 \text{ sec.}}$$

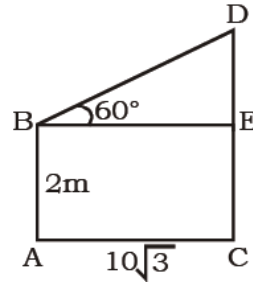
66. (D) $\sin^2 6^\circ + \sin^2 12^\circ + \dots + \sin^2 84^\circ + \sin^2 90^\circ$
 $= \sin^2 6^\circ + \sin^2 12^\circ + \dots + \sin^2 84^\circ + 1$
 $[\therefore \sin 90^\circ = 1]$

No. of terms (n) = $\left(\frac{84 - 6}{6}\right) + 1 = 14$

Value of 14 terms = $\frac{14}{2} = 7$

$[\therefore \sin^2 6^\circ + \sin^2 84^\circ = 1]$
 \therefore Total value = $7 + 1 = \mathbf{8}$

67. (B)



Let AB be the observer and CD be the tower.

$BE = AC = 10\sqrt{3} \text{ m}$

In $\triangle BDE$,

$$\frac{DE}{BE} = \tan 60^\circ = \sqrt{3}$$

$\Rightarrow DE = BE \times \sqrt{3} = 10\sqrt{3} \times \sqrt{3} = 30 \text{ m}$

$\therefore CD = CE + DE = (2 + 30) = \mathbf{32 \text{ m}}$

68. (A) Work done by A in 30 days = 75%

\therefore Work done by A in 1 day = $\frac{75}{30} = 2.5\%$

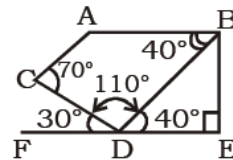
Work done by A and B in 2 days
 $= (100 - 75)\% = 25\%$

\therefore In these 2 days, work done by A = $2.5 \times 2 = 5\%$
 So, remaining work ($25 - 5 = 20\%$) will be done by B in 2 days

\therefore B does 20% work in 2 days.

\therefore It will complete 100% work in $\mathbf{10 \text{ days}}$.

69. (B)



Given, $AB \parallel DE$

$AC \parallel BD$

$BE \perp DE$

From line Properties,

$70^\circ + \angle BDC = 180^\circ$

$\Rightarrow \angle BDC = 180^\circ - 70^\circ = 110^\circ$

Now, $\angle BDE = 180^\circ - (30^\circ + 110^\circ) = 40^\circ$

$\angle BDE = \angle ABD = 40^\circ$ [Alternate angles]

∴ In quadrilateral, sum of all angles = 360°

So, $\angle A + 40^\circ + 70^\circ + 110^\circ = 360^\circ$

$\Rightarrow \angle A = 360^\circ - 220^\circ = 140^\circ$

70. (C) $(\sec A + \tan A)(1 - \sin A)$

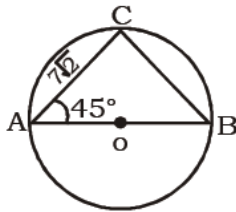
$$= \left(\frac{1}{\cos A} + \frac{\sin A}{\cos A} \right) (1 - \sin A)$$

$$= \left(\frac{1 + \sin A}{\cos A} \right) (1 - \sin A)$$

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

$$= \mathbf{\cos A}$$

71. (A)



ΔABC is a right angled triangle at C.

$\angle CAB = 45^\circ$

∴ $\angle ABC = 45^\circ$

So, $AC = BC = 7\sqrt{2}$ cm

$$\begin{aligned} \therefore AB &= 7\sqrt{2} \times \sqrt{2} \\ &= 14 \text{ cm} \end{aligned}$$

AB (diameter) = 14 cm

∴ Radius (AO) = 7 cm

$$\text{Area of circle} = \pi r^2 = \frac{22}{7} \times 7 \times 7 = \mathbf{154 \text{ cm}^2}$$

72. (B) ATQ,

We have,

$$\frac{\text{Area of } \Delta PQR}{\text{Area of } \Delta LMN} = \frac{(RP)^2}{(NL)^2}$$

$$\Rightarrow \frac{81}{324} = \frac{RP^2}{(35)^2}$$

$$\therefore RP = \frac{\sqrt{81}}{\sqrt{324}} \times 35 = \mathbf{17.5 \text{ cm}}$$

73. (B) Population of A = $\frac{60^\circ}{360^\circ} = \frac{1}{6}$ part

Population of F = $\frac{11.11}{100} = \frac{1}{9}$ part

Population of A and F together

$$= \frac{1}{6} + \frac{1}{9} = \frac{15}{54} \text{ Part}$$

∴ Total population of A and F

$$= \frac{15}{54} \times 1134 = \mathbf{315}$$

74. (A) ∴ $25\% = \frac{1}{4} \times 360^\circ = 90^\circ$

Population of (A + D + E) = $(60^\circ + 90^\circ + 30^\circ)$
= 180°

Population of (B + C + F) = $360^\circ - 180^\circ$
= 180°

∴ Required Ratio of Population = $180^\circ : 180^\circ$
= $1 : 1$

75. (D) ∴ $\frac{11.11}{100} = \frac{1}{9}$ part

Required number of children =

$$= \frac{1}{9} \times 1134 = \mathbf{126}$$

RAILWAY MOCK TEST – 19 (ANSWER)

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