



24. (D)  $35 - 4 + 25 \div 5 \times 5 = 56$

$35 - 4 + 5 \times 5 = 56$

$35 - 4 + 25 = 56$

$35 + 25 - 4 = 56$

$60 - 4 = 56$

$56 = 56$  (Correct)

25. (C) G = 02, 10, **23**, 31, 44

I = 56, 65, 79, 88, **97**

R = 59, 68, **77**, 86, 95

L = 03, **11**, 24, 32, 40

26. (A) ATQ,

$$\text{Depth of water} = \frac{\frac{2}{3}\pi r_1^3}{\pi r_2^2}$$

$$= \frac{2 \times \left(\frac{13.5}{2}\right)^3}{3 \times \left(\frac{9}{2}\right)^2}$$

$$= \frac{2 \times 13.5 \times 13.5 \times 13.5 \times 2 \times 2}{3 \times 2 \times 2 \times 9 \times 9}$$

$$= 10\frac{1}{8} \text{ cm}$$

27. (C) Area of base = 21 sq. cm

Area of faces = 30 sq. cm

So, length = HCF of (area of base & area of faces)

$$= 3 \text{ cm}$$

$$\text{So, volume of cuboidal box} = \frac{21 \times 30}{3}$$

$$= 210 \text{ cm}^3$$

28. (D)  $\frac{a^{1/2} + a^{-1/2}}{1-a} + \frac{1-a^{-1/2}}{1+\sqrt{a}}$

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

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

$$= \frac{2\sqrt{a}(1+\sqrt{a})}{\sqrt{a}(1+\sqrt{a})(1-a)} = \frac{2}{1-a}$$

29. (C)  $\frac{5a+3b}{4a+7b} = \frac{3}{4}$

$$20a+12b = 12a+21b$$

$$8a = 9b$$

$$a : b = 9 : 8$$

30. (A)  $\frac{x+\sqrt{x^2-1}}{x-\sqrt{x^2-1}} + \frac{x-\sqrt{x^2-1}}{x+\sqrt{x^2-1}} = 14$

$$\frac{x^2+(x^2-1)+2x\sqrt{x^2-1}+x^2+(x^2-1)-2x\sqrt{x^2-1}}{x^2-x^2-1}$$

$$\frac{2(2x^2-1)}{1} = 14$$

$$2x^2 = 8$$

$$x = \pm 2$$

31. (A) Average runs in 15 matches = 33

Average runs in the first 10

matches = 45

So, average run in the last 5 matches

$$= \frac{33 \times 15 - 45 \times 10}{5}$$

$$= 9$$

32. (A)

33. (B) Present population of the City

$$= 4840000$$

ATQ,

2 years ago, the population of the City

$$= 4840000 \times \left(\frac{100}{110}\right)^2$$

$$= 4000000$$

34. (D)  $P_1(\uparrow) \begin{array}{l} 20 \\ \searrow 60 \\ 30 \end{array} \begin{array}{l} 3 \\ \\ 2 \\ \downarrow 1 \end{array}$

So, the time taken by the leak to empty the full tank

$$= \frac{60}{1} = 60 \text{ minutes}$$

35. (B) ATQ,

Distance covered in half minute

$$= 84 \times 2 \times \frac{22}{7} \times \frac{3}{4}$$

$$= 396 \text{ m}$$

$$\text{So, the speed of the bus} = \frac{396 \times 2 \times 60}{1000}$$

$$= 47.52 \text{ km/hr.}$$

36. (B) ATQ,

$$\text{Electric Bill} = \frac{54 \times 100}{18} = ₹ 360$$

37. (C) Selling price of the machine = ₹ 6480

ATQ,

Marked price of the machine

$$= ₹ \left( 6480 \times \frac{100}{80} \times \frac{100}{90} \times \frac{100}{90} \right)$$

$$= ₹ 10000$$

38. (A) Cost price of the article = ₹ 937.50

So, marked price of the article

$$= ₹ \left( 937.50 \times \frac{100}{75} \times \frac{125}{100} \right)$$

$$= ₹ 1562.50$$

39. (B) C.I for 2 years of 4% = ₹ 102

Let principal = ₹ P

$$P + 102 = P \left( 1 + \frac{4}{100} \right)^2$$

$$P + 102 = P + \frac{51}{625} P$$

$$P = ₹ 1250$$

$$\text{So, S.I.} = \frac{1250 \times 2 \times 4}{100}$$

$$= ₹ 100$$

40. (C)  $P_1(\uparrow)$  17  $\xrightarrow{\quad}$  20  
 $P_1 + P_2$  20  $\xrightarrow{340}$   $\frac{17}{3}$

So, the time taken by leakage to empty the tank

$$= \frac{340}{3} = 113 \frac{1}{3} \text{ hr.}$$

41. (B) Distance between Chennai and Mumbai

$$= 560 \text{ km}$$

Train A from Mumbai to Chennai starts at 6 a.m. at a speed of 40 km/hr, so the distance covered till 7 a.m. = 40 km

Train B from Chennai to Mumbai starts at 7 a.m. at a speed = 60 km/hr

So, trains will cross each other in

$$= \frac{560 - 40}{40 + 60} = 5 \frac{1}{5} \text{ hrs.}$$

Distance from Mumbai when they cross each other

$$= 40 + \frac{26}{5} \times 40$$

$$= 40 + 208$$

$$= 248 \text{ km}$$

42. (B) ATQ,

$$\text{Inner radius of pipe} = \sqrt{\frac{440}{10 \times \frac{22}{7} \times 7}}$$

$$= \sqrt{2} \text{ m}$$

43. (C)  $(a^2 - b^2) \sin \theta + 2ab \cos \theta = a^2 + b^2$

dividing by  $(a^2 + b^2)$

$$\frac{(a^2 - b^2)}{(a^2 + b^2)} \sin \theta + \frac{2ab}{(a^2 + b^2)} \cos \theta = 1 \quad \dots(i)$$

As we know,  $\sin^2 \theta + \cos^2 \theta = 1$

$$\Rightarrow \sin \theta \cdot \sin \theta + \cos \theta \cdot \cos \theta = 1 \quad \dots(ii)$$

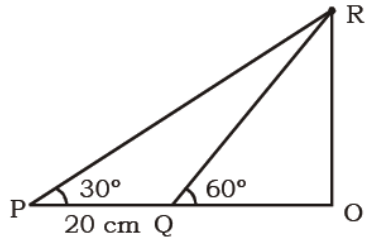
On comparing (i) and (ii)

$$\sin \theta = \frac{a^2 - b^2}{a^2 + b^2}, \quad \cos \theta = \frac{2ab}{a^2 + b^2}$$

$$\therefore \tan \theta = \frac{\sin \theta}{\cos \theta}$$

$$\frac{a^2 - b^2}{(a^2 + b^2)} = \left( \frac{a^2 - b^2}{2ab} \right) \frac{2ab}{(a^2 + b^2)}$$

45. (D)



ATQ,

$$PQ = 20 \text{ m}$$

In  $\Delta ORQ$

$$\frac{OR}{OQ} = \tan 60^\circ$$

$$OR = \sqrt{3} \times OQ$$

$$OQ = \frac{OR}{\sqrt{3}}$$

In  $\Delta RPO$

$$\frac{OR}{OP} = \tan 30^\circ$$

$$OR = (OQ + 20) \times \frac{1}{\sqrt{3}}$$

$$OR = \left( \frac{OR}{\sqrt{3}} + 20 \right) \times \frac{1}{\sqrt{3}}$$

$$\sqrt{3} OR - \frac{OR}{\sqrt{3}} = 20$$

$$OR \left( \frac{3-1}{\sqrt{3}} \right) = 20$$

$$OR = 10\sqrt{3} \text{ m}$$

46. (B)

$$\Delta ABC \cong \Delta FDE$$

$$AB = FD = 5 \text{ cm}$$

$$\angle A = 80^\circ$$

$$\angle B = 40^\circ$$

$$\angle C = \angle E = 180^\circ - 80^\circ - 40^\circ$$

$$= 60^\circ$$

47. (C)

48. (C) Saving of family

$$= \frac{12.5}{100} \times 100000 = 12500$$

49. (C) Food

50. (A) Housing

## SSC PRE MOCK TEST – 36 (ANSWER)

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