

SSC PRE MOCK TEST – 12 (SOLUTION)

1. (A)

Dogs bark and goats bleat.

2. (C)

As, PALAM

$$16 + 1 + 12 + 1 + 13 = 43$$

Similarly,

$$\begin{aligned} \text{STRUCTURE} &= 19 + 20 + 18 + 21 + 3 + 20 \\ &\quad + 21 + 18 + 5 \\ &= \mathbf{145} \end{aligned}$$

3. (D)

As, $\frac{(8)^3}{2} = 256$

Similarly, $\frac{(12)^3}{2} = \mathbf{864}$

4. (B)

As, PEN = 16 + 5 + 14 $\Rightarrow (35)^2 = 1225$

Similarly,

$$\text{SOLUTION} = 19 + 15 + 12 + 21 + 20 + 9 + 15 + 14$$

$$\Rightarrow (125)^2 = \mathbf{15625}$$

5. (A)

Except **River**, all contain stagnant water.

6. (D)

Except **493**, all are multiple of 19.

7. (D)

$$1^3 - 1 = 0$$

$$3^3 - 1 = 26$$

$$8^3 - 1 = 511$$

$$7^3 + 1 = \mathbf{344}$$

8. (C)

$$\begin{aligned} \text{The day after 1335 days} &= \frac{1335}{7} \\ &= 190 \text{ Week} + 5 \text{ Days} \\ \therefore \text{The Required Day} &= \text{Monday} + 5 \text{ Days} \\ &= \mathbf{\text{Saturday}} \end{aligned}$$

9. (B)

'Pi' means 'good' [From sentence I and II]

'ni' means 'These' [From sentence I and II]

and

Required word = 'co' means 'are'

10. (A)

Satang \rightarrow Statia \rightarrow **Static** \rightarrow Statil \rightarrow Station

11. (C)

$$\text{Required Angle} = \frac{11}{2} \times 36 - 30 \times 4 = \mathbf{78^\circ}$$

12. (C)

$$\begin{array}{cccccc} 6 & 7 & 16 & 51 & 204 & 1025 \\ \downarrow & \uparrow & \downarrow & \uparrow & \downarrow & \uparrow \\ & \times 1+1 & \times 2+2 & \times 3+3 & \times 4+4 & \times 5+5 \end{array}$$

13. (C)

$$27648 \div 4^4 = 108$$

$$108 \div 3^3 = 4$$

$$4 \div 2^2 = 1$$

$$1 \div 1^1 = \mathbf{1}$$

14. (D)

$$\begin{array}{cccc} \text{BIO} & \text{DKO} & \text{FMS} & \text{HOU} \\ \downarrow & \uparrow & \downarrow & \uparrow \\ & +2 & +2 & +2 \end{array}$$

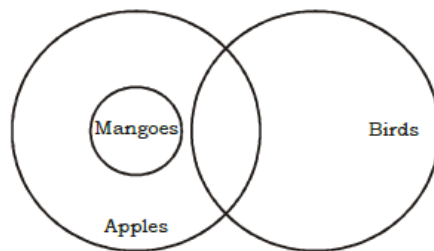
15. (B)

$$\begin{array}{ccccc} 4 & 23 & 60 & 121 & 212 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 2^3 - 4 & 3^3 - 4 & 4^3 - 4 & 5^3 - 4 & 6^3 - 4 \end{array}$$

16. (C)

$$\begin{array}{cccc} 7 & 49 & 343 & 2401 & 16807 \\ \downarrow & \uparrow & \downarrow & \uparrow & \downarrow & \uparrow \\ & \times 7 & \times 7 & \times 7 & \times 7 \end{array}$$

17. (B)



I False

II True

18. (D)

$$49 = 9 \times 5 + 4$$

$$60 = 8 \times 7 + 4$$

$$22 = 2 \times 9 + 4$$

$$28 = 4 \times 6 + 4$$

19. (C)

$$2184 = (8 + 4 + 1)^3 - (8 + 4 + 1)$$

$$2184 = (5 + 6 + 2)^3 - (5 + 6 + 2)$$

$$\mathbf{4896} = (8 + 4 + 5)^3 - (8 + 4 + 5)$$

20.(D)

21.(D)

22.(B)

23.(A)

24.(A)

ATQ,

$$P - 20 = Q + 20$$

$$P - Q = 40 \quad \dots\dots\dots (i)$$

and,

$$P + 40 = 2(Q - 40)$$

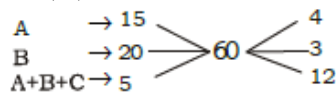
$$P - 2Q = -120 \quad \dots\dots\dots (ii)$$

From equation (i) and (ii)

$$P = \mathbf{200} \text{ and } Q = \mathbf{160}$$

25.(C)

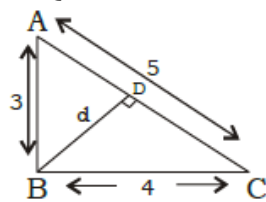
51. (D)



$$\therefore \text{Time taken by C} = \frac{60}{12 - 4 - 3} = \mathbf{12 \text{ days}}$$

52. (B)

ATQ,



$$BD = \frac{AB \times BC}{AC}$$

$$\Rightarrow BD = \frac{3 \times 4}{5} = \mathbf{2.4 \text{ cm}}$$

53.(A)

ATQ,

$$\text{Failed Boys} = \frac{28 \times 2000}{100} = 560$$

$$\text{Failed Girls} = \frac{38 \times 1300}{100} = 494$$

$$\text{Total failed candidates} = \frac{(560 + 494) \times 100}{3300} = \mathbf{31.94\%}$$

54. (B)

ATQ,

$$\sqrt{3} \cot \theta = 3 \cos \theta$$

$$\Rightarrow \sin \theta = \frac{1}{\sqrt{3}}$$

$$\Rightarrow \sin^4 \theta = \frac{1}{9}$$

$$\text{Again, } \sin \theta = \frac{1}{\sqrt{3}}$$

Apply Pythagoras Theorem,

$$\Rightarrow \cos \theta = \frac{\sqrt{2}}{\sqrt{3}}$$

$$\Rightarrow \cos^4 \theta = \frac{4}{9}$$

Then,

$$\sin^4 \theta - \cos^4 \theta = \frac{1}{9} - \frac{4}{9} = \frac{-1}{3}$$

55. (A)

ATQ,

$$\frac{\pi r^2 h}{2\pi r h} = \frac{12474}{1188}$$

$$\Rightarrow r = 21 \text{ cm}$$

$$\text{and, } 2\pi r h = 1188$$

$$\Rightarrow h = 9 \text{ cm}$$

Hence, h : r

$$9 : 21$$

$$\mathbf{3 : 7}$$

56. (D)

ATQ,

$$x - y = \frac{15}{30} \times 60 = 30 \text{ kmph} \text{-----(i)}$$

and,

$$x + y = \frac{30}{30} \times 60 = 60 \text{ kmph} \text{-----(ii)}$$

From equation (i) and (ii),

$$x = 45 \text{ kmph and } y = 15 \text{ kmph}$$

$$\therefore \text{Total time} = \frac{90}{45} = \mathbf{2 \text{ hours}}$$

57. (A)

ATQ,

$$x^2 + x = 9702$$

with the help of options,

$$\Rightarrow x = \mathbf{98}$$

58. (B)

ATQ,

$$a^4 + a^2b^2 + b^4 = a^4 + a^2b^2 + b^4 + a^2b^2 - a^2b^2$$

$$\Rightarrow 147 = a^4 + 2a^2b^2 + b^4 - a^2b^2$$

$$\Rightarrow 147 = (a^2 + b^2)^2 - a^2b^2$$

$$\Rightarrow 147 = (a^2 + b^2 - ab)(a^2 + b^2 + ab)$$

$$\text{Hence, } a^2 + b^2 + ab = \frac{147}{21} = 7$$

59. (D)
ATQ,

$$121 = P \left(\frac{11}{100} \right)^2$$

$$\Rightarrow P = \text{Rs. } 10000$$

60. (B)
ATQ,

$$\cos \theta + \sec \theta = 2$$

$$= \cos \theta + \frac{1}{\cos \theta} = 2$$

$$= \cos^2 \theta + 1 - 2 \cos \theta = 0$$

$$\text{then, } \cos \theta = 1$$

$$\Rightarrow \theta = 0^\circ$$

$$\text{So, } \sin 0^\circ - \operatorname{cosec} 0^\circ = 0$$

61. (B)

Cost of printing i.e. 30% = Rs.1440

$$1\% = \frac{1440}{30}$$

$$100\% = \frac{1440}{30} \times 100 = \text{Rs. } 4800$$

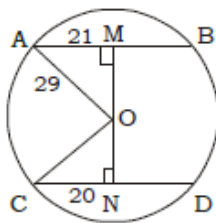
$$\therefore \text{Cost price for 1000 copies} = 4800 \times 1000 = \text{Rs. } 4800000$$

62. (D)

20% i.e. binders charge = Rs.1400

$$14\% \text{ i.e. the cost of Royalty} = \frac{1400}{20} \times 14 = \text{Rs. } 980$$

63. (D)



As, we know that OM bisects AB. Similarly, ON bisects CD
In ΔAMO ,

$$OM = \sqrt{(29)^2 - (21)^2} = 20\text{cm}$$

In ΔCNO ,

$$ON = \sqrt{(29)^2 - (20)^2} = 21\text{cm}$$

Hence, the difference between them
= OM + ON
= 21 + 20
= **41cm.**

64. (B)
ATQ,

$$\frac{1}{\sqrt{11} + \sqrt{5}} + \frac{1}{\sqrt{11} - \sqrt{5}}$$

$$= \frac{\sqrt{11} - \sqrt{5} + \sqrt{11} + \sqrt{5}}{(\sqrt{11})^2 - (\sqrt{5})^2} = \frac{2\sqrt{11}}{11 - 5} = \frac{\sqrt{11}}{3}$$

65. (D)

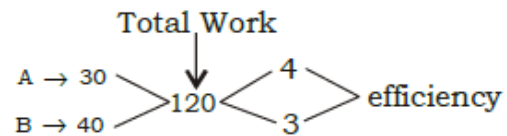
$$\begin{array}{cccc} 2^{16} & 3^{12} & 4^7 & 6^8 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 2^{16} & 3^{12} & 2^{14} & 6^8 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ (2^4)^4 & (3^3)^4 & (2^{3.5})^4 & (6^2)^4 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 16^4 & 27^4 & (2^{3.5})^4 & 36^4 \end{array}$$

$\therefore 6^8$ is the largest among them

66. (B)

$$\text{Speed of train} = \frac{180}{9} \times \frac{18}{5} = 72 \text{ kmph}$$

67. (A)



Total work is done by A in 15 days

$$= 4 \times 15 = 60\text{units}$$

$$\text{Remaining work} = 120 - 60 = 60 \text{ units}$$

$$\square \text{ Required number of days} = \frac{60}{3} = 20 \text{ days}$$

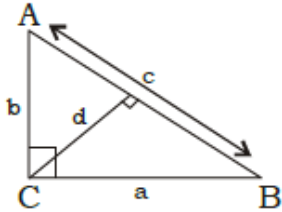
68. (B)

ATQ,

$$\frac{a^6 - 1}{a^2 + 1} = \frac{(a^3 - 1)(a^3 + 1)}{a^2 + 1}$$

$$= \frac{(a - 1)(a^2 + a + 1)(a^3 + 1)}{a^2 - 1} = 0 \quad [\because a^2 + a + 1 = 0]$$

69. (B)



ATQ,

$$\frac{1}{2} a \times b = \frac{1}{2} d \times c$$

$$\Rightarrow d = \frac{ab}{c}$$

$$\Rightarrow d = \frac{ab}{\sqrt{a^2 + b^2}} \quad [\because c^2 = \sqrt{a^2 + b^2}]$$

Squaring both sides,

$$\Rightarrow d^2 = \frac{a^2 b^2}{a^2 + b^2}$$

$$\Rightarrow \frac{1}{d^2} = \frac{a^2 + b^2}{a^2 b^2}$$

$$\Rightarrow \frac{1}{d^2} = \frac{1}{a^2} + \frac{1}{b^2}$$

70. (B)

Net successive discount

$$= 25 + 20 + 10 - \frac{25 \times 20}{100} - \frac{10 \times 20}{100} - \frac{10 \times 25}{100}$$

$$+ \frac{20 \times 25 \times 10}{10000} = 46\%$$

71. (B)

$$\begin{array}{r} 729 \overline{)99999(137} \\ \underline{729} \\ 2709 \\ \underline{2187} \\ 5229 \\ \underline{5103} \\ 126 \end{array}$$

\therefore Required number = $99999 - 126 = 99873$

72. (A)

Total population after two years =

$$5000 \times \left(1 + \frac{10}{100}\right)^2 = 5000 \times \frac{11}{10} \times \frac{11}{10} = 6050$$

73. (A)

$$\tan 75^\circ = \tan (45^\circ + 30^\circ) = \frac{\tan 45^\circ + \tan 30^\circ}{1 - \tan 45^\circ \tan 30^\circ}$$

$$= \frac{1 + \frac{1}{\sqrt{3}}}{1 - \frac{1}{\sqrt{3}} \times 1} = \frac{\sqrt{3} + 1}{\sqrt{3} - 1}$$

74. (C)

+ shows efficiency of filling pipe

- shows efficiency of draining pipe

$$\begin{array}{c} +A \rightarrow 12 \\ -B \rightarrow 8 \end{array} \left. \begin{array}{l} \\ \end{array} \right\} 24 \left. \begin{array}{l} \\ \end{array} \right\} \begin{array}{l} 2 \\ 3 \end{array}$$

$$\therefore \text{Required time} = \frac{24}{3 - 2} = 24 \text{ hours}$$

75. (A)

$$a = 10 + 20 + 25 - \frac{10 \times 20}{100} - \frac{20 \times 25}{100} - \frac{10 \times 25}{100} + \frac{10 \times 25 \times 20}{10000} = 46\%$$

$$b = 30 + 10 + 10 - \frac{10 \times 10}{100} - \frac{10 \times 30}{100} - \frac{30 \times 10}{100} + \frac{10 \times 10 \times 30}{10000} = 43.3\%$$

Hence, discount (a) is better for customer.

SSC PRE MOCK TEST – 12 (ANSWER)

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