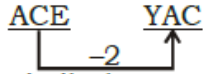


SSC PRE MOCK TEST – 15 (SOLUTION)

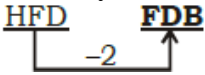
1. (D)

As, Screw Driver is used for Screw.
Similarly, **Hammer** is used for Nail.

2. (D)



Similarly,



3. (B)

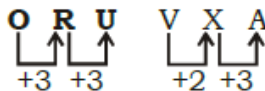
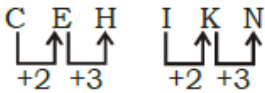
$$10^3 = 1000$$

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)

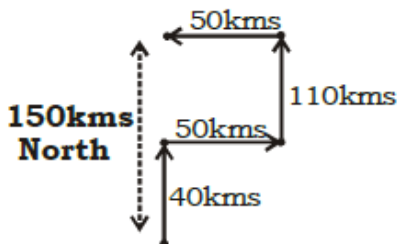
Difference between both dates

$$= 2 + 30 + 31 + 31 + 30 + 9$$

$$= 19 \text{ weeks}$$

So, the day on 9th October is **Monday**

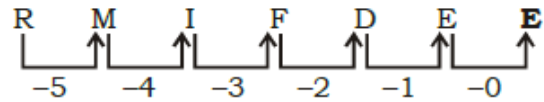
9. (B)



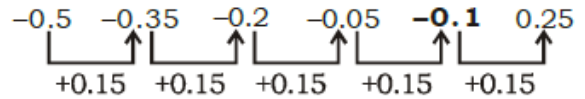
10. (C)

URINE

11. (D)



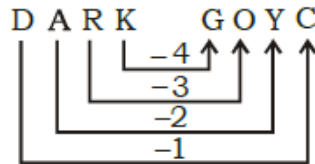
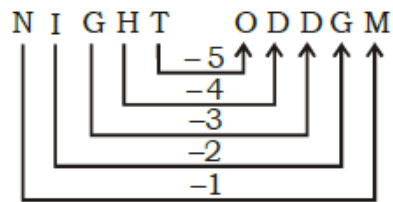
12. (B)



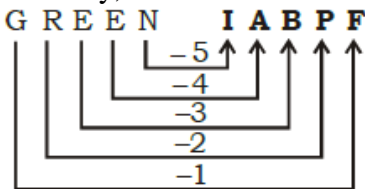
13. (B)



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)

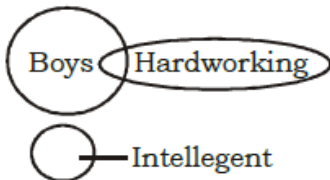
Take the symbol as # = ÷ and % = ×

then, $\frac{3}{4} \times 3 = 6$

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

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

17. (B)
 $9 \times 2 \times 8 - 1 = 143$
 $7 \times 5 \times 8 - 1 = 279$
 $9 \times 7 \times 8 - 1 = 503$
 18. (A)
 19. (D)



I True
II False

20. (C)
 21. (A)
 22. (A)
 23. (A)
 24. (A)
 25. (B)
 51. (B)

ATQ,

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

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

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

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

from equation (i) and (ii),

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

$$\text{then } x+y = 40 \text{-----(iii)} \quad \text{and}$$

$$x-y = 8 \text{-----(iv),}$$

from equation (iii) and (iv),

$$y = 16 \text{ and } x = 24$$

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

52. (B)

ATQ,

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

53. (C)

ATQ,

$$\begin{aligned} \text{Required distance} &= 2 \times \frac{22}{7} \times 28 \times 10 \\ &= \mathbf{1760 \text{ cm}} \end{aligned}$$

54. (B)

ATQ,

Total surface area

$$\begin{aligned} &= 2 \times \frac{22}{7} \times \frac{14}{2} \times \frac{14}{2} + 2 \times \frac{22}{7} \times \frac{14}{2} \times 15 \\ &= 308 + 660 = \mathbf{968 \text{ cm}^2} \end{aligned}$$

55. (C)

ATQ,

$$\begin{aligned} \text{Required discount} &= 56 + 14 - \frac{56 \times 14}{100} \\ &= \mathbf{62.16\%} \end{aligned}$$

56. (A)

ATQ,

$$x = 2 - y$$

$$x^2 = 3 + y^2$$

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

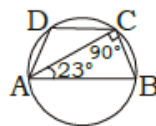
$$\Rightarrow 4 + y^2 - 4y = 3 + y^2$$

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

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

57. (D)

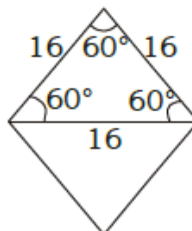
ATQ,



$$\angle ADC = 180^\circ - (90^\circ - 23^\circ) = \mathbf{113^\circ}$$

58. (B)

ATQ,



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

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

Hence, Area of equilateral triangle

$$= \frac{\sqrt{3}}{4} \times 16\sqrt{3} \times 16\sqrt{3} = 192\sqrt{3} \text{ cm}^2$$

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,

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

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

62. (B)

ATQ,

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

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

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

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

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

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

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

63. (A)

ATQ,

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

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

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

64. (B)

ATQ,

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

Apply componendo and dividendo rule,

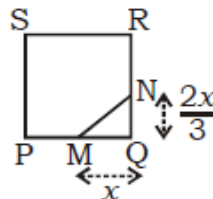
$$\frac{p+q}{p-q} = \frac{a}{9}$$

Square on both sides,

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

65. (D)

ATQ,



Let $MQ = x$

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

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

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

$$\text{Hence, length of PR (diagonal)} = 2 \times 18 \times \sqrt{2} = 36\sqrt{2} \text{ cm}$$

66. (B)

ATQ,

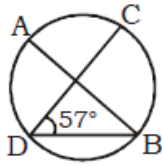
$$\text{radius of circle (AO)} = \sqrt{35^2 + 12^2} = 37 \text{ cm}$$

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

$$\Rightarrow ON = \sqrt{(37)^2 - (35)^2} = 12 \text{ cm}$$

67. (C)

ATQ,



$\angle ADB = 90^\circ$ (angle made in half circle)
 then, $\angle ADC = 90^\circ - 57^\circ = 33^\circ$
 but $\angle ADC = \angle ABC$ (angle made by same chord)

$$\Rightarrow \angle ABC = 33^\circ$$

68. (B)

ATQ,

Let $AB = x$ and $BC = y$

$$\text{then, area of BCM} = \frac{1}{2} \times y \times \frac{2x}{3} = \frac{xy}{3}$$

$$\text{and area of CDN} = \frac{1}{2} \times \frac{2y}{3} \times x = \frac{xy}{3}$$

then, area of ABCD = xy

$$\text{Now, } xy - \frac{1}{3}xy - \frac{1}{3}xy = 17$$

$$\Rightarrow \frac{1}{3}xy = 17$$

$$\Rightarrow xy = 51$$

Hence, area of ABCD = **51 cm²**

69. (B)

ATQ,

$$\begin{aligned} & (1 - \sin A \cos A) (\sin A + \cos A) \\ &= (\sin^2 A + \cos^2 A - \sin A \cos A) (\sin A + \cos A) \\ &= (\sin^3 A + \cos^3 A) \end{aligned}$$

70. (C)

ATQ,

$$\begin{aligned} \sqrt{\frac{1 - \sin A}{1 + \sin A}} &= \sqrt{\frac{1 - \sin A}{1 + \sin A} \times \frac{1 - \sin A}{1 - \sin A}} \\ &= \sqrt{\frac{(1 - \sin A)^2}{1 - \sin^2 A}} = \frac{1 - \sin A}{\cos A} = \sec A - \tan A \end{aligned}$$

71. (D)

ATQ,

$$\begin{aligned} \sqrt{\frac{1}{\sin^2 A} + \frac{1}{\cos^2 A}} &= \sqrt{\frac{\sin^2 A + \cos^2 A}{\sin^2 A \cos^2 A}} \\ &= \frac{1}{\sin A \cos A} = \operatorname{cosec} A \sec A \\ &= \sqrt{1 + \tan^2 A} \sqrt{1 + \cot^2 A} \\ &= \sqrt{1 + \tan^2 A} \sqrt{1 + \frac{1}{\tan^2 A}} \\ &= \sqrt{1 + \tan^2 A} \frac{\sqrt{1 + \tan^2 A}}{\tan A} \\ &= \frac{1 + \tan^2 A}{\tan A} = \cot A + \tan A \end{aligned}$$

72. (B)

ATQ,

Required average

$$\begin{aligned} & \frac{152 + 35 + 14 + 138 + 34 + 40 + 35}{13} \\ &= \frac{+150 + 63 + 68 + 112 + 73 + 196}{13} = \mathbf{85} \end{aligned}$$

73. (C)

ATQ,

$$\text{Option A} = \frac{(138 - 34)}{138} \times 100 = 75.36\%$$

$$\text{Option B} = \frac{(150 - 63)}{150} \times 100 = 58\%$$

$$\text{Option C} = \frac{(138 - 14)}{138} \times 100 = \mathbf{90\%}$$

$$\text{Option D} = \frac{196 - 73}{196} \times 100 = 62.75\%$$

74. (B)

See the solution of question no 72.

75. (A) Required amount

$$\begin{aligned} & (152 + 35 + 14 + 138 + 34 + 40 + 35 \\ &= +150 + 63 + 68 + 112 + 73 + 196) \times 56 \\ &= 1110 \times 56 = \mathbf{₹ 55500} \end{aligned}$$

SSC PRE MOCK TEST – 15 (ANSWER)

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