SSC PRE MOCK TEST – 30 (SOLUTION)

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

2. (C) BFJ : KOS :: KOS : **TXB**
   (+9, +9)

3. (C) As, 14 ⇒ 14 × 2 + 2 = 30
   Similarly,
   16 ⇒ 16 × 2 + 2 = **34**

4. (D) Z B D J L N Q S U **N O P**
   (+2 +2) (+2 +2) (+2 +2) (+1 +1)

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

6. (A) **1356** ⇒ 1 + 3 + 5 + 6 ≠ 25
   5497 ⇒ 5 + 4 + 9 + 7 = 25
   7864 ⇒ 8 + 7 + 6 + 4 = 25
   9943 ⇒ 9 + 9 + 4 + 3 = 25

7. (D) Pemmafrost → Permanence →Permanent → Permeability.

8. (A) As, D I S O R D E R
   O S I D R E D R

   Similarly, P R A C T I C E
   C A R P E C I T

9. (B) 14*6*3*5*4*20
   From option (B),
   14 + 6 ÷ 3 × 5 – 4 = 20
   ⇒ 14 + 2 × 5 – 4 = 20
   ⇒ 14 + 10 – 4 = 20
   ⇒ 20 = 20
   ∴ Option (B) is the right answer.

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

11. (B) DJO, EKP, FLQ, GMR, **HNS**
    (+1, +1, +1, +1)

12. (C) PR, VX, BD, **HJ**
    (+6, +6, +6)

13. (C) 4, 13, 40, 121, **364**
    (×3+1, ×3+1, ×3+1, ×3+1)

14. (C) Neither I nor II follow.

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

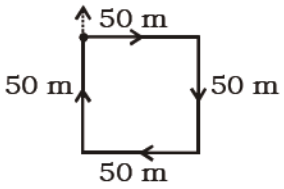
16. (D) $3^2 + 4^2 = 5^2$
    $12^2 + 5^2 = 13^2$
    $24^2 + 7^2 = 625$
    $= \mathbf{25^2}$

17. (B) 6 × 7 = 42
    8 × 4 = 32
    9 × 5 = **45**

18. (B) 81 × 9 + 10 – 6 ÷ 5
    After changing the signs as per the given detail,
    81 ÷ 9 – 10 × 6 + 5
    = 9 – 60 + 5
    = **– 46**

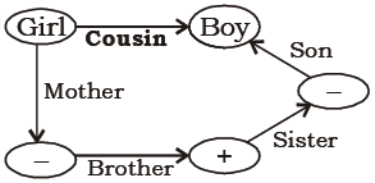
19. (D) ab**c** / **a**abbc**c** / aa**a**bbb

20. (B)



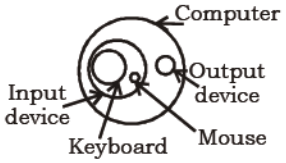
    He is present at his original position.

21. (A)



22. (B) 23. (A)

24. (C)



25. (C) **H A I R Y**
    ↓ ↓ ↓ ↓ ↓
    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 × 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

$= (8)^2 + 32\sqrt{5}$

$= 64 + 32\sqrt{5}$

$= \mathbf{32\,(2+\sqrt{5})\,cm^2}$

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 = $\frac{54}{27} \times 100 = \mathbf{20}$

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 = $4x = 4 \times 6$ = **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

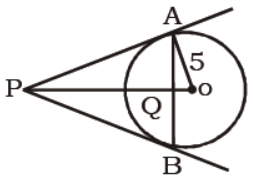
Circumference of circle = Perimeter of equilateral Δ.

$\Rightarrow 132 = 3 \times$ side

$\Rightarrow$ Side $= \frac{132}{3} = 44$

$\therefore$ Height = $\frac{\sqrt{3}}{2} \times$ side = $\frac{\sqrt{3}}{2} \times 44 = \mathbf{22\sqrt{3}}$ **mm**

59. (B)



Let AB = 2a = 6cm

$\Rightarrow$ a = 3cm

and, r = 5cm

We have,

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

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

60. (D) $\angle ABC = 70°$

$\angle AEB = 75°$

$\therefore$ $\angle BAE = 180° - (70° + 75°) = 180° - 145° = 35°$

$\angle BCD + \angle DAB = 180°$ (opp. angles of cyclic quadrilateral ABCD)

$\Rightarrow$ $\angle BCD + 35° = 180°$

$\Rightarrow$ $\angle BCD = 180° - 35° = 145°$

$\therefore$ $\angle DCE = 180° - \angle BCD = 180° - 145° = \mathbf{35°}$

61. (B) Put, a = 2, b = 2.5

$a^3 + b^3 = (2)^3 + (2.5)^3 = 8 + 15.625 =$ **23.625**

62. (A) $x^2 - \sqrt{2}x = -1$

$\Rightarrow x(x - \sqrt{2}) = -1$

$\Rightarrow x - \sqrt{2} = -\frac{1}{x}$

$\Rightarrow x + \frac{1}{x} = \sqrt{2}$

$\therefore \frac{x^4+1}{x^2} = x^2 + \frac{1}{x^2}$

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

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

$= 2 - 2 =$ **0**

63. (B) Let the width of rectangle = x cm

Then, length of rectangle = $(x + 1)$ cm

$\because$ Area of rectangle = l × 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 = 20cm

Length = $x + 1 = 20 + 1 = 21$ cm

$\therefore$ Perimeter = 2(l + b) = 2 (20 + 21)

= 2(41) = **82 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 × 20 = **₹1280**

65. (A) A.T.Q,

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

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

= 132 sec.

= **2 minutes 12 sec.**

66. (D) $\sin^2 6° + \sin^2 12° + \text{-------} + \sin^2 84° + \sin^2 90°$

= $\sin^2 6° + \sin^2 12° + \text{-------} + \sin^2 84° + 1$

[$\because \sin 90° = 1$]

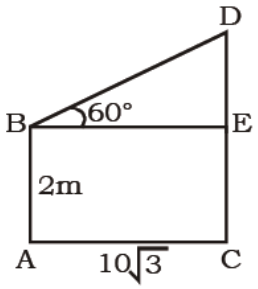
No. of terms (n) = $\left(\frac{84-6}{6}\right) + 1 = 14$

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

[$\because \sin^2 6° + \sin^2 84° = 1$]

$\therefore$ Total value = 7 + 1 = **8**

67. (B)



Let AB be the observer and CD be the tower.

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

In ΔBDE,

$\frac{DE}{BE} = \tan 60° = \sqrt{3}$

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

$\therefore$ CD = CE + DE = (2 + 30) = **32 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%

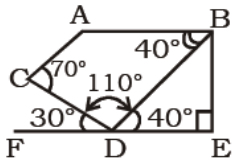
$\therefore$ In these 2 days, work done by A = 2.5 × 2 = 5%

So, remaining work (25 – 5 = 20%) will be done by B in 2 days

$\because$ B does 20% work in 2 days.

$\therefore$ It will complete 100% work in **10 days.**

69. (B)



Given, AB||DE

AC||BD

BE $\perp$ DE

From line Properties,

70° + $\angle$BDC = 180°

$\Rightarrow \angle$BDC = 180° – 70° = 110°

Now, $\angle$BDE = 180° – (30° + 110°) = 40°

$\angle$BDE = $\angle$ABD = 40° [Alternate angles]

$\therefore$ In quadrilateral, sum of all angles = 360°

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

$\Rightarrow \angle A = 360° - 220° =$ **140°**

70. (C) (SecA + tanA) (1 – Sin A)

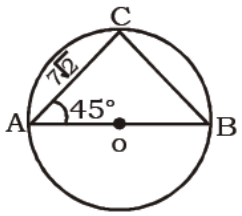
$= \left(\frac{1}{\cos A} + \frac{\sin A}{\cos A}\right)(1 - \sin A)$

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

$= \frac{1 - \text{Sin}^2 A}{\cos A} = \frac{\text{Cos}^2 A}{\cos A}$

= **Cos A**

71. (A)



ΔABC is a right angled triangle at C.

$\angle CAB = 45°$

$\therefore \angle ABC = 45°$

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

$\therefore$ $AB = 7\sqrt{2} \times \sqrt{2}$

$= 14$cm

AB (diameter) = 14cm

$\therefore$ Radius (AO) = 7 cm

Area of circle $= \pi r^2 = \frac{22}{7} \times 7 \times 7 =$ **154cm²**

72. (B) ATQ,

We have,

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

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

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

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

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

Population of A and F together

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

$\therefore$ Total population of A and F

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

74. (A) $\because$ 25% $= \frac{1}{4} \times 360° = 90°$

Poulation of (A + D + E) = (60° + 90° + 30°)

= 180°

Population of (B + C + F) = 360°– 180°

= 180°

$\therefore$ Required Ratio of Population = 180° :180°

= 1 : 1

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

Required number of children =

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

SSC PRE MOCK TEST – 30 (ANSWER)

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