

SSC CPO SI MOCK TEST – 05 (SOLUTION)

1. (D) C F I L : O R U X
 $\downarrow +3 \uparrow \downarrow +3 \uparrow \downarrow +3 \uparrow$: $\downarrow +3 \uparrow \downarrow +3 \uparrow \downarrow +3 \uparrow$

2. (B) $\begin{matrix} \text{+1} & & \text{+1} & & \text{+1} \\ \text{KL} & \text{XW} & \text{MN} & \text{VU} & \text{OP} & \text{TS} & \text{QR} \\ \text{-1} & & \text{-1} & & \text{-1} \end{matrix}$

3. (C) $\begin{matrix} 16 & 28 & 52 & 100 & 196 \\ \downarrow +12 \uparrow & \downarrow +24 \uparrow & \downarrow +48 \uparrow & \downarrow +96 \uparrow \\ \times 2 & \times 2 & \times 2 \end{matrix}$

4. (C) $\begin{matrix} 9 & 16 & 25 & 36 & 49 & 64 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 3^2 & 4^2 & 5^2 & 6^2 & 7^2 & 8^2 \end{matrix}$

5. (B) $2 + 5 - 1 = 6$
 $5 + 4 - 3 = 6$

Similarly,

$$x + 7 - 1 = 6$$

$$x + 6 = 6$$

$$x = 6 - 6$$

$$= 0$$

6. (C) $\begin{matrix} \text{+2} & & \text{+2} & & \text{+2} \\ \text{MN} & \text{KP} & \text{IR} & \text{GT} \\ \text{-2} & \text{-2} & \text{-2} \end{matrix}$

7. (D) $\begin{matrix} 17 & 187 & 2057 & 22627 \\ \downarrow \times 10 + 17 \uparrow & \downarrow \times 10 + 187 \uparrow & \downarrow \times 10 + 2057 \uparrow \end{matrix}$

8. (C) Let the n^{th} term of 5, 8, 11, 14, is 320.

$$(a = 5 \text{ and } d = 3)$$

$$a_n = a + (n - 1)d$$

$$\Rightarrow 320 = 5 + (n - 1)3$$

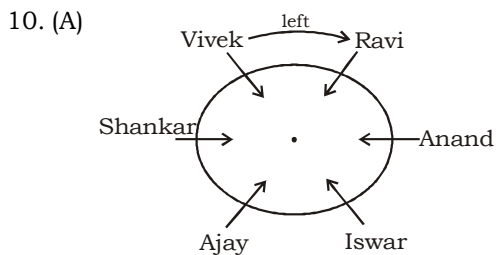
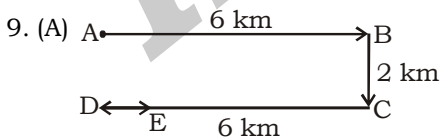
$$\Rightarrow \frac{320 - 5}{3} = n - 1$$

$$\Rightarrow \frac{315}{3} = n - 1$$

$$\Rightarrow 105 = n - 1$$

$$\therefore n = 105 + 1 = 106$$

Hence, 106th term is 320.



11. (C) $\begin{matrix} \text{+2} & & & & & & \\ \text{E} & \text{A} & \text{R} & \text{N} & \rightarrow & \text{G} & \text{C} & \text{T} & \text{P} \\ & \text{+2} & & & & \text{+2} & & & \\ & & & & & & \text{+2} & & \\ & & & & & & & & \text{+2} \end{matrix}$

Similarly,

$\begin{matrix} \text{+2} & & & & & & \\ \text{N} & \text{E} & \text{A} & \text{R} & \rightarrow & \text{P} & \text{G} & \text{C} & \text{T} \\ & \text{+2} & & & & \text{+2} & & & \\ & & & & & & \text{+2} & & \\ & & & & & & & & \text{+2} \end{matrix}$

12. (D) $5 \times (4 - 1) \Rightarrow 15$,

$$7 \times (8 - 1) \Rightarrow 49$$

$$6 \times (5 - 1) \Rightarrow 24$$

Similarly,

$$8 \times (4 - 1) \Rightarrow 24$$

13. (C)

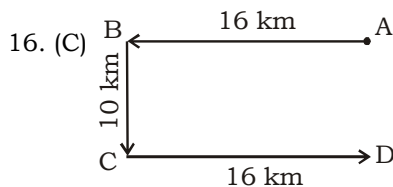
14. (B) $\begin{matrix} \text{+2} & & & & & & & & & & & & \\ \text{A} & \text{M} & \text{P} & \text{L} & \text{I} & \text{F} & \text{Y} & & \text{Y} & \text{F} & \text{I} & \text{L} & \text{P} & \text{M} & \text{A} \\ & \text{+2} & & & & & & & \text{+2} & & & & & & \\ & & & & & & & & & & & & & & \text{+2} \end{matrix}$

Similarly,

$\begin{matrix} \text{+2} & & & & & & & & & & & & \\ \text{N} & \text{A} & \text{T} & \text{I} & \text{O} & \text{N} & \text{A} & \text{L} & & \text{L} & \text{A} & \text{N} & \text{O} & \text{I} & \text{T} & \text{A} & \text{N} \\ & \text{+2} & & & & & & & & \text{+2} & & & & & & & \\ & & & & & & & & & & & & & & & & \text{+2} \end{matrix}$

15. (C) Year 2004 2005 2006 2007 2008 2009

Population 30 60 120 210 330 480
 $\downarrow +30 \uparrow \downarrow +60 \uparrow \downarrow +90 \uparrow \downarrow +120 \uparrow \downarrow +150 \uparrow$



Here, (BC = AD = 10 km)

Required distance = AD = 10 km

17. (B) CONCERN

18. (C) MPDRNO PRD UXRD PRD MNDRD

1 2

19. (C) DARE : ADER :: REEK : ERKE

$\begin{matrix} \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \text{①} & \text{②} & \text{③} & \text{④} & \text{②} & \text{①} & \text{④} & \text{③} & \text{①} & \text{②} & \text{③} & \text{④} & \text{②} & \text{①} & \text{④} & \text{③} \end{matrix}$

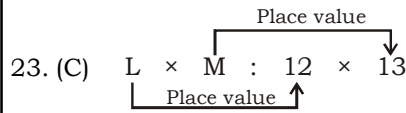
20. (B)

21. (A)

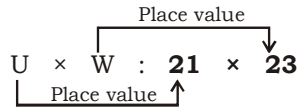
22. (D)

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Similarly,



24. (D)

25. (D) a : one :: f : **six**

Position	↑	Position	↑
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26. (C) 27. (C) 28. (B)

29. (D) (A) $95 - 82 = 13$

(B) $69 - 56 = 13$

(C) $55 - 42 = 13$

(D) $48 - 34 = 14$

30. (C) (A) $135 - 123 = 12$

(B) $123 - 111 = 12$

(C) $111 - 100 = 11$

(D) $100 - 88 = 12$

31. (D)

32. (A) Except option (A) all others are equal to $3/4$.

33. (C) $\frac{\text{Improvement}}{4}$ $\frac{\text{Inadequate}}{1}$ $\frac{\text{Incompetent}}{5}$

$\frac{\text{Inhospitable}}{3}$ $\frac{\text{Institution}}{2}$

34. (C) $abab$ / $abab$ / $abab$

35. (B) Area of the square = 16 sq. metre
(Side)² = 16

Side = $\sqrt{16} = 4$ m

Perimeter = $4 \times \text{Side}$
= 4×4
= 16 metre

36. (D) 2. $\frac{\text{Post}}{1}$ 1. $\frac{\text{Postage}}{2}$ 3. $\frac{\text{Poster}}{3}$

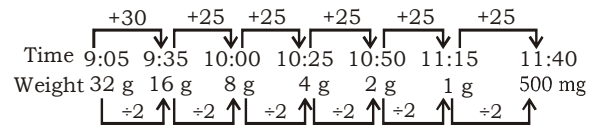
5. $\frac{\text{Posterior}}{4}$ 4. $\frac{\text{Posterity}}{5}$

37. (B) $\frac{\text{Jawaharlal Nehru}}{3}$ $\frac{\text{Lal Bhadur Shastri}}{1}$

$\frac{\text{Indira Gandhi}}{2}$ $\frac{\text{V.P. Singh}}{5}$

$\frac{\text{P.V. Narashimha Rao}}{4}$

38. (C)



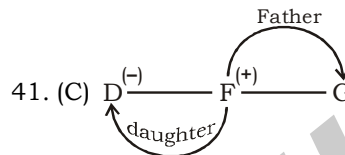
39. (D) $100 - 60 \div 6 \times 2 + 8$

$\Rightarrow 100 - 10 \times 2 + 8$

$\Rightarrow 100 - 20 + 8$

$\Rightarrow 108 - 20 = 88$

40. (C) \triangle # \diamond \wedge $<$
 ↓ ↓ ↓ ↓ ↓
 P A T C H



'D' is daughter of 'F' and 'F' is father of 'G'.
So 'F' is father of 'D' and 'G'.

Hence, 'D' is the sister of 'G'.

42. (B) 43. (D) 44. (A) 45. (D)

46. (C) 47. (A) 48. (C) 49. (C)

50. (C) MEN represents the sets of following numbers -

M - 56, 68, **75**, 87, 99

E - **00**, 12, 24, 31, 43

N - 57, 69, 76, 88, **95**

101. (B) $\frac{51.84}{4.32} = 12$ [Given]

Now, $\frac{0.005184}{0.432}$

= $\frac{51.84}{4.32} \times \frac{10^{-4}}{10^{-1}} = 12 \times 10^{-3}$

= 0.012

102. (B) $\sqrt[3]{0.000125} = \sqrt[3]{\frac{125}{10^6}} = \frac{5}{10^2} = 0.05$

103. (B)

2	1848
2	924
2	462
3	231
7	77
	11

$1848 = 2 \times 2 \times 2 \times 3 \times 7 \times 11$ (i)

From above :

Odd composite divisors are = 3, 7, 11

104.(B) $(64)^{x+1} = \frac{64}{4^x}$

$$\Rightarrow [(4^3)^{x+1}] = \frac{4^3}{4^x}$$

$$\Rightarrow 4^{3x+3} = \frac{4^3}{4^x}$$

$$\text{or, } [4^{3x+3}] \times [4^x] = 4^3$$

$$\text{or, } 4^{3x+x+3} = 4^3$$

$$\therefore 4^{4x+3} = 4^3$$

$$\therefore 4x + 3 = 3 \text{ [}\therefore \text{ same base]}$$

$$\therefore 4x = 0$$

$$x = 0$$

105.(C) Let the total number of pages in the book = x

On 1st day I read $\frac{3}{8}$ of book:

$$\therefore \text{No. of pages} = \frac{3}{8}x$$

$$\text{Number of Remaining pages} = x - \frac{3}{8}x = \frac{5x}{8}$$

A.T.Q.

$$\left[\frac{3}{8}x\right] + \frac{4}{5}\left[\frac{5x}{8}\right] + 30 = x$$

$$\text{or, } \frac{3x}{8} + \frac{4x}{8} + 30 = x$$

$$\text{or, } 7x + 240 = 8x$$

$$x = 240$$

\therefore Total no. of pages in the book = 240

106. (A) $\frac{(x-1)(x+1)}{(x+1)(x+2)} = \frac{5}{6}$

$$\Rightarrow 6(x^2-1) = 5(x^2+3x+2)$$

$$\Rightarrow 6x^2 - 6 - 5x^2 - 15x - 10 = 0$$

$$\Rightarrow x^2 - 15x - 16 = 0$$

$$(x-16)(x+1) = 0$$

$$x = 16$$

107. (A) $P_1=90$ $T_1=40$ $W_1=\frac{1}{3}$

$$P_2=? \quad T_2=60 \quad W_2=\frac{2}{3}$$

$$\therefore \frac{P_1 T_1}{P_2 T_2} = \frac{W_1}{W_2}$$

$$\frac{90 \times 40}{P_2 \times 60} = \frac{\frac{1}{3}}{\frac{2}{3}}$$

$$P_2 = \frac{90 \times 40 \times 2}{60} = 120$$

Extra men employed = 120-90 = 30 men.

108. (A) C.P. = Rs. 7,660 Discount = 12%

% gain = 10%

SP = 110% of 7660

$$\text{Rs. } 1.10 \times 7660 = \text{Rs. } 8426$$

Now, 88% of MP = Rs. 8426

$$\text{M.P.} = \frac{8426 \times 100}{88} = \text{Rs. } 9575$$

109. (A) Let the C. P. of the good be Rs. x

$$\text{M.P. of the goods} = 120\% \text{ of } x = \text{Rs. } \frac{120x}{100}$$

Suppose y% discount is allowed

$$\text{SP} = (100-y)\% \text{ of } \frac{120x}{100}$$

\therefore The man makes a profit of 12%

$$\Rightarrow 112\% \text{ of } x = \left(\frac{100-y}{100}\right) \times \frac{120x}{100}$$

$$\frac{112}{100} \times x = \left(\frac{100-y}{100}\right) \times \frac{120x}{100}$$

$$\frac{112 \times 10}{12} = 100 - y$$

$$y = 100 - \frac{280}{3} = \frac{300-280}{3} = 6\frac{2}{3}\%$$

110. (D) $\frac{\text{Box}}{\text{Paper bundle}} = \frac{3}{22}$

$$\frac{\text{Box} + \text{Paper bundle}}{\text{paper bundle}} = \frac{3+22}{22}$$

$$\frac{36}{\text{paper bundle}} = \frac{25}{22}$$

$$\text{paper bundle} = \frac{36 \times 22}{25} \text{ kg} = 31.68 \text{ kg.}$$

$$= 31680 \text{ gm}$$

111. (D) Let the two numbers are x and y.

As/q

$$x^2 = 8y^2 - 22y$$

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$$\text{Now, } \left[\left(\frac{3}{4} \right) y \right]^2 = 8y^2 - 22y$$

$$\text{or, } \frac{9}{16} y^2 = 8y^2 - 22y$$

$$\text{or, } 8y^2 - \frac{9y^2}{16} = 22y$$

$$\text{or, } y^2(128 - 9) = 16 \times 224$$

$$\text{or, } y^2 = \frac{16 \times 224}{119} = \frac{3584}{119}$$

$$y^2 = 30.11$$

$$y = 5.48$$

$$\therefore x = 4.11$$

112.(A) Let the total no. of student = x

$$\therefore \text{Total marks} = 60x$$

Now,

New Average is 30 for 100 students.

$$\therefore \text{Total mark} = 3000$$

Combined Average = 45 for x students.

$$\therefore \text{Total marks} = 45x$$

As/Q

$$60x = 3000 + 45x$$

$$\Rightarrow 15x = 3000$$

$$\therefore x = 200$$

113.(A) Average pocket money of A, B and C = Rs. 80

$$\frac{A+B+C}{3} = \text{Rs. } 80$$

$$\therefore \text{Total money of (A+B+C)} = \text{Rs. } 240$$

Let A spent = Rs. x

A.T.Q.,

Total Money – Spent money = Remaining money

$$\text{or, } (A+B+C) - (x + 2x + 3x) = 180$$

$$\text{or } 240 - 6x = 180$$

$$\Rightarrow 6x = 60$$

$$\therefore x = 10$$

114.(C) cost price = Rs. $\left[\frac{100}{130} \times 1690 \right]$

$$\text{Rs. } 100 \times 13$$

$$\text{Rs. } 1300$$

115.(C) Let the C.P. of article = Rs. x

As/Q

$$\frac{125}{100} \times \frac{90}{100} \times x = 675$$

$$\therefore x = \frac{675 \times 100 \times 100}{125 \times 90} = \text{Rs. } 600$$

116.(A) Let the electric bill = Rs x

As/Q

$$\frac{15}{100} \times x = 54$$

$$\therefore x = \frac{54 \times 100}{15} = \text{Rs. } 360$$

117.(C) Cost Price of A = Rs. $\left[\frac{4860 \times 100}{100 - 9} \right]$

$$= \text{Rs. } \frac{4860}{81} \times 100 = \text{Rs. } 6,000$$

Selling price at 17% profit for A

$$= \text{Rs. } \left[6000 \times \frac{117}{100} \right]$$

$$= \text{Rs. } 7020$$

C.P. for B = Rs. 4860 [Given]

Now,

$$\% \text{ profit for B} = \left[\frac{6000 - 4860}{4860} \right] \times 100$$

$$= \frac{2160}{4860} \times 100 = \frac{400}{9} \% = 44 \frac{4}{9} \%$$

118.(C) Relative speed of trains = $[45 - 40]$ km/hr

$$= 5 \text{ km/hr}$$

$$\text{Time taken} = \frac{45}{60} \text{ hrs.}$$

$$\therefore \text{Distance} = 5 \times \frac{45}{60} = 3.750 \text{ km}$$

$$= 3 \text{ km, } 750 \text{ m}$$

119.(D) C.I. = $P \left[\left(1 + \frac{r}{100} \right)^2 - 1 \right]$

$$\text{or, } 420 = P \left[\left(1 + \frac{10}{100} \right)^2 - 1 \right]$$

$$\text{or, } 420 = P \left[\frac{121}{100} - 1 \right]$$

$$\text{or, } 420 = P \left[\frac{121 - 100}{100} \right]$$

$$\therefore P = \frac{42000}{21}$$

$$= \text{Rs. } 2000$$

$$\therefore S.I. = \frac{P.R.T.}{100} = \frac{2000 \times 2 \times 10}{100} = \text{Rs. } 400$$

120.(D) Volume of cylinder = $\pi R^2 h$

$$= \pi (3\text{cm})^2 \times (5\text{cm})$$

$$= 45 \pi \text{ cm}^3 \dots\dots\dots (i)$$

Now,

$$\text{Volume of 1 cone} = \frac{1}{3} \pi R^2 h$$

$$= \frac{1}{3} \pi (0.1)^2 \times (1)$$

$$= \frac{1}{3} (0.01) \times 1 \times \pi \text{ cm}^2 \dots\dots(ii)$$

\therefore No. of cone =

$$\frac{45\pi}{\frac{1}{3}(0.01) \times \pi} = \frac{45\pi \times 100 \times 3}{1 \times \pi}$$

$$= \frac{45\pi \times 100 \times 3}{1 \times \pi}$$

$$= 4500 \times 3$$

$$= 13500$$

121.(A) Volume of sphere (larger) = $\frac{4}{3} \pi R^3$

$$= \frac{4}{3} \pi \times (3)^3 \text{ cm}^3$$

$$= \frac{4}{3} \pi \times 27 \text{ cm}^3 \dots\dots(i)$$

Let the radius of smaller sphere = r cm

According to the question :

$$\frac{4}{3} \times \pi \times (27) \text{ cm}^3 = 8 \times \frac{4}{3} \times \pi \times r^3 \text{ cm}^3$$

$$\therefore r = \left(\frac{27}{8}\right)^{\frac{1}{3}}$$

$$r = \frac{3}{2} = 1.5 \text{ cm}$$

122.(D) Area of Regular Tetrahedron

= $4 \times$ Area of Equilateral triangle

$$= 4 \times \frac{\sqrt{3}}{4} \times (12)^2 \text{ cm}^2 = 144 \sqrt{3} \text{ cm}^2$$

123.(A) Ratio of Volumes [Cones] = $\frac{\frac{1}{3} \pi R_1^2 h_1}{\frac{1}{3} \pi R_2^2 h_2}$

$$= \frac{R_1^2 h_1}{R_2^2 h_2} = \frac{\left(\frac{3}{2}\right)^2 \times 1}{\left(\frac{5}{2}\right)^2 \times 3} = \frac{9 \times 1}{25 \times 3} = 3 : 25$$

124.(B) Hollow pipe and cylinder have same height;

A.T.Q.,

Volume of Hollow pipe = Vol. of cylinder.

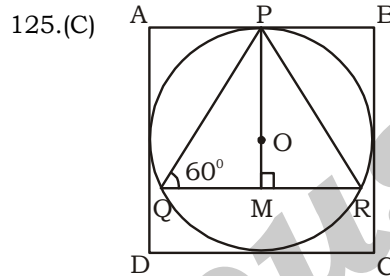
$$= \pi [25^2 - 24^2] \times h = \pi \times R^2 \times h$$

$$\text{or, } \pi [625 - 576] = R^2$$

$$\text{or, } R^2 = 49$$

$$\therefore R = 7 \text{ cm}$$

$$\therefore \text{Diameter} = 14 \text{ cm}$$



Diagonal of square = $12\sqrt{2}$ cm

Side of square = a cm

$$\text{Diagonal} = \sqrt{a^2 + a^2} = a\sqrt{2}$$

$$\therefore a\sqrt{2} = 12\sqrt{2}$$

$$\therefore a = 12 \text{ cm}$$

Diameter of circle = 12 cm

Now, O is centroid :-

It divides PM in 2 : 3 ratio.

\therefore Altitude of the equilateral triangle

$$= \frac{3}{2} \times 6 = 9 \text{ cm}$$

Now, $\Delta PMQ \cong \Delta PMR$ [RHS - Congruence]

$$\therefore QM = \frac{9\sqrt{3}}{3} = 3\sqrt{3} \text{ cm} \left[\because \frac{PM}{PR} = \frac{QM}{QP} \right]$$

Now :

\therefore side of equilateral Δ

$$= 2 \times QM = 2 \times 3\sqrt{3} = 6\sqrt{3} \text{ cm}$$

126.(C) Let the length and breadth of the rectangle be l and b unit respectively

And side of square = a -unit

A.T.Q.,

$$2(l+b) = 4a$$

$$l + b = 2a \dots\dots\dots (i)$$

Now, Area of rectangle = $l \times b$ sq. unit = Q

Area of square = a^2 sq. unit = P

Now: value of $(l \times b)$ will be maximum only when $l = b$ or $b = l$, this condition satisfied square.

From above conclusion :

$$P > Q$$

127.(B) $x - \frac{1}{x} = 3$

Taking cube on both sides

$$\left(x - \frac{1}{x}\right)^3 = (3)^3$$

$$\Rightarrow x^3 - \frac{1}{x^3} - 3\left(x - \frac{1}{x}\right) = 27$$

$$\Rightarrow x^3 - \frac{1}{x^3} - 3 \cdot [3] = 27 \left[\because x - \frac{1}{x} = 3\right]$$

$$\therefore x^3 - \frac{1}{x^3} = 27 + 9 = 36$$

128.(C) $5x + 6y = 30$ (i)

Intercept of equation (i) with x-axis, it means $y = 0$

$$\therefore 5x + 6(0) = 30$$

$$\therefore x = \frac{30}{5} = 6 \text{ units.}$$

129.(A) $m^4 + \frac{1}{m^4} = 119$

$$\text{Now, } (m^2)^2 + \frac{1}{(m^2)^2} = 119$$

$$\text{or } (m^2)^2 + \frac{1}{(m^2)^2} + 2 = 119 + 2$$

[Adding 2 both sides]

$$\Rightarrow \left[m^2 + \frac{1}{m^2}\right]^2 = 121 = (11)^2$$

$$\therefore m^2 + \frac{1}{m^2} = 11 \text{ (i)}$$

Now,

$$m^2 + \frac{1}{m^2} - 2 = 11 - 2$$

[Subtracting 2 both sides]

$$\Rightarrow \left[m - \frac{1}{m}\right]^2 = [3]^2$$

$$\therefore \left[m - \frac{1}{m}\right] = \pm 3$$

130.(B) $ax + by = 3$ (i)

$$bx - ay = 4$$
 (ii)

equation (i) multiply by 'a' & in equation (ii), multiply by 'b' and an adding them:

$$\begin{array}{r} a^2x + aby = 3a \\ b^2x - aby = 4b \\ \hline x [a^2 + b^2] = 3a + 4b \end{array}$$

$$x = \frac{[3a + 4b]}{[a^2 + b^2]} \text{ (i)}$$

Similarly:

$$y = \frac{[3b - 4a]}{[a^2 + b^2]} \text{ (ii)}$$

Now, $x^2 + y^2 = 1$

$$\Rightarrow \frac{(3a + 4b)^2 + (3b - 4a)^2}{(a^2 + b^2)^2} = 1$$

$$25(a^2) + 25(b^2) = (a^2 + b^2)^2$$

$$25 [a^2 + b^2] = (a^2 + b^2) (a^2 + b^2)$$

$$\therefore (a^2 + b^2) = 25$$

131.(A) Area of rectangle = $(x^2 + 7x + 10)$ sq.cm
 $= (x + 2)(x + 5)$

$$L = x + 5, B = x + 2$$

$$\text{Perimeter} = 2(l + b)$$

$$2[x + 5 + x + 2] = 4x + 14$$

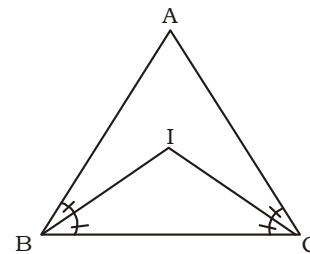
132.(A) Area of equilateral $\Delta = 4\sqrt{3}$ sq. cm

$$\therefore \frac{\sqrt{3}}{4} a^2 = 4\sqrt{3}$$

$$\therefore a = 4 \text{ cm}$$

$$\text{Perimeter of equilateral } \Delta = 4 \times 3 = 12 \text{ cm}$$

133.(C)



In ΔBIC :

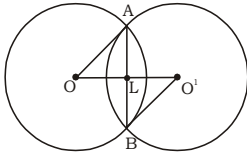
$$\angle BIC + \angle IBC + \angle ICB = 180^\circ$$

$$\Rightarrow \angle BIC + 30^\circ + 40^\circ = 180^\circ$$

[Incentre \rightarrow point of concurrence of angle bisectors]

$$\therefore \angle BIC = 110^\circ$$

134. (A)



$$OO' = 12 \text{ cm}$$

$$OL = \frac{12}{2} = \frac{12}{2} = 6 \text{ cm}$$

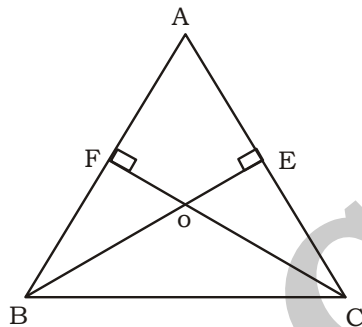
$$AB = 16 \text{ cm}$$

$$\therefore AL = \frac{16}{2} = 8 \text{ cm}$$

Using pythagoras theorem-

$$\begin{aligned} OA &= \sqrt{(OL)^2 + (AL)^2} \\ &= \sqrt{6^2 + 8^2} \\ &= \sqrt{36 + 64} = \sqrt{100} = 10 \text{ cm} \end{aligned}$$

135. (D)



In quadrilateral AFOE

$$\angle FAE + \angle AEO + \angle EOF + \angle OFA = 360^\circ$$

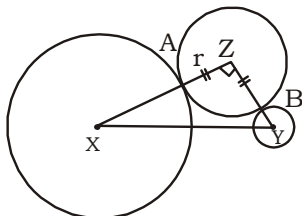
$$\text{or, } 70^\circ + 90^\circ + \angle EOF + 90^\circ = 360^\circ$$

$$\therefore \angle EOF = 360^\circ - 250^\circ = 110^\circ$$

$$\text{Now, } \angle EOF = \angle BOC = 110^\circ$$

[Vertically opposite angle]

136. (D)



$$XY = 17 \text{ cm}$$

$$XA = 9 \text{ cm}$$

$$YB = 2 \text{ cm}$$

By pythagoras theorem

$$XY^2 = (r + AX)^2 + (r + BY)^2$$

$$(17)^2 = (r + 9)^2 + (r + 2)^2$$

$$\text{or } 17^2 = (r^2 + 18r + 81) + (r^2 + 4r + 4)$$

$$\text{or } 17^2 = 2r^2 + 22r + 85$$

$$\therefore 2r^2 + 22r - 204 = 0$$

$$\therefore r^2 + 11r - 102 = 0$$

$$r^2 + 17r - 6r - 102 = 0$$

$$r(r+17) - 6(r+17) = 0$$

$$\therefore (r-6)(r+17) = 0$$

$$r = 6 \text{ cm}$$

137. (B) Sum of angles of a quadrilateral = 360°

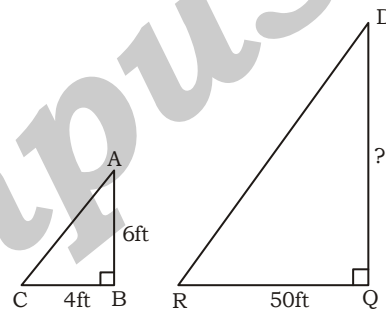
$$\therefore 60^\circ + 120^\circ + 90^\circ + x^\circ = 360^\circ$$

$$\therefore x^\circ = 90^\circ$$

Now, 180° is equal to π radians

$$\therefore 90^\circ \text{ is equal to } \frac{\pi}{2} \text{ radians}$$

138. (B)



Let the height of flag = x ft.

According to question :

$$\frac{6}{4} = \frac{x}{50}$$

$$\therefore x = \frac{25 \times 63}{4} = 75 \text{ ft.}$$

139. (B) $2[\cos^2\theta - \sin^2\theta] = 1$

$$\text{or, } 2[\cos^2\theta - 1 + \cos^2\theta] = 1$$

$$\text{or, } 4\cos^2\theta - 2 = 1$$

$$4\cos^2\theta = 3$$

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

$$\therefore \theta = \frac{\pi}{6} = 30^\circ$$

$$140. (D) (2\cos^2\theta - 1) \left[\frac{1 + \tan\theta}{1 - \tan\theta} + \frac{1 - \tan\theta}{1 + \tan\theta} \right]$$

$$\Rightarrow (2\cos^2\theta - 1) \left[\frac{2 + 2\tan^2\theta}{1 - \tan^2\theta} \right]$$

$$\Rightarrow (2\cos^2\theta - 1) 2 \left[\frac{1 + \tan^2\theta}{1 - \tan^2\theta} \right]$$

$$\Rightarrow \frac{(2\cos^2\theta - 1)(2)\sec^2\theta}{(1 - \tan^2\theta)}$$

$$[\because 1 + \tan^2\theta = \sec^2\theta]$$

$$\Rightarrow \frac{4\sec^2\theta\cos^2\theta - 2\sec^2\theta}{1 - \tan^2\theta}$$

$$\Rightarrow \frac{4 - 2\sec^2\theta}{1 - \tan^2\theta} [\because \sec\theta \cdot \cos\theta = 1]$$

$$\Rightarrow \frac{4 - 2(1 + \tan^2\theta)}{1 - \tan^2\theta} [\because \sec^2\theta = 1 + \tan^2\theta]$$

$$\Rightarrow \frac{4 - 2 - 2\tan^2\theta}{1 - \tan^2\theta} \Rightarrow \frac{2 - 2\tan^2\theta}{1 - \tan^2\theta}$$

$$\Rightarrow \frac{2[1 - \tan^2\theta]}{1 - \tan^2\theta} = 2$$

141.(B) $\sec^2A + \sec^2B - \sec^2A \cdot \sec^2B$

$$\Rightarrow \frac{1}{\cos^2 A} + \frac{1}{\cos^2 B} - \frac{1}{\cos^2 A} \cdot \frac{1}{\cos^2 B}$$

$$\Rightarrow \frac{\cos^2 B + \cos^2 A - 1}{\cos^2 A \cdot \cos^2 B}$$

$$\Rightarrow \frac{\cos^2 B + \sin^2 B - 1}{\cos^2 A \cdot \cos^2 B}$$

[\because A and B are complementary angles]

$$\Rightarrow \frac{1 - 1}{\cos^2 A \cdot \cos^2 B} = 0$$

[$\because \sin^2\theta + \cos^2\theta = 1$]

142.(C) Total No. of workers =
[3 + 8 + 5 + 4 + 9 + 8 + 6 + 7] = 50

143.(A) According to survey :
Ratio - 3 : 7

144.(A) Total amount = Rs.
[(1000×3) + (1100×8) + (1200×5) +
(1300×4) +
(1400×9) + (1500×8) + (1600×6) +
(1700×7)]
= Rs. [3000 + 8800 + 6000 + 5200 +

12600 + 12000 + 9600 + 11900]
= Rs. 69,100

145.(A) In wage group (1400-1500)
= [1400 × 9]
= [12600]
= Rs. 12,600

In wage group (1500 - 1600)
= [1500 × 8]
= [12000]
Rs. 12,000

In wage group (1600 - 1700)
= [1700 × 7]
= Rs. [11900]

146.(D) If 100% represents 360° in angle
 \therefore 15% will represent = $\frac{360}{100} \times 15 = 54^\circ$

147.(B) Binding and printing comprises 55% of Expenditure.

\therefore Total Expenditure = $\frac{110 \times 100}{55}$ Rs. 200

148.(D) Cost of publishing a book = Rs. 200

\therefore printing cost = Rs. $\left[\frac{200 \times 25}{100} \right]$ = Rs. 50

149.(A) 360° comprises 100%

\therefore 1 $\frac{100}{360}$

\therefore 108 $\frac{100}{360} \times 108 =$
30%

Therefore expenses A and D will form 108° at the centre.

150.(B) Average = $\frac{10 + 30 + 25 + 20 + 15}{5} = 20\%$

In given data :
B = 25%
C = 30%

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Calligraphy	The art of making beautiful handwriting	सुलेखन कला
Cartography	The process of making maps	मानचित्र कला
Choreography	The art of deciding how dancers will move in a performance	नृत्यकला
Condemn	To criticize	निंदा करना
Dissident	Disagreeing especially with an established religious	असहमत
Dissolvent	A substance that dissolves something	घुलनशील
Egotist	The feeling or belief that you are better	अहंवादी
Elaborated	Made with great care	विस्तार से बनाना
Enthusiasm	Strong excitement about something	उत्साह
Enthusiast	A person who enjoys something very much	उत्साही व्यक्ति
Epigraphy	The study of inscriptions	पुरालेखशास्त्र
Erudite	Scholar	ज्ञानी
Facsimile	An exact copy	अनुलिपि
Fanciful	Coming from the imagination	काल्पनिक
Hoarse	Having a harsh or rough sound	कर्कश
Humanitarian	A person who works to make other people's life better	परोपकारी
Humiliate	To make to feel very ashamed	नीचा दिखाना
Imposter	A person who deceives others by pretending to be someone else	बहुरूपिया
Intolerant	Not willing to allow	असहनशील
Lassitude	The condition of being tired	थकान
Lethargy	Lack of energy	सुस्ती
Lustrous	Radiant in character	उज्ज्वल
Philology	The study of language	भाषाशास्त्र
Physiology	A science that deals with the way that living things function	शरीर क्रिया विज्ञान
Psychology	The study of the mind and behaviour	मनोवृत्ति
Revere	To have great respect for	सम्माननीय
Sloppy	Not careful	लापरवाह
Stoic	A person who accepts what happens without showing emotion	विरक्त/तटस्थः
Strident	Sounding harsh and unpleasant	कर्णभेदी
Succulent	Full of juice	रसीला
Thespian	Relating to drama	नाट्य संबंधी
Translucent	Through which one cannot see completely	सम्पूर्ण पारदर्शी नहीं
Trichology	Science that specializes in hair and scalp care	केश विज्ञान
Trilogy	A series of three novels, movies etc.	रचनात्रय

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SSC CPO SI MOCK TEST – 05 (ANSWER KEY)

- | | | | | | | | |
|---------|---------|---------|----------|----------|----------|----------|----------|
| 1. (D) | 26. (C) | 51. (C) | 76. (B) | 101. (B) | 126. (C) | 151. (D) | 176. (D) |
| 2. (B) | 27. (C) | 52. (B) | 77. (A) | 102. (B) | 127. (B) | 152. (A) | 177. (C) |
| 3. (C) | 28. (B) | 53. (A) | 78. (C) | 103. (B) | 128. (C) | 153. (B) | 178. (C) |
| 4. (C) | 29. (D) | 54. (C) | 79. (A) | 104. (B) | 129. (A) | 154. (B) | 179. (C) |
| 5. (B) | 30. (C) | 55. (C) | 80. (D) | 105. (C) | 130. (B) | 155. (C) | 180. (B) |
| 6. (C) | 31. (D) | 56. (A) | 81. (A) | 106. (A) | 131. (A) | 156. (C) | 181. (B) |
| 7. (D) | 32. (A) | 57. (B) | 82. (B) | 107. (A) | 132. (A) | 157. (A) | 182. (B) |
| 8. (C) | 33. (C) | 58. (C) | 83. (C) | 108. (A) | 133. (C) | 158. (A) | 183. (C) |
| 9. (A) | 34. (C) | 59. (D) | 84. (A) | 109. (A) | 134. (A) | 159. (C) | 184. (B) |
| 10. (A) | 35. (B) | 60. (D) | 85. (A) | 110. (D) | 135. (D) | 160. (A) | 185. (A) |
| 11. (C) | 36. (D) | 61. (C) | 86. (C) | 111. (D) | 136. (D) | 161. (A) | 186. (C) |
| 12. (D) | 37. (B) | 62. (C) | 87. (B) | 112. (A) | 137. (B) | 162. (D) | 187. (D) |
| 13. (C) | 38. (C) | 63. (B) | 88. (D) | 113. (A) | 138. (B) | 163. (D) | 188. (A) |
| 14. (B) | 39. (D) | 64. (C) | 89. (B) | 114. (C) | 139. (B) | 164. (C) | 189. (A) |
| 15. (C) | 40. (C) | 65. (D) | 90. (A) | 115. (C) | 140. (D) | 165. (D) | 190. (C) |
| 16. (C) | 41. (C) | 66. (C) | 91. (B) | 116. (A) | 141. (B) | 166. (C) | 191. (C) |
| 17. (B) | 42. (B) | 67. (B) | 92. (B) | 117. (C) | 142. (C) | 167. (A) | 192. (B) |
| 18. (C) | 43. (D) | 68. (B) | 93. (C) | 118. (C) | 143. (A) | 168. (B) | 193. (A) |
| 19. (C) | 44. (A) | 69. (A) | 94. (B) | 119. (D) | 144. (A) | 169. (C) | 194. (D) |
| 20. (B) | 45. (D) | 70. (B) | 95. (C) | 120. (D) | 145. (A) | 170. (A) | 195. (B) |
| 21. (A) | 46. (C) | 71. (B) | 96. (C) | 121. (A) | 146. (D) | 171. (C) | 196. (C) |
| 22. (D) | 47. (A) | 72. (C) | 97. (D) | 122. (D) | 147. (B) | 172. (C) | 197. (B) |
| 23. (C) | 48. (C) | 73. (C) | 98. (C) | 123. (A) | 148. (D) | 173. (B) | 198. (A) |
| 24. (D) | 49. (C) | 74. (B) | 99. (A) | 124. (B) | 149. (A) | 174. (B) | 199. (D) |
| 25. (D) | 50. (C) | 75. (C) | 100. (D) | 125. (C) | 150. (B) | 175. (B) | 200. (D) |

Explanation of Questions 154–158

- | | | |
|---------------------------------|---------------------------------|-----------------------------|
| 154. Apple pie order | In perfect order | बिल्कुल ठीक /उत्तम हालत में |
| 155. A closed book | A mystery | रहस्यमय |
| 156. A month of sundays | A long time | बहुत लम्बा समय |
| 157. Back to square one | To return to the starting point | प्रारंभिक बिन्दु पर लौटना |
| 167. Blowing their own trumpets | To praise one's oneself | अपनी ही शेखी बघारना |

Explanation of Questions 188–192

- 188.(A); If past time is given, the sentence must be in simple past tense. 'Yesterday' denotes past time and hence 'have got' must be changed into 'got'.
- 189.(A); For the past 'five years' denotes period of time. Hence the sentence must be in present perfect continuous tense (has been working) and not continuous tense (is working).
- 190.(C); 'Cope with' means 'to tackle'. Remove 'up'.
- 191.(C); 'Taste' is a verb of perception that generally does not come in 'ing' form. Change 'is tasting' into 'tasted'.
- 192.(B); All the three forms of 'cast' is 'cast'. Change 'casted' into 'cast'.

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock Test.

Note:- If you face any problem regarding result or marks scored, please contact 9313111777