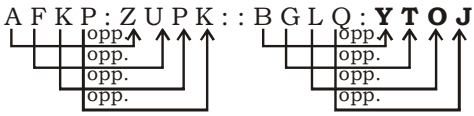
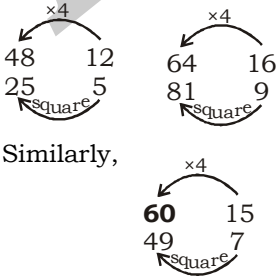
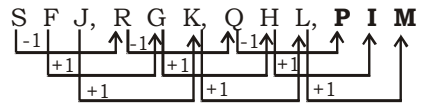
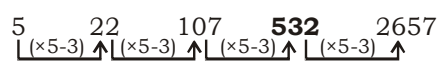
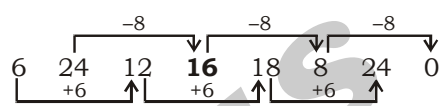
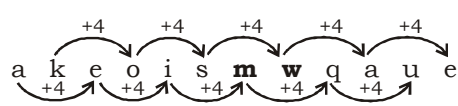
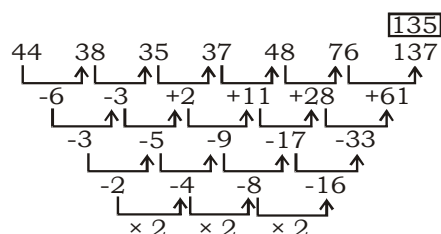


SSC CPO SI MOCK TEST – 06 (SOLUTION)

1. (B) 
2. (D) The sound produced by beer is Hum. Similarly, the sound produced by owls is 'Hoot'.
3. (C) Confirmed is related to inveterate and financial is related to bankrupt.
4. (A) Bench is a type of furniture. Similarly, pen is a type of stationery goods.
5. (C) Coal is known as Black diamond. Similarly, Petroleum is known as liquid gold.
6. (D) Poster is pasted on the wall. Similarly, photograph is kept in frame.
7. (C) Except option (C) all are related to private sector.
8. (D) Except D other are non-prime numbers.
9. (C) 49 is perfect square
10. (B) Except option (B), all are related to religion.
11. (A) Except option (A), all are carnivorous animals.
12. (A) Lakshadweep is a group of islands, whereas Tamil Nadu, Andhra Pradesh and Kerala are States.
13. (D) All others are related to educational institutions.
14. (C) (A) $73 - 61 = 12$
(B) $69 - 57 = 12$
(C) $42 - 29 = 13$
(D) $59 - 47 = 12$
15. (B) $(2 \times 5) - 3 = 7$
 $(7 \times 2) - 1 = 13$
Similarly, $(5 \times 4) - x = 15$
or, $20 - x = 15$
 $\therefore x = 20 - 15 = 5$
16. (B) 
17. (B) $(27 + 18) - (13 + 12) = 20$
 $(16 + 12) - (9 + 6) = 13$
Similarly,
 $(10 + 11) - (4 + 5) = 12$

18. (C) After interchanging the signs and numbers, the correct equation will be -
 $4 + 6 \times 2 = 16$
19. (B) $4 \frac{1}{4} = \frac{17}{4}$
20. (C) 
21. (D) 
22. (C) 
23. (A) (D) $\frac{\text{Parallelism}}{1}$ (C) $\frac{\text{Paralyse}}{2}$
(A) $\frac{\text{Paralysis}}{3}$ (B) $\frac{\text{Paralytic}}{4}$
24. (A) 3. Rabindranath Tagore - 1913
5. Sir C.V. Raman - 1930
2. Mother Teresa - 1979
1. Amartya Sen - 1998
4. Venktraman Ramakrishna - 2009
25. (D) E F G / F G E / E F G / F G E
26. (C)
27. (D) 
28. (D) 
29. (D) LOTION
30. (A) M I L I T A R Y
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
1 2 3 2 4 5 6 7
So,
L I M I T
↓ ↓ ↓ ↓ ↓ ↓
3 2 1 2 4
31. (B) @ Δ % #
32. (C) $5 + 4 + 7 + 2 = 18$
 $6 + 3 + 4 + 2 = 15$ and

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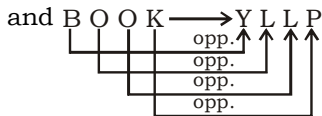
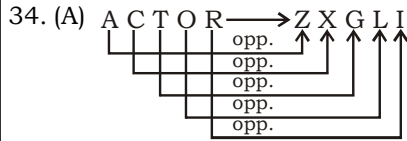
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$7 + 5 + 8 + 4 = 24$

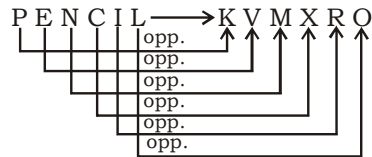
Similarly,

$9 + 2 + 3 + 6 = 20$

33. (C) # % φ @



Similarly,



35. (A) Here, 1 = \wedge , 9 = 0, 8 = Δ , 6 = $>$, 2 = +,
3 = \times , 4 = \diamond and 5 = \square

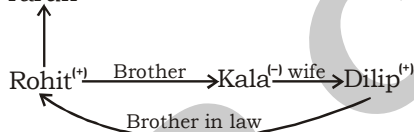
So, $\Delta > \square \times + \diamond$

\downarrow \downarrow \downarrow \downarrow \downarrow
 8 6 5 3 2 4

36. (C)

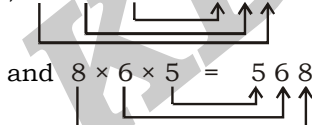
37. (D)

38. (A) Tarun^(*)



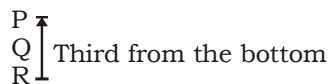
39. (C) 89517**6982198**435913**695**

40. (A) $9 \times 6 \times 2 = 269$



Similarly, $5 \times 4 \times 1 = 145$

41. (C) S



42. (C)

43. (C)

44. (C)

45. (B)

46. (B)

47. (C)

48. (D)

49. (A)

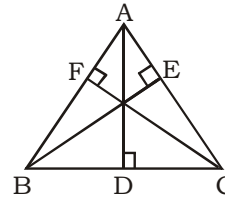
50. (C) The numerical groups of **JADE** will be -
J - 56, 68, **75**, 87, 99
A - 00, 12, 24, 31, **43**

D - 03, **10**, 22, 34, 41

E - 04, 11, **23**, 30, 42

101. (B) Straight line $4x + 3y = 12$ passes through 1st, 2nd & 4th quadrant.

102. (B)



\therefore In $\triangle ADC$,

AC is the hypotenuse, which is the longest side of triangle.

$\Rightarrow AC > AD$

Similarly, $AC > CF$

$AB > AD$

$AB > BE$

$BC > CF$

and $BC > BE$

On adding above inequalities, we have

$2(AB + BC + CA) > 2(AD + BE + CF)$

$\Rightarrow (AB + BC + CA) > (AD + BE + CF)$

103. (B) $(\angle A + \angle B) + (\angle B + \angle C) = 65^\circ + 140^\circ$

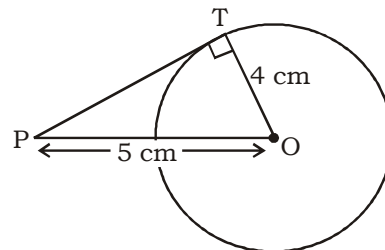
$(\angle A + \angle B + \angle C) + \angle B = 205^\circ$

$180^\circ + \angle B = 205^\circ$

$\angle B = 205^\circ - 180^\circ$

$= 25^\circ$

104. (A)



$OT = 4 \text{ cm}$

$PO = 5 \text{ cm}$

$PO^2 = PT^2 + TO^2$

$5^2 = PT^2 + 4^2$

$\Rightarrow PT = 3 \text{ cm}$

105. (B) $x \left(3 - \frac{2}{x} \right) = \frac{3}{x}$

$3x - 2 = \frac{3}{x}$

$3x - \frac{3}{x} = 2$

$$x - \frac{1}{x} = \frac{2}{3}$$

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

$$= \left(\frac{2}{3}\right)^2 + 2$$

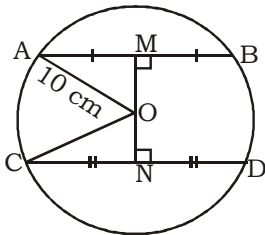
$$= \frac{4}{9} + \frac{2}{1} = \frac{22}{9} = 2\frac{4}{9}$$

106. (A) $16a^2 - 12a$

$$= (4a)^2 - 2 \cdot 4a \times \frac{3}{2} + \left(\frac{3}{2}\right)^2 = \left(4a - \frac{3}{2}\right)^2$$

$\frac{9}{4}$ must be added in $16a^2 - 12a$ to make it a perfect square.

107. (C)



Let AB & CD are two parallel chords of C(0, 10 cm).

$$AB = 12 \text{ cm} \Rightarrow AM = \frac{1}{2} \times 12 = 6 \text{ cm}$$

[perp. from centre to any chord, bisects the chord]

$$\text{Similarly } CN = \frac{1}{2} \times 16 = 8 \text{ cm}$$

$$AM^2 + OM^2 = OA^2$$

$$6^2 + OM^2 = 10^2$$

$$OM = \sqrt{100 - 36} = \sqrt{64} = 8 \text{ cm}$$

Again,

$$CN^2 + ON^2 = OC^2$$

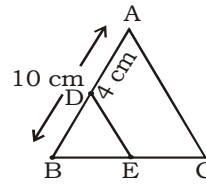
$$8^2 + ON^2 = 10^2$$

$$ON = \sqrt{100 - 36}$$

$$= \sqrt{36} = 6 \text{ cm}$$

$$\begin{aligned} \therefore \text{The distance between the chords} \\ &= MN = OM + ON \\ &= 8 + 6 \\ &= 14 \text{ cm} \end{aligned}$$

108. (D)

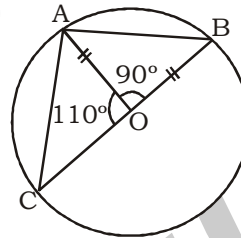


$$\begin{aligned} BD &= AB - AD \\ &= 10 - 4 = 6 \text{ cm} \end{aligned}$$

$$BD : DA = BE : EC$$

$$\Rightarrow 6 : 4 = BE : EC \Rightarrow BE : CE = 3 : 2$$

109. (B)



In $\triangle AOB$,

$$\therefore OA = OB$$

$$\Rightarrow \angle OAB = \angle OBA = 45^\circ$$

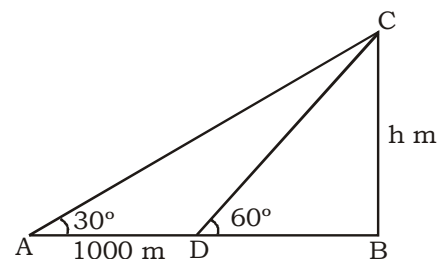
In $\triangle AOC$,

$$OA = OC$$

$$\Rightarrow \angle OAC = \angle OCA = 35^\circ$$

$$\begin{aligned} \therefore \angle BAC &= \angle OAB + \angle OAC \\ &= 45^\circ + 35^\circ = 80^\circ \end{aligned}$$

100. (A)



Let h m be the height of the balloon.

In $\triangle CBD$,

$$\tan 60^\circ = \frac{CB}{BD}$$

$$\sqrt{3} = \frac{h}{BD}$$

$$\Rightarrow BD = \frac{h}{\sqrt{3}} \text{ cm}$$

In $\triangle CBA$

$$\tan 30^\circ = \frac{CB}{BA}$$

$$\frac{1}{\sqrt{3}} = \frac{h}{BD+DA} = \frac{h}{\frac{h}{\sqrt{3}}+1000}$$

$$\Rightarrow \frac{h}{\sqrt{3}}+1000 = h\sqrt{3}$$

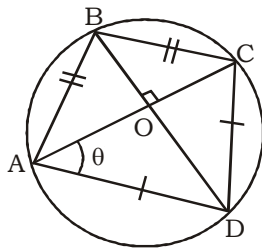
$$h\sqrt{3} - \frac{h}{\sqrt{3}} = 1000$$

$$h\left(\frac{3-1}{\sqrt{3}}\right) = 1000$$

$$h = \frac{1000\sqrt{3}}{2} = 500\sqrt{3}$$

$$= \frac{500\sqrt{3}}{1000} \text{ km} = \frac{1}{2}\sqrt{3} \text{ km}$$

111. (C)



$\angle CAD = \angle CBD$ (Angles in the same segment of a circle)

$$\therefore \angle CBD = \theta$$

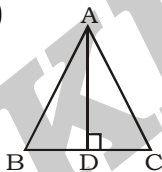
Now, $\triangle AOB \cong \triangle COB$ (by RHS)

$$\therefore \angle ABO = \angle CBO \text{ (by CPCT)}$$

$$\angle ABO = \angle CBD = \theta$$

$$\therefore \angle ABC = \angle ABO + \angle CBO = 2\theta$$

112. (C)



Let $\triangle ABC$ is equilateral & AD is its height.

Let 'a' unit is the side of the $\triangle ABC$.

$$\Rightarrow AB = a \text{ \& } BD = \frac{a}{2}$$

$$\text{height AD} = \sqrt{AB^2 - BD^2}$$

$$15 = \sqrt{a^2 - \frac{a^2}{4}}$$

$$15 = \frac{\sqrt{3}}{2}a$$

$$\Rightarrow a = \frac{15 \times 2}{\sqrt{3}} \text{ cm}$$

$$\text{Hence BC} = \frac{30}{\sqrt{3}} = \frac{10\sqrt{3} \times \sqrt{3}}{\sqrt{3}} = 10\sqrt{3} \text{ cm}$$

$$\begin{aligned} \text{Area of } \triangle ABC &= \frac{\sqrt{3}}{4} \times a^2 \\ &= \frac{\sqrt{3}}{4} \times 10\sqrt{3} \times 10\sqrt{3} \\ &= 75\sqrt{3} \text{ cm}^2. \end{aligned}$$

113. (A) Work done by Ram & Shyam in 1 day

$$= \frac{1}{12}$$

Work done by Shyam & Hari in 1 day

$$= \frac{1}{15}$$

Work done by Hari & Ram in 1 day

$$= \frac{1}{20}$$

Work done by 2[Ram + Shyam + Hari]

$$= \frac{1}{12} + \frac{1}{15} + \frac{1}{20}$$

$$= \frac{5+4+3}{60} = \frac{12}{60} = \frac{1}{5}$$

Work done by (Ram + Shyam + Hari)

$$\text{in 1 day} = \frac{1}{10}$$

Work done by Ram alone in 1 day

$$= \frac{1}{5} - \frac{1}{10}$$

$$= \frac{3-2}{30} = \frac{1}{30}$$

\therefore Ram can do the whole work in 30 days.

114. (A) 3 men = 5 women

$$\Rightarrow 1 \text{ man} = \frac{5}{3} \text{ women}$$

$$\therefore 6 \text{ men} = \frac{5}{3} \times 6 = 10 \text{ women}$$

6 men + 5 women = (10 + 5) women

\therefore 5 women complete a work in 15 days.

\therefore 1 woman completes a work in 15×5

$$\begin{aligned} \therefore 15 \text{ women complete a work in } &\frac{15 \times 5}{15} \\ &= 5 \text{ days} \end{aligned}$$

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115. (C) Work done by (A + B) in 1 day = $\frac{1}{12}$

Work done by (B + C) in 1 day = $\frac{1}{15}$

Work done by (C + A) in 1 day = $\frac{1}{20}$

Work done by 2(A + B + C) in 1 day

$$= \frac{1}{12} + \frac{1}{15} + \frac{1}{20}$$

$$= \frac{5+4+3}{60} = \frac{12}{60} = \frac{1}{5}$$

Work done by (A + B + C) in 1 day

$$= \frac{1}{5 \times 2} = \frac{1}{10}$$

Work done by A alone in 1 day

$$= \frac{1}{10} - \frac{1}{15} = \frac{3-2}{30} = \frac{1}{30}$$

Hence A can complete the work alone in 30 days.

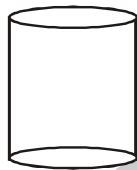
116. (A) Perimeter - Diameter = X

$$2\pi r - 2r = X$$

$$2r(\pi - 1) = X$$

$$2r = \frac{X}{\pi - 1}$$

117. (D)



$$2\pi r = a$$

$$r = \frac{a}{2\pi}$$

$$\text{Volume} = V$$

$$\pi r^2 h = V$$

$$\pi \times \frac{a^2}{4\pi^2} h = V$$

$$\Rightarrow h = \frac{4\pi V}{a^2}$$

118. (D) 4th root of 24010000

$$= (24010000)^{\frac{1}{4}}$$

$$= (7 \times 7 \times 7 \times 7 \times 10 \times 10 \times 10 \times 10)^{\frac{1}{4}}$$

$$= 7 \times 10 = 70$$

119. (C) Greatest 4-digit number = 9999

$$\begin{array}{r} 99 \\ \hline 9 \ 9999 \\ 9 \ 81 \\ \hline 189 \ 1899 \\ \quad 1701 \\ \hline \quad \quad 198 \end{array}$$

Greatest 4-digit perfect square number

$$= 9999 - 198$$

$$= 9801$$

120. (A) MP = Rs. x (say)

$$\text{SP} = 90\% \text{ of } x = \text{Rs. } \frac{9x}{10}$$

$$\% \text{ profit} = 12\%$$

$$\text{CP} = \frac{\text{SP} \times 100}{100 + 12\%}$$

$$= \frac{\frac{9x}{10} \times 100}{112} = \frac{90x}{112}$$

$$\text{Now, } \frac{\text{CP}}{\text{MP}} = \frac{112}{x} = \frac{45}{56}$$

121. (D) MP = Rs. 160

$$\text{SP after two successive discounts} = \text{Rs. } 122.40$$

$$\text{Ist discount} = 10\%$$

ATQ,

$$160 \left(\frac{100-10}{100} \right) \left(\frac{100-y}{100} \right) = \text{Rs. } 122.40$$

$$160 \times \frac{90}{100} \times \frac{100-y}{100} = \text{Rs. } 122.40$$

$$(100-y) = \frac{122.40 \times 100 \times 100}{90 \times 160}$$

$$= 85$$

$$\therefore y = 100 - 85 = 15$$

$$\text{2nd discount} = 15\%$$

122. (B) Let 'g' stands for the no. of girls & 'b' stands for the no. of boys

$$10\% \text{ of } g = \frac{1}{20} \text{ of } b$$

$$\Rightarrow \frac{10}{100} \times g = \frac{1}{20} \times b$$

$$\Rightarrow \frac{b}{g} = \frac{10 \times 20}{100} = \frac{2}{1}$$

$$\Rightarrow b : g = 2 : 1$$

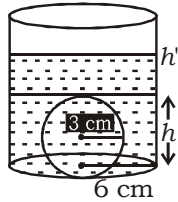
123. (D) $(25)^{2.5} : (5)^3$

$$\Rightarrow (5^2)^{2.5} : 5^3$$

$$\Rightarrow 5^5 : 5^3$$

$$\Rightarrow 25 : 1$$

124. (B)



$$\begin{aligned} r_s &= 3\text{ cm} \quad [r_s \rightarrow \text{rad. of sphere}] \\ r_c &= 6\text{ cm} \quad [r_c \rightarrow \text{rad. of cylinder}] \end{aligned}$$

Volume of the water raised in the cylinder

$$= \text{Vol. of the sphere}$$

$$= \pi r_c^2 h' = \frac{4}{3} \pi r_s^3$$

$$= \pi \times 6^2 \times h' = \frac{4}{3} \pi \times 3^3$$

$$h' = \frac{4\pi \times 27}{\pi \times 3 \times 6^2}$$

$$= \frac{4 \times 27}{3 \times 36} = 1$$

$$h' = 1 \text{ cm}$$

125. (C) Let the CP of the article = Rs. x

$$\text{the MP of the article} = \text{Rs. } \frac{120x}{100}$$

$$\text{SP after 15\% discount} = 85\% \text{ of}$$

$$\frac{120x}{100}$$

$$= \text{Rs. } \frac{102x}{100}$$

$$\text{Gain} = \frac{102x}{100} - x = \frac{2x}{100}$$

$$\% \text{ gain} = \frac{\frac{2x}{100} \times 100}{x} = 2\%$$

126. (C) Let the CP of the article = Rs. x

$$\text{SP at 20\% loss} = 80\% \text{ of } x$$

$$= \text{Rs. } \frac{4x}{5}$$

$$\text{New SP} = \text{Rs. } \left(\frac{4x}{5} + 100 \right)$$

$$\% \text{ gain} = 5\%$$

$$\text{SP} = 105\% \text{ of } x = \frac{105x}{100}$$

ATQ,

$$\frac{4x}{5} + 100 = \frac{105x}{100}$$

$$\Rightarrow \frac{21x}{20} - \frac{4x}{5} = 100$$

$$\Rightarrow \frac{21x - 16x}{20} = 100$$

$$5x = 100 \times 20$$

$$x = \frac{100 \times 20}{5} = \text{Rs. } 400$$

$$\text{CP} = \text{Rs. } 400$$

127. (C) Let the original price of the article = Rs. x

Then,

$$\frac{x(100 - 20)(100 + 30)}{100 \times 100} = 416$$

$$x = \frac{416 \times 100 \times 100}{80 \times 130} = \text{Rs. } 400$$

128. (B) Total journey covered by the man = x km

(say)

$$\text{Journey by train} = \frac{2}{15}x \text{ \& by bus} =$$

$$\frac{9}{20}x$$

Remaining journey

$$= x - \left(\frac{2}{15}x + \frac{9}{20}x \right)$$

$$10 = x - \left(\frac{8x + 27x}{60} \right)$$

$$= \frac{60x - 35x}{60}$$

$$\frac{10}{1} = \frac{25x}{60}$$

$$x = \frac{60 \times 10}{25} = 24 \text{ km}$$

129. (D) Let the usual speed of the man = x m/min

Let the distance of his office

= y m/min

$$\text{New Speed} = \frac{3}{4}x \text{ m/min}$$

ATQ,

$$\frac{y}{\frac{3}{4}x} - \frac{y}{x} = 20$$

$$\frac{y}{x} \left[\frac{4}{3} - 1 \right] = 20$$

$$\frac{y}{x} = 20 \times 3 = 60$$

Usual time = $\frac{\text{distance}}{\text{speed}} = \frac{y}{x} = 60 \text{ min}$

130. (D) a, b, c, d, e are consecutive odd numbers.

$\therefore b = a + 2, c = a + 2 + 2 = a + 4$
 $d = a + 2 + 2 + 2 = a + 6$
 $e = a + 8$

$$\begin{aligned} \text{Average} &= \frac{a+b+c+d+e}{5} \\ &= \frac{a+(a+2)+(a+4)+(a+6)+(a+8)}{5} \\ &= \frac{5a+20}{5} = a+4 \end{aligned}$$

131. (A) Sum of 20 numbers = $20 \times 15 = 300$
 Sum of 1st five numbers = $12 \times 5 = 60$

Average of the rest = $\frac{300-60}{15} = \frac{240}{15} = 16$

132. (C) $\frac{a}{1-a} + \frac{b}{1-b} + \frac{c}{1-c} = 1$

$$\frac{a}{1-a} + 1 + \frac{b}{1-b} + 1 + \frac{c}{1-c} + 1 = 4$$

$$\frac{a-1-a}{1-a} + \frac{b+1-b}{1-b} + \frac{c+1-c}{1-c} = 4$$

$$\frac{1}{1-a} + \frac{1}{1-b} + \frac{1}{1-c} = 4$$

133. (C) $(x-3)^2 + (y-5)^2 + (z-4)^2 =$
 The above equality is possible only when

$$\begin{aligned} x-3 &= 0, y-5 = 0 \text{ \& } z-4 = 0 \\ \Rightarrow x &= 3, y = 5, z = 4 \end{aligned}$$

Now,

$$\begin{aligned} \frac{x^2}{9} + \frac{y^2}{25} + \frac{z^2}{16} \\ = \frac{9}{9} + \frac{25}{25} + \frac{16}{16} = 3 \end{aligned}$$

134. (C) $\frac{4x}{3} + 2P = 12$

$$\Rightarrow \frac{4 \times 6}{3} + 2P = 12$$

$$\Rightarrow 2P = 4$$

$$\therefore P = 2$$

135. (A) $\frac{4+3\sqrt{3}}{7+4\sqrt{3}} \cdot \frac{4(7-4\sqrt{3})+3\sqrt{3}(7-4\sqrt{3})}{49-48}$

$$= 28 - 16\sqrt{3} + 21\sqrt{3} - 36$$

$$= -8 + 5\sqrt{3}$$

136. (A) CI = $P \left[\left(1 + \frac{12}{100} \right)^2 - 1 \right]$

$$\begin{aligned} 2544 &= P \left[\left(\frac{28}{25} \right)^2 - 1 \right] \\ &= \frac{2544 \times 25 \times 25}{(28+25)(28-25)} \\ &= \text{Rs. } 10000 \end{aligned}$$

$$\begin{aligned} \text{SI} &= \frac{P \times R \times T}{100} \\ &= \frac{10000 \times 12 \times 2}{100} \\ &= \text{Rs. } 2400 \end{aligned}$$

137. (A) Let the cost of one bucket & one mug = Rs. x & Rs. y respectively.

Then,

$$8x + 5y = 92$$

$$\& \quad 5x + 8y = 77$$

By cross multiplication.

$$x = \frac{5 \times 77 - 8 \times 92}{8 \times 8 - 5 \times 5}$$

$$= \frac{-385 + 736}{64 - 25}$$

$$= \frac{351}{39} = 9$$

$$y = \frac{-92 \times 5 - (-77) \times 8}{8 \times 8 - 5 \times 5}$$

$$= \frac{-460 + 616}{39}$$

$$= \frac{156}{39} = 4$$

Cost of 2 mugs + 3 buckets

$$= 2 \times 4 + 3 \times 9$$

$$= 8 + 27 = \text{Rs. } 35$$

138. (A) $(\tan\theta + \cot\theta)^2 = 2^2$

$$\tan^2\theta + \cot^2\theta + 2\tan\theta\cot\theta = 4$$

$$\Rightarrow \tan^2\theta + \cot^2\theta + 2 = 4$$

$$\Rightarrow \tan^2\theta + \cot^2\theta = 2$$

139. (A) $\therefore x \cos\theta - y \sin\theta = 2 \quad \dots(i)$

$$x \sin\theta + y \cos\theta = 4 \quad \dots(ii)$$

On squaring and adding (i) and (ii), we have

$$(x \cos\theta - y \sin\theta)^2 + (x \sin\theta + y \cos\theta)^2 = 2^2 + 4^2$$

$$\Rightarrow x^2 \cos^2\theta + y^2 \sin^2\theta - 2xy \cos\theta \sin\theta$$

$$+ x^2 \sin^2 \theta + y^2 \cos^2 \theta + 2xy \cos \theta \sin \theta = 4 + 16$$

$$\Rightarrow x^2(\cos^2 \theta + \sin^2 \theta) + y^2(\sin^2 \theta + \cos^2 \theta) = 20$$

$$\Rightarrow x^2 + y^2 = 20$$

140. (D) $\sin^2 \theta - 3 \sin \theta + 2 = 0$

$$\Rightarrow \sin^2 \theta - 2 \sin \theta - \sin \theta + 2 = 0$$

$$\sin \theta(\sin \theta - 2) - 1(\sin \theta - 2) = 0$$

$$\Rightarrow (\sin \theta - 1)(\sin \theta - 2) = 0$$

$$\Rightarrow \sin \theta = 1, 2$$

Hence $\theta = 90^\circ$

141. (C)
$$\left[\frac{\cos^2 A(\sin A + \cos A)}{\operatorname{cosec}^2 A(\sin A - \cos A)} + \frac{\sin^2 A(\sin A - \cos A)}{\sec^2 A(\sin A + \cos A)} \right] \times [\sec^2 A - \operatorname{cosec}^2 A]$$

$$= \left[\frac{\cos^2 A(\sin A + \cos A)}{\operatorname{cosec}^2 A(\sin A - \cos A)} + \frac{\cos^2 A(\sin A - \cos A)}{\operatorname{cosec}^2 A(\sin A + \cos A)} \right] \times [\sec^2 A - \operatorname{cosec}^2 A]$$

$$= \frac{\cos^2 A}{\operatorname{cosec}^2 A} \left[\frac{(\sin A + \cos A)^2 + (\sin A - \cos A)^2}{\sin^2 A - \cos^2 A} \right] \times$$

$$\left[\frac{1}{\cos^2 A} - \frac{1}{\sin^2 A} \right]$$

$$= \frac{\cos^2 A}{\operatorname{cosec}^2 A} \left[\frac{2(\sin^2 A + \cos^2 A)}{\sin^2 A - \cos^2 A} \right] \left[\frac{\sin^2 A - \cos^2 A}{\sin^2 A \cos^2 A} \right]$$

$$= \frac{2}{\cos^2 A} \times \frac{1}{\sin^2 A} = 2 \times \frac{1}{1} = 2$$

142. (D) $3 \cos 80^\circ \operatorname{cosec} 10^\circ + 2 \cos 59^\circ \cdot \operatorname{cosec} 31^\circ$

$$3 \cos(90^\circ - 10^\circ) (\operatorname{cosec} 10^\circ + 2 \cos(90^\circ - 31^\circ) \operatorname{cosec} 31^\circ)$$

$$3 \sin 10^\circ \operatorname{cosec} 10^\circ + 2 \sin 31^\circ \times \operatorname{cosec} 31^\circ$$

$$= 3 + 2 = 5$$

143. (C) $\pi \text{ rad} = 180^\circ$

$$1 \text{ rad} = \frac{180}{\pi}$$

$$\therefore \frac{3\pi}{5} \text{ rad} = \frac{180}{\pi} \times \frac{3\pi}{5} = 108^\circ$$

144. (D) No. of students passed in 1st division in 2008 = 20

Total students = 170

$$\% \text{ passed} = \frac{20}{170} \times 100$$

$$= \frac{200}{17} \% = 11 \frac{13}{17} \%$$

145. (D) % pass students in 2008

$$= \frac{140}{170} \times 100$$

$$= 82 \frac{6}{17} \%$$

146. (A) % of pass students in 2009

$$= \frac{140}{190} \times 100$$

$$= 73.68 \%$$

% of pass students in 2008

$$= 82.35 \%$$

% of pass students in 2010

$$= \frac{160}{200} \times 100 = 80 \%$$

\therefore In 2008 % of pass students is highest.

147. (C) No. of students pass in 3rd division in 2008 = 60

148. (A) No. of students in 2nd division in 2010 = 60

% of students passed in 2nd division

$$= \frac{60}{200} \times 100 = 30 \%$$

149. (A) Cost of labour = $\frac{115.2}{360} \times 96000 = \text{Rs.}$

30720

150. (D) Cost of material = $\frac{144}{360} \times 96000$

= Rs. 38400

Cost of direct expense = $\frac{43.2}{360} \times 96000$

= Rs. 11520

Difference = 38400 - 11520 = Rs. 26880

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Acrophobia	Fear of height	ऊँचाई से डर
Agoraphobia	Fear of open space	खुले स्थान का डर
Ammunition	The objects that are shot from weapons	गोला-बारूद
Animistic	Belief in existence of spirits	आत्माओं के होने पर विश्वास
Apathy	Indifference	बेपरवाह
Apparition	A ghostly appearing things	प्रेत
Artlessness	Lacking art or skill	अकुशलता
Baleful	Harmful or deadly	खतरनाक
Connoisseur	An expert in fine art	कदरदान
Dilettante	Dabbler/A person whose interest in an art is not very deep or serious	नौसिखुआ
Esteem	Respect	सम्मान
Evince	Express/to show clearly	स्पष्ट दिखाना
Frugal	Economical	अल्पव्ययी
Garish	Flashy /showy	भड़कीला
Gaudy	Garish/showy	भड़कीला
Haste	Hurry	जल्दबाजी
Heir	Inheritor	वारिस
Hydrophobia	Fear of water	पानी से डर
Immanent	Inherent/indwelling	अंतर्निहित/सर्वव्यापी
Intimidating	Daunting	भयभीत करने वाला
Maestro	An artist of consummate skill	उस्ताद
Narcotic	A drug that affects the brain	नशीली दवा
Pedigree	The origin and the history of something	नस्ल
Progeny	Immediate descendants of a person	वंश
Pyrophobia	Fear of fire	आग से डर
Quack	Medically unqualified	झोलाछाप डॉक्टर
Reincarnation	Rebirth	पुनर्जन्म
Reliability	Dependability	विश्वसनीय
Sporadic	Irregular	रुक-रुक कर
Spurious	Unauthentic	नकली
Sumptuous	Luxury	शानदार
Trivial	Superficial	मामूली
Vagary	An erratic, unpredictable or extravagant action or notion	मौज/सनक
Vital	Critical	महत्वपूर्ण

