SSC CHSL QUIZ FOR QUANT

S1. Ans.(b)

Sol. Perimeter of the rectangle park= Distance covered by the cyclist in 8 minutes

$= 12 \times \frac{8}{60}$

$= \frac{8}{5}$ km $= \frac{8}{5} \times 1000$ m

$= 1600$ m

Length : Breadth = 3 : 2

$2(3x + 2x) = 1600$ m

$5x = 800$ m

$x = 160$ m

Length $= 3 \times 160 = 480$ m

Breadth $= 2 \times 160 = 320$ m

Area of Park $= 480 \times 320 = 153600$ m^2

S2. Ans.(b)

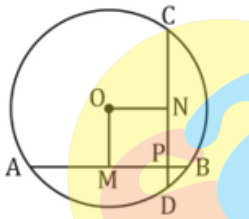
Sol.

Perimeter of Rectangle $= 2(36 + 21) = 2 \times (57) = 114$

Number of Poles Required $= \frac{114}{3} = 38$

S3. Ans.(a)

Sol.



AP = 6, PB = 4, DP = 3

AP × PB = CP × DP

6 × 4 = C.P × 3

CP = 8

From center O draw perpendicular to chords CD & AB

AB = 6 + 4 = 10

AM = MB = 5

MP = 6 – 5 = 1

ON = MP = 1

CD = 11 cm

CN = 5.5 cm

$ON^2 + CN^2 = OC$

$1^2 + (5.5)^2 = r^2$

$r^2 = 1 + 30.25$

$r^2 = 31.25$

Area of circle $= \pi r^2 = 31.25\pi = \frac{3125}{100}\pi = \frac{125}{4}\pi$

S4. Ans.(a)
Sol.

Area the Path $= \pi(42^2 - 35^2)\ m^2 = \pi\ (7)\ (42 + 35) = \frac{22}{7} \times 7 \times 77$

$= 1694\ m^2$

S5. Ans.(c)
Sol.

Perimeter of circle $\Rightarrow 2\pi r$

$= 2 \times \frac{22}{7} \times 56$

$= 2 \times 22 \times 8$

$= 352$ cm

Perimeter of Square = 352

4a = 352

a = 88

Area of Square = $a^2 = (88)^2 = 7744\ cm^2$

S6. Ans.(c)
Sol.

Area of Remaining portion

$= 6 \times 12 - \pi\ (1)^2 - \pi\ (1)^2 - \pi(0.5)^2$

$= 72 - 3.14 - 3.14 - 0.785$

$= 72 - 7.065$

$= 64.93\ m^2$

S7. Ans.(a)
Sol.

Volume of Square $= \pi r^2 h$

$\frac{1}{3}\pi r_1^2 h_1 = \pi \times (21)^2 \times 36$

$\frac{1}{3} \times (r)^2 \times 12 = 441 \times 36$

$r^2 = 441 \times 9$

$r = 21 \times 3 = 63$ cm

S8. Ans.(c)
Sol.

volume of box = $(48 - 8 - 8) \times (36 - 8 - 8) \times 8 = 32 \times 20 \times 8$

$= 640 \times 8 = 5120\ cm^3$

S9. Ans.(d)
Sol.

capacity of cylindrical tank = 246.4 Liters= $246400\ cm^3$

$\pi\ r^2 h = 246400$

$\frac{22}{7} \times r^2 \times 400 = 246400$

$r^2 = \frac{2464 \times 7}{88}$

$r^2 = 28 \times 7$ cm

$r = 2 \times 7$

$r = 14$ cm

Diameter = $14 \times 2 = 28$ cm= 0.28 m

S10. Ans.(a)

Sol.

TSA of Pyramid= $\frac{1}{2}$ × (perimeter of base) × l + Area of base.

= $\frac{1}{2}$ × 4 × 16 × 17 + $(16)^2$

= 544 + 256 = 800 cm^2

S11. Ans.(d)

Sol.

A → 75% → $\frac{3}{4}$ work → 18 days

1 work → 24 days

B → 25% → $\frac{1th}{4}$ work → 12 days

1 work → 48 days

A 24 2

48

B 48 1

75% of work = $\frac{3}{4}$ × 48

= 36

A + B, will complete 36 work in = $\frac{36}{3}$ = 12 days

S12. Ans.(b)

Sol.

Area of 4 walls of cuboid = 57 m^2

2(l + b) × h = 57

2 (l + b) × 3 = 57

5.5 + b = $\frac{19}{2}$

5.5 + b = 9.5

b = 4 cm

S13. Ans.(b)

Sol.

Discount % = 30%

= $\frac{30}{100} = \frac{3}{10}$ → Discount

→ Original

(10 – 3)r = 1050

7r → 1050

1r → 150

10r → 1500

S.P at 15% discount

= $1500 \times \frac{17}{20}$

= 1275 Rs.

S14. Ans.(c)

Sol.

Fourth Proportion → x

$$\frac{336}{288} = \frac{161}{x}$$

$$x = \frac{161 \times 288}{336}$$

$$x = 138$$

S15. Ans.(b)

Sol.

First number divisible by 8 ⇒ 16

Last number divisible by 8 → 88

88 = 16 + (n − 1) 8

72 = (n − 1) 8

9 = n − 1

n = 10

Sum = $\frac{10}{2}$ [2 × 16 + (10 − 1) × 8]

= 5 [32 + 72]

= 520

Average = $\frac{520}{10}$ = 52

S16. Ans.(a)

Sol.

Using Alligation

15% 8%

12%

4 : 3

Quantity sold at 8%

$= 630 \times \frac{3}{7}$

= 270

S17. Ans.(d)

Sol.

50% of a = b

$\frac{1}{2}a = b$

b% of 40 = $\frac{a}{200} \times 40$

= 0.2a

S18. Ans.(c)

Sol.

Speed including stoppages = 50 km/hr

Distance travelled in 1 hour = 50 km

Time taken by train to travel 50 km at 120 km/hr

$= \frac{50}{120}$

$= \frac{5}{12} \times 60$ minutes

= 25 minutes

Train stopped per hour

= 60 – 25

= 35 minutes

S19. Ans.(c)

Sol.

	S.I	C.I
1st year	2000	2000
2nd year	2000	2180

Rate % $\Rightarrow \frac{180}{2000} \times 100$

= 9%

S20. Ans.(a)

Sol.

$$\frac{2x}{3} - \frac{5}{2}\left(\frac{4x}{5} - \frac{4}{3}\right) = \frac{1}{3}$$

$$\frac{2x}{3} - 2x + \frac{10}{3} = \frac{1}{3}$$

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

$$x = \frac{9}{4}$$

S21. Ans.(b)

Sol.

Let the third proportional to 12 and 30 be x.

Then,

12 : 30 : : 30 : x

$\Rightarrow 12x = 30 \times 30$

$\Rightarrow x = \frac{(30 \times 30)}{12} = 75$

$\therefore$ Third proportional to 12 and 30 = 75

Mena proportional between 9 and 25 $= \sqrt{9 \times 25} = 15$

$\therefore$ Required ratio = 75 : 15 = 5 : 1

S22. Ans.(d)
Sol.
Duplicate ratio of 2a : 6b =
$(2a)^2 : (6b)^2 = 4a^2 : 36b^2 = a^2 : 9b^2$
Reciprocal ratio of $4a^2 : 25b^2$
$= \frac{1}{4a^2} : \frac{1}{25b^2} = 25b^2 : 4a^2$
$\therefore$ Required product $= \frac{a^2}{9b^2} \times \frac{25b^2}{4ba^2} = \frac{25}{36}$

S23. Ans.(b)
Sol.
Let the two numbers be x and y
Then,
$\sqrt{xy} = 12$ and x : y : : y : 324
$\Rightarrow xy = (12)^2 = 144$ and $y^2 = 324x$
$\Rightarrow x = \frac{144}{y}$ and $y^2 = 324 \times \frac{144}{y}$
$\Rightarrow y^3 = 324 \times 144 = (6 \times 3 \times 2)^3 \Rightarrow y = 6 \times 3 \times 2 = 36$
$\Rightarrow x = \frac{144}{36} = 4$
Hence, the two numbers are 4 and 36.

S24. Ans.(b)
Sol.
A : B : C = 8 : 14 : 22,
B : C : D = 21 : 33 : 44
$= \left(21 \times \frac{2}{3}\right) : \left(33 \times \frac{2}{3}\right) : \left(44 \times \frac{2}{3}\right) = 14 : 22 : \frac{88}{3}$
$\therefore$ A : B : C : D = 8 : 14 : 22 : $\frac{88}{3}$ = 24 : 42 : 66 : 88
= 12 : 21 : 33 : 44

S25. Ans.(b)
Sol.
Let the numbers be x and y.
Then, y – 30% of x
$= \frac{4}{5}y \Rightarrow y - \frac{4}{5}y = \frac{30}{100}x \Rightarrow \frac{y}{5} = \frac{3x}{10}$
$\Rightarrow \frac{x}{y} = \frac{1}{5} \times \frac{10}{3} = \frac{2}{3} \Rightarrow x : y = 2 : 3$

S26. Ans.(b)
Sol.
Ratio of amount invested
= 175000 : 2,25,000
= 7 : 9
According to the question,
9r → 9000
1r → 1000
Total profit = 16r
⇒ 16,000

S27. Ans.(c)

Sol.

Ratio of investment

R : N

= 40,000 : 75,000

= 8 : 15

Share of Nishita in dividend,

$= \frac{46,000}{23} \times 15$

= Rs. 30,000

S28. Ans.(d)

Sol.

Ratio of investment

Avinash : Jitendra

= (25,000 × 2) : (30,000 × 1)

= 50 : 30

= 5 : 3

Avinash profit $= \frac{46,000}{8} \times 5$

= Rs. 28,750

S29. Ans.(a)

Sol.

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

Dividing by 2 both side

$x + \frac{1}{8x} = \frac{1}{2}$

Squaring both side

$x^2 + \frac{1}{64x^2} + 2 \times x \times \frac{1}{8x} = \frac{1}{4}$

$x^2 + \frac{1}{64x^2} = \frac{1}{4} - \frac{1}{4} = 0$

S30. Ans.(b)

Sol.

$\sqrt{x} - \sqrt{y} = 1$ ... (i)

$\sqrt{x} + \sqrt{y} = 17$ ... (ii)

From equation (i) & equation (ii)

$\sqrt{x} = 9, \sqrt{y} = 8$

So, $\sqrt{xy} = 9 \times 8 = 72$