# SSC CGL (Held On 9 Dec 2022 Shift 3) Math Paper

## Question No. 1

Monty paid a simple interest of Rs. 480 on a particular sum after 2 years. The rate was 8% per annum. Find the sum.

Rs. 2,200

Rs. 2,000

✓ Rs. 3,000

Rs. 2,500

## Question No. 2

The curved surface area of a right circular cone of a base radius of 21 cm is 5940 sq. cm. What is the slant height of the cone?

95 cm

81 cm

✓ 90 cm

60 cm

## Question No. 3

If it is given that for two right angled triangles ABC and DFE, $\angle A = 25°$, $\angle E = 25°$, $\angle B = \angle F = 90°$ and AC = ED, then which one of the following is TRUE?

$\Delta ABC \cong \Delta FED$

$\Delta ABC \cong \Delta DFE$

✓ $\Delta ABC \cong \Delta EFD$

$\Delta ABC \cong \Delta DEF$

## Question No. 4

The HCF of $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}$ and $\frac{7}{8}$ is:

$\frac{105}{2}$

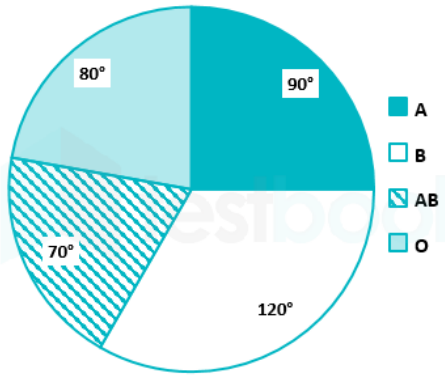
✓ $\frac{1}{24}$

$\frac{7}{24}$

$\frac{1}{48}$

## Question No. 5

## Question No. 6




The ratio of the number of donors of blood group 'O' to the average of the number of donors of blood groups 'A' and 'AB' together is:

2 : 3

✓ 1 : 1

2 : 1

1 : 2

Question No. 7

Abha and Anuj working together completed a job in $\frac{40}{9}$ days. If Abha had worked twice as efficiently as she actually did and Anuj had worked $\frac{1}{3}$ of his actual efficiency, then the work would have been completed in $\frac{60}{17}$ days. Find the time Abha would take to complete the work alone

10 days

✓ 8 days

12 days

6 days

Question No. 8

If $p - \frac{1}{p} = 6$, then what is the value of $p^4 + \frac{1}{p^4}$?

1562

1432

✓ 1442

1444

Question No. 9

In a 7-digit number 89476*2, what is the smallest possible value of * such that the number is divisible by 8?

2

1

4

✓ 3

Question No. 10

A megastore is offering 20% discount on all grocery items. Sakshi bought one grocery item marked at Rs. 400. What is its cost price if the store earned a profit of 25% after giving the discount?

✓ Rs. 256

Rs. 280

Rs. 380

Rs. 320

Question No. 11

Simplify $x^4 - 15x^3 + 15x^2 - 15x + 40$; given x = 14.

0

40

14

✓ 26

Question No. 12

If $\Delta ABC \cong \Delta PQR$, BC = 6cm, and $\angle A = 75^o$, then which one of the following is true?

$QR = 6cm, \angle R = 75^o$

$QR = 6cm, \angle Q = 75^o$

✓ $QR = 6cm, \angle P = 75^o$

$PR = 6cm, \angle P = 75^o$

Question No. 13

A thief running at speed of 'x' km/h is chased by a policeman running at a speed of 10 km/h. If the thief is ahead by 100 metres, the policeman catches the thief after 3 minutes. At what speed is the thief running ('x' being the unknown speed)?

4 km/h

✓ 8 km/h

10 km/h

6 km/h

Question No. 14

A person covers a certain distance by bus at 45 km/h and immediately returns to the starting point by car at a speed of 80 km/h. What is his average speed during the whole journey?

✓ 57.6 km/h

63.2 km/h

73.5 km/h

45.5 km/h

Question No. 15

The table given below shows the cost of two fruits in five different shops.

| | Fruits | |
|---|---|---|
| **Shops** | **A** | **B** |
| P | 75 | 140 |
| Q | 120 | 90 |
| R | 50 | 35 |
| S | 70 | 85 |
| T | 95 | 96 |

What is the difference between the cost of fruits A and B in all five shops together?

24

✓ 36

20

48

Question No. 16

If $\sin\theta = \frac{8}{17}$ where $\theta$ is an acute angle, then what is the value of $\tan\theta + \cot\theta$?

$\frac{217}{110}$

$\frac{281}{190}$

✓ $\frac{289}{120}$

$\frac{512}{321}$

Question No. 17

In a certain shop, the profit is 130% of the cost. If the cost increases by 28% and the selling price remains constant, then what is the profit percentage to the nearest whole number?

75%

60%

59%

✓ 80%

Question No. 18

The table given below shows the number of boys and girls in a school in 6 years.

| Years | Boys | Girls |
|---|---|---|
| A | 80 | 70 |
| B | 60 | 50 |
| C | 120 | 100 |
| D | 100 | 140 |
| E | 160 | 40 |
| F | 90 | 80 |

What is the ratio of number of boys in year A and C together to the number of girls in year E and F together?

7 : 2

7 : 3

✓ 5 : 3

5 : 2

Question No. 19

If $\sin^2\theta\cos^2\theta = \frac{2}{9}$, then what will be the value of $\text{cosec}^2\theta + \sec^2\theta$?

7/2

5/2

✓ 9/2

$9\sqrt{2}$

Question No. 20

The side of an equilateral triangle is 36 cm. What is the radius of the circle circumscribing this equilateral triangle?

$13\sqrt{3}$ cm

$10\sqrt{3}$ cm

✓ $12\sqrt{3}$ cm

$9\sqrt{3}$ cm

Question No. 21

The value of $\frac{146\times146\times146-143\times143\times143}{146\times146+143\times143+146\times143}$ is:

0

✓ 3

289

1

Question No. 22

If $2\frac{\cos^2 x-\sec^2 x}{\tan^2 x} = a + b\cos 2x$, then a, b = ?

$\frac{-3}{2}, \frac{-1}{2}$

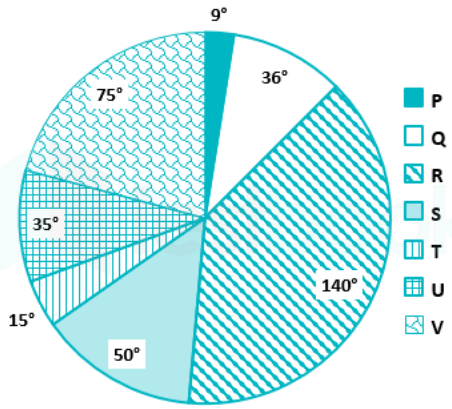
$\frac{3}{2}, \frac{1}{2}$

✓ -3, -1

3, 1

Question No. 23

The pie chart given below shows the sales of 7 different companies. The total sales of all these 7 companies are 3600. The sale of a particular company is shown in terms of degree with respect to the total sales of all these 7 companies.




Which of the following statement is correct?
I. The ratio of average sale of company P and Q to the average sale of T and U is 9 : 10.
II. The difference between the total sale of company R and S and the sale of V is 1050.

Question No. 24

Neither I nor II

Only II

✓ Only I

Both I and II

Question No. 25

Three positive numbers are in the ratio of 4 : 5 : 7, and the sum of their squares is 15,210. Find the sum of the three numbers.

148

156

126

✓ 208

Question No. 26

The perpendicular distance between the centre of a circle and the longest chord of that circle is _____.

1

✓ 0

2

π

Question No. 27

During the first year, the strength of a school increased by 12%, in the second year it decreased by 12% and in the third year it increased by 10%. At the end of the third year its strength was nearly 10842. What was the strength at the beginning of the first year?

8000

✓ 10000

6500

12000