

## SSC CGL (Held On 3 Dec 2022 Shift 2) Math Paper

## Question No. 1

In an equilateral triangle ABC, D is the midpoint of side BC. If the length of BC is 8 cm, then the height of the triangle is:

5.5 cm

4.5 cm

$6\sqrt{3}$  cm

✓  $4\sqrt{3}$  cm

## Question No. 2

A thief steals a bike at 12:30 p.m. and drives it at 48 km/h. But the theft is discovered after half an hour. The bike owner starts to chase him on another bike at 58 km/h. The thief will be caught at \_\_\_\_\_.

3:40 p.m.

3:54 p.m.

3:10 p.m.

✓ 3:24 p.m.

## Question No. 3

If  $\triangle ABC \sim \triangle FDE$  such that  $AB = 9$  cm,  $AC = 11$  cm,  $DF = 16$  cm and  $DE = 12$  cm, then the length of BC is:

$5\frac{3}{4}$  cm

$4\frac{3}{5}$  cm

$3\frac{5}{7}$  cm

✓  $6\frac{3}{4}$  cm

## Question No. 4

If  $X + \frac{1}{X} = 2 \cos \theta$ , then  $X^3 + \frac{1}{X^3} = ?$

$2 \cos 2\theta$

$\cos 3\theta$

✓  $2 \cos 3\theta$

$\cos 2\theta$

## Question No. 5

Three circles of radius 6 cm are kept touching each other. The string is tightly tied around these three circles. What is the length of the string?

✓  $36 + 12\pi$  cm

$36 + 18\pi$  cm

$24 + 36\pi$  cm

$36 + 20\pi$  cm

#### Question No. 6

If  $X = 3 + 2\sqrt{2}$ ,  $x > 0$ , then the value of  $\sqrt{X} - \frac{1}{\sqrt{X}}$  is:

1

$\sqrt{2}$

✓ 2

$2\sqrt{2}$

#### Question No. 7

$\tan(\theta - 4\pi)$  is equal to:

✓  $\tan\theta$

$-\cot\theta$

$\cot\theta$

$-\tan\theta$

#### Question No. 8

What will be the remainder when  $7^{42}$  is divided by 48?

2

3

✓ 1

0

#### Question No. 9

The cost of a piece of diamond varies with the square of its weight. A diamond of Rs. 6,084 value is cut into 3 pieces whose weights are in the ratio 3 : 2 : 1. Find the loss involved in the cutting.

Rs. 3,768

✓ Rs. 3,718

Rs. 3,168

Rs. 3,518

#### Question No. 10

The marked price of an article is Rs. 10,927. Due festive season, a certain percentage of discount is declared. Raju buys an article at a reduced price and sells it at Rs. 10,927, and makes a profit of 11.5%. What was the percentage discount offered?

✓ 10.3%

11.3%

11.5%

10.9%

#### Question No. 11

If  $x - y = 1$  and  $x^2 + y^2 = 41$  where  $x, y \geq 0$ , then the value of  $x + y$  will be:

☐ 9

☐ 8

☐ 6

☐ 7

#### Question No. 12

$\triangle XYZ \sim \triangle GST$  and  $XY : GS = 2 : 3$ ,  $XV$  is the median to the side  $YZ$ , and  $GD$  is the median to the side  $ST$ . The value of  $(\frac{YV}{SD})^2$  is \_\_\_\_\_.

✓  $\frac{4}{9}$

$\frac{3}{5}$

$\frac{1}{4}$

$\frac{2}{3}$