

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 _____.

✓ $\frac{4}{9}$

$\frac{3}{5}$

$\frac{1}{4}$

$\frac{2}{3}$