

Actual Paper

SSC CGL

11 June 2019

Shift-1

Mathematics

10POINTER

Your Study Companion

SSC CGL 2018 EXAM PAPER

Held on 11 June 2019 Shift - 1
(Mathematics)

1. If $\tan 4\theta = \cot(2\theta + 30^\circ)$, then θ is equal to:

- (a) 20°
- (b) 25°
- (c) 10°
- (d) 15°

Correct Answer: (c)

2. If $\sqrt{x} + \frac{1}{\sqrt{x}} = \sqrt{6}$, then $x^2 + \frac{1}{x^2}$ is equal to:

- (a) 62
- (b) 14
- (c) 36
- (d) 16

Correct Answer: (b)

3. The radii of two circular faces of the frustum of a cone of height 21 cm are 3 cm and 2 cm respectively. What is the volume of the frustum of the cone in cm^3 ($\pi = \frac{22}{7}$)?

- (a) 418
- (b) 345
- (c) 154
- (d) 286

Correct Answer: (a)

4. The following table indicates the number of students studying in three disciplines in five colleges:

Disciplines	Colleges				
	A	B	C	D	E
Science	300	350	275	400	275
Commerce	250	400	325	275	250
Economic	400	450	250	300	500

If a pie-chart is drawn representing the number of students in all five colleges, what is the central angle (correct to the nearest whole number) of the sector representing the students of college B?

- (a) 82°
- (b) 84°
- (c) 86°
- (d) 80°

Correct Answer: (c)

5. In a circle with centre O, AB is the diameter and CD is a chord such that ABCD is a trapezium. If $\angle BAC = 25^\circ$, then $\angle CAD$ is equal to:

- (a) 65°
- (b) 40°
- (c) 25°
- (d) 45°

Correct Answer: (b)

6. Chords AB and CD of a circle, when produced, meet at a point P outside the circle. If AB = 6 cm, CD = 3 cm and PD = 5 cm, then PB is equal to:

- (a) 6.25 cm
- (b) 4 cm
- (c) 5 cm
- (d) 6 cm

Correct Answer: (b)

7. If $\cot \theta = \frac{3}{4}$, then $\sin \theta + \cos \theta - \tan \theta$ is equal to:

- (a) $\frac{1}{15}$
- (b) $\frac{1}{20}$
- (c) $\frac{2}{15}$
- (d) $-\frac{1}{20}$

Correct Answer: (a)

8. If $a + b = 5$ and $ab = 3$, then $(a^3 + b^3)$ is equal to:

- (a) 65
- (b) 70
- (c) 80
- (d) 75

Correct Answer: (c)

9. A train without stoppage travels with an average speed of 65 km/hr and with stoppage, it travels with an average speed of 52 km/hr. For how many minutes does the train stop on an average per hour?

- (a) 12
- (b) 14
- (c) 13
- (d) 15

Correct Answer: (a)

10. The following table indicates the number of students studying in three disciplines in five colleges:

Disciplines	Colleges				
	A	B	C	D	E
Science	300	350	275	400	275
Commerce	250	400	325	275	250
Economic	400	450	250	300	500

What percentage of total students are studying in the commerce stream in all five colleges together?

- (a) 30%
- (b) 28%
- (c) 32%
- (d) 33%

Correct Answer: (a)

11. A is 40% more efficient than B and C is 20% less efficient than B. Working together, they can finish a task in 15 days. In how many days, will B alone complete 75% of the task?

- (a) 32
- (b) 48
- (c) 44
- (d) 36

Correct Answer: (d)

12. The following table indicates the number of students studying in three disciplines in five colleges:

Disciplines	Colleges				
	A	B	C	D	E
Science	300	350	275	400	275
Commerce	250	400	325	275	250
Economic	400	450	250	300	500

What percentage of students in college B is studying in the science stream, (correct to one decimal place)?

- (a) 29.8%
- (b) 29.2%
- (c) 29.4%
- (d) 29.6%

Correct Answer: (b)

13. An article is sold for Rs. 657.90 after successive discounts of 15% and 10%. What is the marked price of the article?

- (a) Rs. 900
- (b) Rs. 860
- (c) Rs. 920
- (d) Rs. 880

Correct Answer: (b)

14. If $a + b + c = 8$ and $ab + bc + ca = 12$, then $a^3 + b^3 + c^3 - 3abc$ is equal to:

- (a) 192
- (b) 224
- (c) 144

(d) 400

Correct Answer: (b)

15. The value of $\sec^2 28^\circ - \cot^2 62^\circ + \sin^2 60^\circ + \operatorname{cosec}^2 30^\circ$ is equal to:

(a) $\frac{23}{4}$

(b) $\frac{19}{4}$

(c) $\frac{7}{2}$

(d) 3

Correct Answer: (a)

16. Two articles are sold for Rs. 10,005 each. On one, the seller gains 15% and on the other, he loses 13%. What is his overall gain or loss percent, correct to two decimal places?

(a) 0.94% gain

(b) 1.42% gain

(c) 1.42% loss

(d) 0.94% loss

Correct Answer: (d)

17. If $a : b = 5 : 3$, then $(8a - 5b) : (8a + 5b)$ is equal to:

(a) 3 : 11

(b) 2 : 5

(c) 3 : 13

(d) 5 : 11

Correct Answer: (d)

18. The average marks of 45 students was found to be 66. If the marks of two students were incorrectly entered as 28 and 64 instead of 82 and 46 respectively, then what is the correct average?

(a) 66.6

(b) 66.8

(c) 66.4

(d) 67.2

Correct Answer: (b)

19. The value of: $2.8 + (52 \div 1.3 \times 2) - 6 \times 3 \div 8 + 2$

(a) 10.55

(b) 6.45

(c) 8.45

(d) 4.55

Correct Answer: (a)

20. In $\triangle ABC$, AD is a median and P is a point on AD such that $AP : PD = 3 : 4$. Then $ar(\triangle APB) : ar(\triangle ABC)$ is equal to:

- (a) 2 : 7
- (b) 3 : 14
- (c) 3 : 4
- (d) 3 : 7

Correct Answer: (b)

21. What is the least value of x such that $517x324$ is divisible by 12?

- (a) 2
- (b) 0
- (c) 1
- (d) 3

Correct Answer: (a)

22. The following table indicates the number of students studying in three disciplines in five colleges:

Disciplines	Colleges				
	A	B	C	D	E
Science	300	350	275	400	275
Commerce	250	400	325	275	250
Economic	400	450	250	300	500

What is the ratio of the total number of students studying in the science stream to that of studying in commerce stream in all five colleges taken together?

- (a) 16 : 15
- (b) 16 : 19
- (c) 14 : 15
- (d) 19 : 15

Correct Answer: (a)

23. $\Delta ABC \sim \Delta QRP$ and $PQ = 6\text{cm}$, $QR = 8\text{cm}$ and $PR = 10\text{cm}$. If $ar(\Delta PQR) = 1:4$, then, AB is equal to:

- (a) 4 cm
- (b) 5 cm
- (c) 3 cm
- (d) 2 cm

Correct Answer: (a)

24. The price of sugar is increased by 22%. A person wants to increase his expenditure by 12% only. By what percent should he decrease his consumption, nearest to one decimal place?

- (a) 7.8%
- (b) 8.2%
- (c) 8.6%
- (d) 10%

Correct Answer: (b)

25. The difference between the compound interest and simple interest on Rs. x at 8.5% per annum for 2 years is Rs. 28.90. the value of x is:

- (a) 4000
- (b) 3800

(c) 4500

(d) 3500

Correct Answer: (a)

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