

SSC CGL SUNDAY QUANT (Question)

Q1. If $x \tan 60^\circ + \cos 45^\circ = \sec 45^\circ$ then the value of $x^2 + 1$ is

- (a) $6/7$
- (b) $7/6$
- (c) $5/6$
- (d) $6/5$

Q2. x, y be two acute angles, $x + y < 90^\circ$ and $\sin (2x - 20^\circ) = \cos (2y + 20^\circ)$, the value of $\tan (x + y)$ is

- (a) $\sqrt{3}$
- (b) $1/\sqrt{3}$
- (c) 1
- (d) $2 + \sqrt{2}$

Q3. If $a^2 \sec^2 x - b^2 \tan^2 x = c^2$ then the value of $\sec^2 x + \tan^2 x$ is equal to (assume $b^2 \neq a^2$)

- (a) $\frac{b^2 - a^2 + 2c^2}{b^2 + a^2}$
- (b) $\frac{b^2 + a^2 - 2c^2}{b^2 - a^2}$
- (c) $\frac{b^2 - a^2}{b^2 + a^2 + 2c^2}$
- (d) $\frac{b^2 - a^2}{b^2 + a^2 + 2c^2}$

Q4. $(1 + \sec 20^\circ + \cot 70^\circ)(1 - \operatorname{cosec} 20^\circ + \tan 70^\circ)$ is equal to


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

Q5.

If $\tan^4 \theta + \tan^2 \theta = 1$ then the value of $\cos^4 \theta + \cos^2 \theta$ is

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

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Q6.

The value of $8(\sin^6\theta + \cos^6\theta) - 12(\sin^4\theta + \cos^4\theta)$ is equal to

- (a) 20
- (b) -20
- (c) -4
- (d) 4

Q7. An aeroplane flying horizontally at a height of 3 Km. above the ground is observed at a certain point on earth to subtend an angle of 60° . After 15 sec flight, its angle of elevation is changed to 30° . The speed of the aeroplane (taking $\sqrt{3} = 1.732$) is

- (a) 230.63 m/sec
- (b) 230.93 m/sec
- (c) 235.85 m/sec
- (d) 236.25 m/sec

Q8. If the angle of elevation of the sun decreases from 45° to 30° , then the length of the shadow of a pillar increases by 60m. The height of the pillar is

- (a) $60(\sqrt{3}+1)$ m
- (b) $30(\sqrt{3}-1)$ m
- (c) $30(\sqrt{3}+1)$ m
- (d) $60(\sqrt{3}-1)$ m

Q9. The angle of elevation of the top of a tower, vertically erected in the middle of a paddy field, from two points on either side of tower on a horizontal line through the foot of the tower are given to be α and β ($\alpha > \beta$). The height of the tower is h unit. A possible distance (in the same unit) between the points is

- (a) $\frac{h(\cot\beta - \cot\alpha)}{\cot(\alpha + \beta)}$
- (b) $h(\cot\alpha - \cot\beta)$
- (c) $\frac{h(\tan\beta - \tan\alpha)}{(\tan\beta \tan\alpha)}$
- (d) $h(\cot\alpha + \cot\beta)$

Q10. The angle of elevation of the top of an unfinished pillar at a point 150 meters from its base is 30° . The height (in meters) by which the pillar must be raised so that its angle of elevation at the same point may be 45° , is (taking $\sqrt{3} = 1.73$)

- (a) 63.4
- (b) 86.6
- (c) 126.8
- (d) 173.2



SSC CGL TIER-II

Quantitative Aptitude

20 Full Length Mocks

Q11. A man sets out to cycle from A to B, and at the same time another man starts from B to cycle to A. After passing each other they complete their journey in $3\frac{1}{3}$ and $4\frac{4}{5}$ hours respectively. At what rate does the second man cycle if the first cycle 8 km per hour?

- (a) $2\frac{2}{3}$ km/h
- (b) $6\frac{2}{3}$ km/h
- (c) $3\frac{1}{3}$ km/h
- (d) $5\frac{1}{3}$ km/h

Q12. A car can cover a certain distance in $4\frac{1}{2}$ h. If the speed is increased by 5 km/hr, it would take $\frac{1}{2}$ h less to cover the same distance. Find the slower speed of the car.

- (a) 50 km/hr
- (b) 40 km/hr
- (c) 45 km/hr
- (d) 60 km/hr

Q13. A boat moves downstream at the rate of 1 km in 7.5 minutes and upstream at the rate of 5 km an hour. Find the speed of boat in still water.

- (a) 8.5 km/h
- (b) 6.5 km/h
- (c) 7.00 km/h
- (d) 8.00 km/h

Q14. A car travelling at an average speed of 72 km/hr takes 9 minutes to travel a certain distance. By how much should it increase its speed (in km/hr) to travel the same distance in 8 minutes?

- (a) 8
- (b) 9
- (c) 7
- (d) 6

Q15. Train A takes 1 hour more than train B to travel a distance of 720 km. Due to engine trouble speed of train B falls by a third, so it takes 3 hours more than Train A to complete the same journey? What is the speed of Train A (in km/hr)?

- (a) 80
- (b) 90
- (c) 60
- (d) 70

Q16. If a boat goes upstream at a speed of 21 km/h and comes back the same distance at 28 km/h. What is the average speed (in km/hr) for the total journey?

- (a) 24.5
- (b) 24
- (c) 25
- (d) 25.4

Q17. If Sonam runs 4km/h then she is 8 min late to school, but if she increases her speed by 2 km/h. then she is only 5 min late. Find her normal speed to reach school on time:

- (a) 0.3 km/min
- (b) 2.5km/h
- (c) 3km/h
- (d) 0.6km/min

Q18. Two runners A and B start running at 12 km/hr and 16 km/hr towards each other. They meet after 1 hour and 30 minutes. How far (in km) were they from each other when they started?

- (a) 42
- (b) 36
- (c) 40
- (d) 45

Q19. A car can cover a certain distance in $3\frac{1}{3}$ hours. If the speed is increased by 6 km/hr, then it would take $\frac{1}{3}$ hours less time to cover the same distance. Find the initial speed of the car.

- (a) 48 km/hr
- (b) 54 km/hr
- (c) 52 km/hr
- (d) 44 km/hr

Q20. The speed of a boat in upstream is $\frac{2}{3}$ that of downstream. Find the ratio of speed of boat in still water and to the average speed of boat in downstream and upstream.

- (a) 24/25
- (b) 25/24
- (c) 5/12
- (d) None of these

Q21. Let $0 < x < 1$. Then the correct inequality is

- (a) $x < \sqrt{x} < x^2$
- (b) $\sqrt{x} < x < x^2$
- (c) $x^2 < x < \sqrt{x}$
- (d) $\sqrt{x} < x^2 < x$

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Q22. Three bells ring at interval of 36 seconds, 40 seconds and 48 seconds respectively. They start ringing together at a particular time. They will ring together after every

- (a) 6 minutes
- (b) 12 minutes
- (c) 18 minutes
- (d) 24 minutes

Q23. If the sum of the digits of a three digit number is subtracted from that number, then it will always be divisible by

- (a) 3 only
- (b) 9 only
- (c) both 3 and 9
- (d) all of 3, 6 and 9

Q24. Which of the following is correct ?

- (a) $2/3 < 3/5 < 11/15$
- (b) $3/5 < 2/3 < 11/15$
- (c) $11/15 < 3/5 < 2/3$
- (d) $3/5 < 11/15 < 2/3$

Q25. The greater of the two numbers whose product is 900 and sum exceeds their difference by 30 is

- (a) 60
- (b) 75
- (c) 90
- (d) 100

Q26. The smallest fraction, which should be added to the sum of $2\frac{1}{2}$, $3\frac{1}{3}$, $4\frac{1}{4}$ and $5\frac{1}{5}$ to make the result a whole number, is

- (a) $13/60$
- (b) $1/4$
- (c) $17/60$
- (d) $43/60$

Q27. Find the cube root of (-13824) or Find the value of $\sqrt[3]{-13824}$

- (a) 38
- (b) -38
- (c) 24
- (d) -24

Q28. The sum of three positive numbers is 18 and their product is 162. If the sum of two number is equal to the third then the sum of squares of the numbers is

- (a) 120
- (b) 126
- (c) 132
- (d) 138

Q29. The sum of three consecutive even numbers is 28 more than the average of these three numbers. Then the smallest of these three numbers is

- (a) 6
- (b) 12
- (c) 14
- (d) 16

Q30. In a division sum, the divisor 'd' is 10 times the quotient 'q' and 5 times the remainder 'r'. If $r = 46$, the dividend will be

- (a) 5042
- (b) 5328
- (c) 5336
- (d) 4276

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