Quant Mega Quiz for SSC CGL Tier - 2

Q1. The factors of $(a^2+4b^2+4b-4ab-2a-8)$ are
(a) (a-2b-4)(a-2b+2)
(b) (a-b+2)(a-4b-4)
(c) (a+2b-4)(a+2b+2)
(d) (a+2b-1)(a-2b+1)

Q2. Area of the triangle formed by the graph of the straight lines x – y = 0, x + y = 2 and the x – axis is
(a) 1 sq unit
(b) 2 sq units
(c) 4 sq units
(d) None of these

Q3. The value of $\frac{1}{a^2+ax+x^2}-\frac{1}{a^2-ax+x^2}+\frac{2ax}{a^4+a^2x^2+x^4}$ is
(a) 2
(b) 1
(c) –1
(d) 0

Q4. If 4x + 5y = 83 and 3x : 2y = 21 : 22, then (y – x) equals
(a) 3
(b) 4
(c) 7
(d) 11

Q5.
If x = 11, then the value of $x^5-12x^4+12x^3-12x^2+12x-1$ is
(a) 5
(b) 10
(c) 15
(d) 20

Q6. If p = 99, then the value of $p(p^2+3p+3)$ is
(a) 10000000
(b) 999000
(c) 999999
(d) 990000

Q7. Two chords of lengths a metre and b metre subtend angles 60° and 90° at the centre of the circle respectively. Which of the following is true?

(a) $b = \sqrt{2}a$

(b) $a = \sqrt{2}b$

(c) a = 2b

(d) b = 2a

Q8. In a triangle ABC, $\angle A + \frac{1}{2}\angle B + \angle C = 140°$, then $\angle B$ is

(a) 50°

(b) 80°

(c) 40°

(d) 60°

Q9. The radius of a circle is 6 cm. The distance of a point lying outside the circle from the centre is 10 cm. The length of the tangent drawn from the outside point to the circle is

(a) 5 cm

(b) 6 cm

(c) 7 cm

(d) 8 cm

Q10. If ABCD be a cyclic quadrilateral in which ∠A=4x°, ∠B=7x°, ∠C=5y°, ∠D=y°, then x : y is

(a) 3 : 4

(b) 4 : 3

(c) 5 : 4

(d) 4 : 5

Q11. If $3(a^2+b^2+c^2)=(a+b+c)^2$, then the relation between a, b and c is

(a) a≠b=c

(b) a=b=c

(c) a≠b≠c

(d) a=b≠c

Q12. A car covers four successive 7 km distances at speeds of 10 km/hour, 20 km/hour ,30 km/hour and 60 km/hour respectively, Its average speed over this distance is

(a) 40 km/hour

(b) 20 km/hour

(c) 60 km/hour

(d) 30 km/hour

Q13. A cylinder with base radius 8 cm and height 2 cm is melted to form a cone of height 6 cm. The radius of the cone will be

(a) 6 cm

(b) 5 cm

(c) 4 cm

(d) 8 cm

Q14. A dealer fixed the price of an article 40% above the cost of production. While selling it he allows a discount of 20% and makes a profit of Rs 48. The cost of production (in Rs) of the article is

(a) 420
(b) 360
(c) 400
(d) 320

Q15. Average of n numbers is a. The first number is increased by 2, seconds one is increased by 4, the third one is increased by 8 and so on. The average of the new number is

(a) $a + 2\frac{2^n-1}{n}$

(b) $a + \frac{2^n-1}{n}$

(c) $a + 2\frac{2^n+1}{n}$

(d) $a + \frac{2^{n+1}-1}{n}$

Q16. If x=a sinθ – b cos θ , y = a cosθ +b sinθ, then which of the following is true?

(a) $x^2 + y^2 = a^2 + b^2$

(b) $\frac{x^2}{y^2} + \frac{a^2}{b^2} = 1$

(c) $x^2 + y^2 = a^2 - b^2$

(d) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

Q17. Let $x = \frac{\sqrt{13}+\sqrt{11}}{\sqrt{13}-\sqrt{11}}$ and $y = \frac{1}{x}$, then the value of $3x^2 - 5xy + 3y^2$ is

(a) 1717
(b) 1771
(c) 1171
(d) 1177

Q18. If 64 buckets of water are removed from a cubical shaped water tank completely filled with water, ⅓ of the tank remains filled with water. The length of each side of the tank is 1.2 m. Assuming that all buckets are of the same measures then the volume (in litres) of water contained by each bucket is

(a) 16
(b) 18
(c) 12
(d) 15

Q19. In trapezium ABCD, AB || CD and AB = 2CD. Its diagonals intersect at O. If the area of Δ AOB = 84 cm^2, then the area of Δ COD is equal to

(a) 42 cm^2

(b) 21 cm^2

(c) 72 cm^2

(d) 26 cm^2

Q20. Water tax is increased by 20% but its consumption is decreased by 20%. Then the increase of decrease in the expenditure of the money is

(a) 5% decrease

(b) 4% decrease

(c) No change

(d) 4% increase

Q21. There is a profit of 20% on the cost price of an article. The % of profit, when calculated on selling price is

(a) $16\frac{2}{3}\%$

(b) 20%

(c) $33\frac{1}{3}\%$

(d) None of these

Q22. By selling an article for Rs. 102, there is a loss of 15%, when the article is sold for Rs. 134. 40, the net result in the transaction is

(a) 12% gain

(b) 12% loss

(c) 10% loss

(d) 15% gain

Q23. Two toys are sold at 504 each. One toy brings the dealer a gain of 12% and the other a loss of 4%. The gain or loss per cent by selling both the toys is

(a) $3\frac{5}{13}\%$ Profit

(b) $4\frac{5}{13}\%$ Profit

(c) $5\frac{1}{13}\%$ Profit

(d) $2\frac{3}{13}\%$ loss

Q24. A sold a horse to B for Rs. 4800 by losing 20%. B sells it to C at a price which would have given A a profit of 15%. B's gain is

(a) Rs. 1800

(b) Rs. 1900

(c) Rs. 2000

(d) Rs. 2100

Q25. If each side of a cube is increased by 10% the volume of the cube will increase by
(a) 30%
(b) 10%
(c) 33.1%
(d) 25%

Q26. A reduction of 21% in the price of an item enables a person to buy 3 kg more for Rs. 100. The reduced price of item per kg is
(a) Rs. 5.50
(b) Rs. 7.50
(c) Rs. 10.50
(d) Rs. 7.00

Q27. The number that is to be added to 10% of 320 to have the sum as 30% of 230 is
(a) 37
(b) 32
(c) 23
(d) 73

Q28. The strength of a school increases and decreases in every alternate year by 10%. It started with increase in 2000. Then the strength of the school in 2003 as compared to that in 2000 was
(a) increased by 8.9%
(b) decreased by 8.9%
(c) increased by 9.8%
(d) decreased by 9.8%

Q29. Two trains of equal length are running on parallel lines in the same direction at the rate of 46 km/hr and 36 km/hr. The faster train passes the slower train in 36 seconds. The length of each train is
(a) 50 m
(b) 72 m
(c) 80 m
(d) 82 m

Q30. A car driver leaves Bangalore at 8.30 A.M. and expects to reach a place 300 km from Bangalore at 12.30 P.M. At 10.30 he finds that he has covered only 40% of the distance. By how much he has to increase the speed of the car in order to keep up his schedule?
(a) 45 km/hr
(b) 40 km/hr
(c) 35 km/hr
(d) 30 km/hr