## Quant Mega Quiz for SSC CGL Tier - 2

**Q1.** Quadrilateral ABCD is circumscribed about a circle. If the lengths of AB, BC, CD are 7 cm, 8.5 cm and 9.2 cm respectively, then the length (in cm) of DA is
(a) 16.2
(b) 7.2
(c) 7.7
(d) 10.7

**Q2.** A right prism has a triangular base whose sides are 13 cm, 20 cm and 21 cm. If the altitude of the prism is 9 cm then its volume is
(a) 1134 cm$^3$
(b) 1314 cm$^3$
(c) 1413 cm$^3$
(d) 1143 cm$^3$

**Q3.** 300 grams of sugar solution has 40% of sugar in it. How much sugar should be added to make it 50% in the solution?
(a) 60 gms
(b) 10 gms
(c) 80 gms
(d) 40 gms

**Q4.** The area of isosceles trapezium is 176 cm² and the height is $\frac{2^{th}}{11}$ of the sum of its parallel sides if the ratio of the length of the parallel sides is 4 : 7, then the length of a diagonal (in cm) is
(a) $2\sqrt{137}$
(b) $\sqrt{137}$
(c) $24$
(d) $28$

**Q5.** A and B are centres of two circles of radii 11 cm and 6 cm, respectively. PQ is direct common tangent to the circles. If AB = 13 cm, then length of PQ will be
(a) 8.5 cm
(b) 12 cm
(c) 13 cm
(d) 17 cm

**Q6.** A, B and C can do work separately in 16, 32 and 48 days respectively. They started the work together but B leaving off 8 days and C six days before the completion of the work. In what time is the work finished?
(a) 12 days
(b) 10 days
(c) 14 days
(d) 9 days

**Q7.** AD is perpendicular to the internal bisector of ∠ABC of Δ ABC. DE is drawn through D and parallel to BC to meet AC at E. If the length of AC is 12 cm, then the length of AE (in cm) is
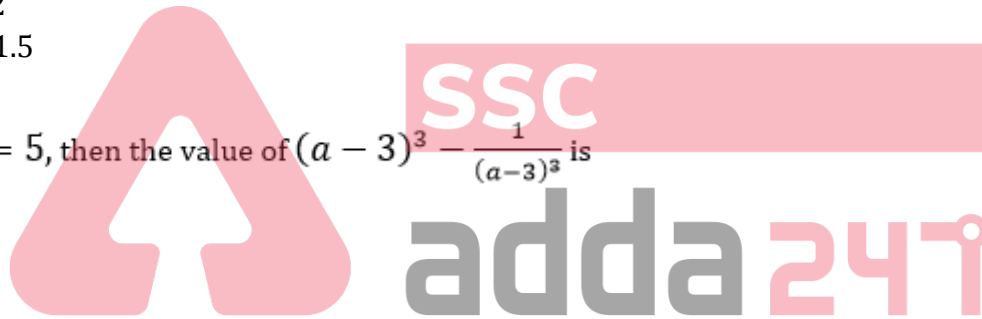(a) 3
(b) 6
(c) 8
(d) 4

**Q8.** The average of five consecutive positive integers is n. If the next two integers are also include, the average of all these integers will
(a) increase by 1
(b) remains the same
(c) increase by 2
(d) increase by 1.5

**Q9.** If $a - \dfrac{1}{a-3} = 5$, then the value of $(a-3)^3 - \dfrac{1}{(a-3)^3}$ is
(a) 14
(b) 5
(c) 2
(d) 7

**Q10.** A plane divides a right circular cone into two parts of equal volume. If the plane is parallel to the base, then the ratio, in which the height of the cone is divided, is
(a) $1 : \sqrt[3]{2}$
(b) $1 : \sqrt{2}$
(c) $1 : \sqrt[3]{2} - 1$
(d) $1 : \sqrt[3]{2} + 1$

**Q11.**
If $a = 25, b = 15, c = -10$, then the value
of $\dfrac{a^3+b^3+c^3-3abc}{(a-b)^2+(b-c)^2+(c-a)^2}$ is
(a) 30
(b) −15
(c) −30
(d) 15

Q12. A, B, C are three points on a circle. The tangent at A meets BC produced at T, ∠BTA = 40°, ∠CAT = 44°. The angle subtended by BC at the centre of the circle is
(a) 84°
(b) 92°
(c) 96°
(d) 104°

Q13. If the length of a chord of a circle at a distance of 12 cm from the centre is 10 cm, then the diameter of the circle is
(a) 13 cm
(b) 15 cm
(c) 26 cm
(d) 30 cm

Q14. In ΔABC, P and Q are the middle points of the sides AB and AC respectively. R is a point on the segment PQ such that PR : RQ = 1 : 2. If PR = 2 cm, then BC =
(a) 4 cm
(b) 2 cm
(c) 12 cm
(d) 6 cm

Q15. If O is the circumcenter of ΔABC and ∠OBC = 35°, then the ∠BAC is equal to
(a) 55°
(b) 110°
(c) 70°
(d) 35°

Q16. If I is the incentre of ΔABC an ∠BIC = 135°, then ΔABC is
(a) acute angled
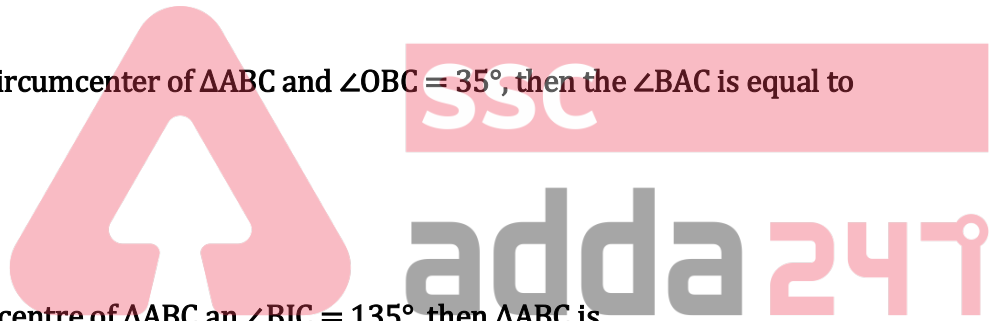(b) equilateral
(c) right angled
(d) obtuse angled

Q17.

If $\sin^2 \alpha + \sin^2 \beta = 2$, then the value of $\cos\left(\frac{\alpha+\beta}{2}\right)$ is

(a) 1
(b) −1
(c) 0
(d) 0.5

Q18.

The value of $\cot\frac{\pi}{20}\cot\frac{3\pi}{20}\cot\frac{5\pi}{20}\cot\frac{7\pi}{20}\cot\frac{9\pi}{20}$ is

(a) -1
(b) ½
(c) 0
(d) 1

**Q19.**

If $\sin\theta + \cos\theta = \frac{17}{13}$, $0 < \theta < 90°$, then the value of $\sin\theta - \cos\theta$ is

(a) 5/17
(b) 3/19
(c) 7/10
(d) 7/13

**Q20.** If $\tan\theta \cdot \tan 2\theta = 1$, then the value of $\sin^2 2\theta + \tan^2 2\theta$ is equal to

(a) ¾
(b) 10/3
(c) 3 ¾
(d) 3

**Q21.**

If $(x^3 - y^3) : (x^2 + xy + y^2) = 5 : 1$ and $(x^2 - y^2) : (x - y) = 7 : 1$,
then the ratio 2x : 3y equals

(a) 2 : 3
(b) 4 : 1
(c) 4 : 3
(d) 3 : 2

**Q22.**

If $x = a^{1/2} +, a^{-1/2}, y = a^{1/2} - a^{-1/2}$, then value
of $(x^4 - x^2y^2 - 1) + (y^4 - x^2y^2 + 1)$

(a) 16
(b) 14
(c) 12
(d) 13

**Q23.** The marked price of a tape recorder is Rs. 12,600. A festival discount of 5% is allowed on it. Further for cash payment, a second discount of 2% is given. The cash payment, in rupees, that is to be made for buying it is

(a) 11,730.60
(b) 11,073.60
(c) 11,703.60
(d) 11,370.60

**Q24.** If a man walks at the rate of 5km/hour, he misses a train by 7 minutes. However, if he walks at the rate of 6km/hour, he reaches the station 5 minutes before the arrival of the train. The distance covered by him to reach the station is

(a) 6 km
(b) 7 km
(c) 4 km
(d) 6.25 km

**Q25.**

If $x - \sqrt{3} - \sqrt{2} = 0$ and $y - \sqrt{3} + \sqrt{2} = 0$ then value of $\left(x^3 - 20\sqrt{2}\right) - \left(y^3 + 2\sqrt{2}\right)$

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

**Q26.** The radii of two solid iron spheres are 1 cm and 6 cm respectively. A hollow sphere is made by melting the two spheres. If the external radius of the hollow sphere is 9 cm, then its thickness (in cm) is

(a) 0.5
(b) 2
(c) 1.5
(d) 1

**Q27.** There is a wooden sphere of radius $6\sqrt{3}$ cm. The surface area of the largest possible cube cut out from the sphere will be

(a) $464\sqrt{3}\ cm^2$
(b) $646\sqrt{3}\ cm^2$
(c) $462\ cm^2$
(d) $864\ cm^2$

**Q28.** If 60% of A = 30% of B, B = 40 % of C and C = x% of A, then value of x is

(a) 200
(b) 500
(c) 300
(d) 800

**Q29.** A and B can do a piece of work in 30 and 36 days respectively. They began the work together but A leaves after some days and B finished the remaining work in 25 days. After how many days did A leave?

(a) 6 days
(b) 5 days
(c) 11 days
(d) 10 days

**Q30.** A sum of money placed at compound interest doubles itself in 5 years. It will amount to eight times itself at the same rate of interest in

(a) 10 years
(b) 20 years
(c) 12 years
(d) 15 years