

Quant Mega Quiz for SSC CGL Tier - 2

**Q1. In an examination paper of five questions, 5% of the candidates answered all of them and 5% answered none. Of the rest, 25% candidates answered only one question and 20% answered 4 questions. If 396 candidates answered either 2 questions or 3 questions, the number of candidates that appeared for the examination was -**

- (a) 1000
- (b) 900
- (c) 800
- (d) 850

**Q2. The population of a town is 3,11,250. The ratio between women and men is 43 : 40. If 24% men and 8% women are literate among them. The total number of literate person in the town is-**

- (a) 41800
- (b) 48900
- (c) 56800
- (d) 99600

**Q3. In a certain school, 20% of students are below 8 years of age. The number of students above 8 years of age is  $\frac{2}{3}$  of the number of students of 8 years of age which is 48. What is the total number of students in the school?**

- (a) 72
- (b) 80
- (c) 120
- (d) 100

**Q4. A person buys 5 tables and 9 chairs for Rs. 23,400. He sells the tables at 10% profit and chairs at 20% profit. If his total profit on selling all the tables and chairs is Rs. 3030. What is the cost price of 3 chairs?**

- (a) Rs. 2100
- (b) Rs. 2300
- (c) Rs. 2400
- (d) Rs. 2460

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**Q5. The profit obtained when 135 chairs are sold is equal to the cost price of 60 chairs. What is the percentage profit obtained when 26 chairs are given free with the sale of 143 chairs?**

- (a)  $11\frac{1}{9}\%$
- (b)  $22\frac{2}{9}\%$
- (c)  $33\frac{1}{9}\%$
- (d)  $22\frac{1}{9}\%$

**Q6. Two articles are sold for Rs. 12, 113 each. On one, the seller gains  $45\frac{5}{11}\%$  and on the other, he loses 17%. What is his overall gain or loss percent, correct to two decimal places?**

- (a) 5.69%
- (b) 4.39%
- (c) 4.19%
- (d) 5.29%

**Q7. Neeraj bought more apples than oranges. He sells apples at Rs. 23 a piece, and makes 15% profit. He sells oranges at Rs. 10 a piece and makes 25% profit. If he gets Rs. 673 after selling all the apples and oranges, then find his profit percentage?**

- (a) 14.25%
- (b) 15.35%
- (c) 16.75%
- (d) 17.65%

**Q8. The market price of an article is Rs. 6217 but due to festive offer a certain percent of discount is declared. Amit availed this opportunity and bought the article at reduced price. He then sold it at Rs. 6217 and thereby make a profit of  $58\frac{1}{3}\%$ . The percent of discount allowed was?**

- (a)  $32\frac{14}{19}\%$
- (b)  $36\frac{16}{19}\%$
- (c)  $30\frac{12}{19}\%$
- (d)  $34\frac{18}{19}\%$

**Q9. The market price of an article is Rs. 6400. If three successive discounts, each of K% on the marked price is equal to a single discount of Rs.2469.6. What will be the selling price if only two discounts of K% each were given on the marked price?**

- (a) Rs. 4134
- (b) Rs. 4444
- (c) Rs. 4624
- (d) Rs. 4864

**Q10.** A shopkeeper marks up his goods 45% above the CP and gives 23% discount to the customer. At the time of buying he uses 1120 gm instead of 1kg and at the time of selling the goods he gives 880 gm weight instead of 1kg, Find his profit%?

- (a) 38.1%
- (b) 42.1%
- (c) 43.1%
- (d) 44.1%

**Q11.**

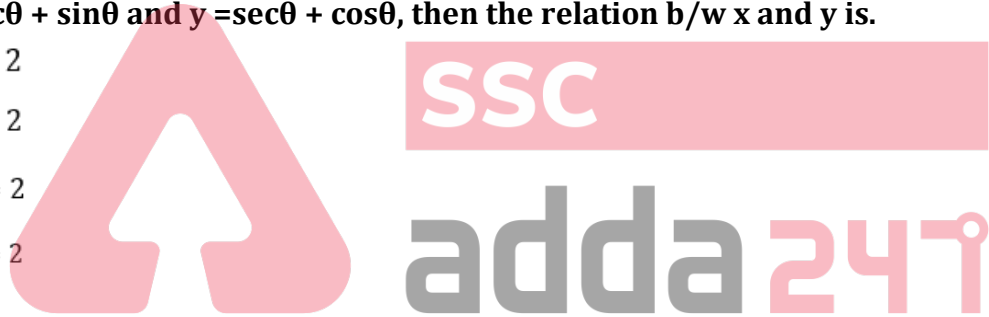
The value of the expression

$$2(\sin^6\theta + \cos^6\theta) - 3(\sin^4\theta + \cos^4\theta) + 2.$$

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

**Q12.** If  $x = \operatorname{cosec}\theta + \sin\theta$  and  $y = \sec\theta + \cos\theta$ , then the relation b/w x and y is.

- (a)  $xy(x^2 - y^2) = 2$
- (b)  $xy(x^2 + y^2) = 2$
- (c)  $xy\left(\frac{1}{x^2} + \frac{1}{y^2}\right) = 2$
- (d)  $xy\left(\frac{1}{x^2} - \frac{1}{y^2}\right) = 2$



**Q13.** If  $\operatorname{cosec}A + \cot A = p$ , then the value of  $\sin A$  is.

- (a)  $\frac{p^2+1}{2p}$
- (b)  $\frac{2p}{p^2+1}$
- (c)  $\frac{p^2-1}{2p}$
- (d)  $\frac{2p}{p^2-1}$

**Q14.** Evaluate:  $\frac{\sin 36^\circ}{\cos 54^\circ} - \frac{\sin 54^\circ}{\cos 36^\circ}$

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

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**Q15.** Evaluate:  $\cos(40^\circ - \theta) - \sin(50^\circ + \theta) + \frac{\cos^2 40^\circ + \cos^2 50^\circ}{\sin^2 40^\circ + \sin^2 50^\circ}$

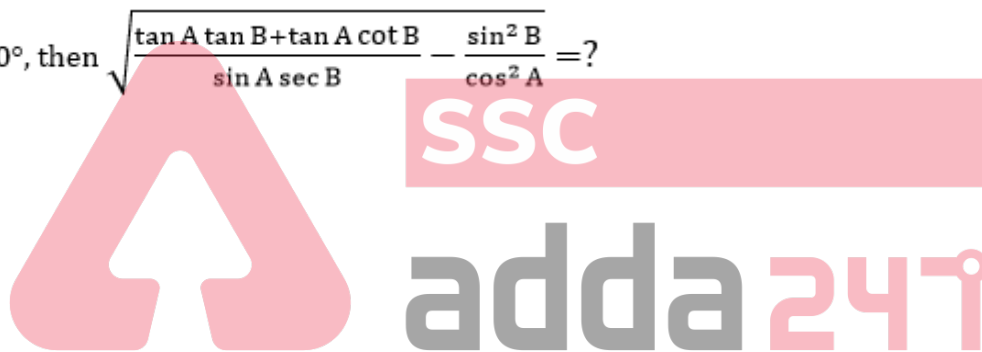
- (a) 1
- (b) -1
- (c) -2
- (d) 0

**Q16.** Evaluate:  $\cot 12^\circ \cot 38^\circ \cot 52^\circ \cot 60^\circ \cot 78^\circ$

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

**Q17.** If  $A + B = 90^\circ$ , then  $\sqrt{\frac{\tan A \tan B + \tan A \cot B}{\sin A \sec B} - \frac{\sin^2 B}{\cos^2 A}} = ?$

- (a)  $\tan A$
- (b)  $\sin A$
- (c)  $\cot A$
- (d)  $\operatorname{cosec} A$



**Q18.** If  $\sec 5A = \operatorname{cosec} (A + 36^\circ)$ , where  $5A$  is an acute angle, find the value of  $A$ .

- (a)  $8^\circ$
- (b)  $7^\circ$
- (c)  $9^\circ$
- (d)  $11^\circ$

**Q19.** Evaluate:  $(\sin \theta + \sec \theta)^2 + (\cos \theta + \operatorname{cosec} \theta)^2$

- (a)  $(1 + \sec \theta \cdot \operatorname{cosec} \theta)^2$
- (b)  $1 + \sec \theta \cdot \operatorname{cosec} \theta$
- (c)  $1 - \sec \theta$
- (d) None of these

**Q20.** If  $\sin \theta + \cos \theta = p$  and  $\sec \theta + \operatorname{cosec} \theta = q$ , then  $q(p^2 - 1) = ?$

- (a)  $p$
- (b)  $2p$
- (c)  $3p$
- (d)  $2p^2$

**Q21.**  $(x^{29} - x^{25} + x^{13} - 1)$  is divisible by:

- (a) both  $(x - 1)$  &  $(x + 1)$
- (b)  $(x - 1)$  but not by  $(x + 1)$
- (c)  $(x + 1)$  but not by  $(x - 1)$
- (d) neither  $(x - 1)$  nor  $(x + 1)$

**Q22.** If  $x^2 + 2 = 2x$ , Find  $x^4 - x^3 + x^2 + 5$

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

**Q23.**

If  $x = a^2 + b^2$ ,  $y = \sqrt{2}ab$ , find

$$\frac{a^4 + b^4}{a^2 - ab\sqrt{2} + b^2}$$

- (a)  $x + y$
- (b)  $x - y$
- (c)  $xy$
- (d)  $2xy$

**Q24.** If  $(x - a)(x - b) = 1$  and  $a - b + 5 = 0$  find  $(x - a)^3 - \frac{1}{(x - a)^3} = ?$

- (a) 125
- (b) - 125
- (c) 0
- (d) 140

**Q25.** If  $x^2 + x = 5$  find the value of  $(x + 3)^3 + \frac{1}{(x + 3)^3}$

- (a) 198
- (b) 110
- (c) 62
- (d) 101

**Q26.** If  $x(x - 3) = - 1$  find the value of  $x^3(x^3 - 18)$

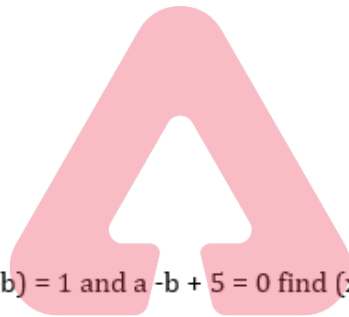
- (a) 0
- (b) 1
- (c) - 1
- (d) - 2

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Q27. If  $(a + b)^2 = 21 + c^2$ ,  $(b + c)^2 = 32 + a^2$  and  $(c + a)^2 = 28 + b^2$ , find  $a + b + c = ?$

- (a) 5
- (b) 9
- (c) 3
- (d) 1

Q28. If  $a^3 + b^3 + c^3 - 3abc = 0$ ,  $a + b + c \neq 0$  and  $a, b$  &  $c$  are natural number find the possible value of  $a \times b \times c$

- (a) 4
- (b) 8
- (c) 5
- (d) 12

Q29.

Find the value of

$$\sqrt[3]{2 \times 333^3 + 334^3 - 3 \times 333^2 \times 334}$$

- (a) 10
- (b) 11
- (c) 13
- (d) 12



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Q30.

If  $a + b + c = 0$  Find the value of

$$\frac{1}{a^2 + b^2 - c^2} + \frac{1}{b^2 + c^2 - a^2} + \frac{1}{c^2 + a^2 - b^2}$$

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

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