

Mathematics General Science Test Medium Mode

Sr	Questions	Answers Choice
1	If $S = \{3, 6, 9, 12, \dots\}$, then	A. $S =$ Four multiples of 3 B. $S =$ Set of even numbers C. $S =$ Set of prime numbers D. $S =$ All multiples of 3
2	Question Image	A. direction ratios B. direction cosines C. direction angles D. none of these
3	$\rho =$	A. 1 B. 2 C. -1 D. 0
4	The direction cosines of any normal to the xy -plane are	A. $\langle 1, 0, 0 \rangle$ B. $\langle 0, 1, 0 \rangle$ C. $\langle 1, 1, 0 \rangle$ D. $\langle 0, 0, 1 \rangle$
5	Question Image	
6	Question Image	A. 0 B. 1 C. -1 D. undefined
7	If $z = (x, y)$ then z has no multiplicative inverse when	A. $x \neq 0, y = 0$ B. $x = 0, y = 0$ C. $x = 0, y \neq 0$ D. None of these
8	$\cot(3\pi/2 - \theta) =$ _____;	A. $\tan\theta$ B. $\cot\theta$ C. $-\tan\theta$ D. $-\cot\theta$
9	In ΔABC if $\gamma = 90^\circ$ then the Pythagoras theorem is	A. $b^2 + c^2 = a^2$ B. $a^2 + b^2 = c^2$ C. $a^2 + c^2 = b^2$ D. None of these
10	The period $\sin^2\theta$ is	A. π B. $\pi/2$ C. 2π D. $\pi/4$
11	Which of the following sets is finite	A. The set of natural numbers between 3 and 10 B. The set of rational numbers between 3 and 10 C. The set of real numbers between 0 and 1 D. The set of rational numbers between 0 and 1
12	The polar form of complex number $x + iy =$	A. $r \cos\theta + i r \sin\theta$ B. $r \cos\theta + i r \sin\theta$ C. $r \cos\theta + i r \sin\theta$ D. $r \cos\theta + i r \sin\theta$
13	The two lines $y = 2x$ and $x = 2y$ are	A. Parallel B. Perpendicular C. Equally inclined with axes D. Congruent
14	Question Image	
15	If b_1, b_2, b_3, \dots are in G.P. with first term unity and common ratio r , then the minimum value of $b_1 - b_3 + b_5$ is equal to	A. $3/4$ B. $1/4$ C. 1 D. None of these

16	The law of cosines is	
17	$\{x : x \in \mathbb{Z} \text{ and } x < 1\}$ is	<p>A. Singleton set</p> <p>B. A set with two points</p> <p>C. Empty set</p> <p>D. None of these</p>
18	An A.P., a G.P. and a H.P. have the same first and last terms and the same odd numbers of terms, the middle terms of the three series are in	<p>A. A.P.</p> <p>B. G.P.</p> <p>C. H.P.</p> <p>D. None of these</p>
19	A square matrix $A = [a_{ij}]$ is lower triangular matrix when	<p>A. $a_{ij} = 0$ for all $i < j$</p> <p>B. $b_{ij} = 0$</p> <p>C. $c_{ij} = 0$</p> <p>D. $d_{ij} = 0$</p>
20	A farmer possesses 100 hectares of land and wants to grow corn and wheat. Cultivation of corn requires 3 hours per hectare while cultivation of wheat requires 2 hours per hectare. Working hours cannot exceed 240. If he gets a profit of Rs. 20 per hectare for corn and Rs. 15 per hectare for wheat. The profit function for the farmer is	<p>A. $P(x, y) = 20x + 15y$</p> <p>B. $P(x, y) = 2x + 3y$</p> <p>C. $P(x, y) = x + y$</p> <p>D. $P(x, y) = 3x + 2y$</p>