

Mathematics (Objective Type)

Marks: 20

Time: 30 Minutes

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

- 1.1. $\frac{3}{10} =$
(A) 0 (B) ∞ (C) 3 (D) 6
2. C^n is valid only if:
(A) $r < n$ (B) $r > n$ (C) $r \leq n$ (D) $r \geq n$
3. Sum of exponents of a and b in the expansion of $(a+b)^n$ in each term is.
(A) n (B) 2n (C) n^2 (D) $n+1$
4. End in the expansion of $\left(\frac{3x}{2} - \frac{1}{3x}\right)^{11}$ is _____.
(A) 5th (B) 7th (C) 4th (D) 8th
5. What angle is quadrantal.
(A) 30° (B) 45° (C) 270° (D) 190°
6. $1 - \cos 2\theta =$
(A) $2\sin^2 \theta$ (B) $2\cos^2 \theta$ (C) $2\sin^2 \frac{\theta}{2}$ (D) $2\cos^2 \frac{\theta}{2}$
7. Domain of Tangent function is \mathbb{R} excluding _____.
(A) $\frac{n\pi}{2}$ (B) $2n\frac{\pi}{3}$ (C) $(2n+1)\frac{\pi}{2}$ (D) $(2n+1)\frac{\pi}{3}$
8. With usual notation, $2S - b =$ _____
(A) $a - c$ (B) $a + c$ (C) $2b + c$ (D) $2b + b + 2c$
9. Radius of e - circle is given by.
(A) $\frac{\Delta}{S-b}$ (B) $\frac{\Delta}{S+b}$ (C) $\frac{S-b}{\Delta}$ (D) $\frac{\Delta}{S+c}$
10. $x \geq +1$ or $x \leq -1$ is the domain of.
(A) $\sin x$ (B) $\cos^{-1} x$ (C) $\sec^{-1} x$ (D) $\cot^{-1} x$
11. The solution of $\sin x + \cos x = 0$ in $[0, 2\pi]$
(A) $\frac{3\pi}{4}$ (B) $\frac{\pi}{4}$ (C) $\frac{\pi}{6}$ (D) $\frac{\pi}{3}$
12. Argument (θ) of $(\sqrt{3} + i)$ is.
(A) 60° (B) 30° (C) 45° (D) 90°
13. $\{I, \omega, \omega^2\}$ is group under.
(A) Addition (B) Subtraction (C) Multiplication (D) Intersection
14. For non singular matrices A and B $XA = B^{-1} \Rightarrow X =$
(A) $A^{-1}B$ (B) AB^{-1} (C) $(AB)^{-1}$ (D) $(BA)^{-1}$
15. If order of A is $n \times m$ and order of B is $m \times n$ then order of $(AB)^T$ is.
(A) $n \times m$ (B) $m \times m$ (C) $m \times n$ (D) $n \times n$
16. If $4^x = \frac{1}{2}$ then $x =$
(A) $-\frac{1}{2}$ (B) -2 (C) $\frac{1}{2}$ (D) 2
17. If $x-a$ is a factor of $f(x)$, then for $f(x) = 0$ $x = a$ is.
(A) Root (B) Factor (C) Polynomial (D) Degree
18. Partial fraction of $\frac{1}{x^3+1}$ will be of the form.
(A) $\frac{A}{x+1} + \frac{B}{x^2+x+1}$ (B) $\frac{A}{x+1} + \frac{Bx+C}{x^2-x+1}$ (C) $\frac{A}{x+1} + \frac{Bx+C}{x^2+x+1}$ (D) $\frac{Ax+B}{x^2+1} + \frac{C}{x^2-x+1}$
19. Geometric series is convergent if.
(A) $|r| < 1$ (B) $|r| > 1$ (C) $|r| \leq 1$ (D) $|r| \geq 1$
20. $\sum_{k=1}^n K^2 =$
(A) $\frac{n(n-1)(n-2)}{3}$ (B) $\frac{n(n-1)(n-2)}{6}$ (C) $\frac{n(n+1)(2n+1)}{3}$ (D) $\frac{n(n+1)(2n+1)}{6}$