

Roll No _____ (To be filled in by the candidate)

MATHEMATICS (Academic Sessions 2020 – 2022 to 2023 – 2025)

Q.PAPER – I (Objective Type) 224-1st Annual-(INTER PART – I) Time Allowed : 30 Minutes

GROUP – II

Maximum Marks : 20

PAPER CODE = 6196

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	If A is a matrix of order 2×3 , then order of $A'A$ is : (A) 3×3 (B) 2×3 (C) 3×2 (D) 2×2
2	The equation $x(x-1)=x^2-x$ is : (A) Conditional (B) Identity (C) Exponential (D) Radical
3	The multiplicative inverse of $-i$ is : (A) $(1, -1)$ (B) $(0, -1)$ (C) $(0, 1)$ (D) $(1, 0)$
4	If ω is a cube root of unity, then $(1+\omega+\omega^2)^8 =$: (A) 0 (B) 256 (C) 256ω (D) $256\omega^2$
5	Which of the following sets has closure property w.r.t. addition : (A) $\{1\}$ (B) $\{0\}$ (C) $\{0, 1\}$ (D) $\{1, -1\}$
6	If $ A =9$, then $ A' $ is : (A) 81 (B) $\frac{1}{9}$ (C) -9 (D) 9
7	The converse of $p \rightarrow q$ is : (A) $\sim p \rightarrow \sim q$ (B) $\sim q \rightarrow p$ (C) $q \rightarrow p$ (D) $p \rightarrow \sim q$
8	If $A = \{\}$, then the power set of A is : (A) ϕ (B) $\{0\}$ (C) $\{\}$ (D) $\{\phi\}$
9	If $4^{1+x} = 2$, then $x =$: (A) 0 (B) -2 (C) $-\frac{1}{2}$ (D) $\frac{1}{2}$
10	If $A \cap B = A$, then : (A) $B \subseteq A$ (B) $A \subseteq B$ (C) $A \cup B = A$ (D) $B \cup A = A$
11	$\sin(270^\circ + \theta) =$: (A) $\sin \theta$ (B) $\cos \theta$ (C) $-\cos \theta$ (D) $-\sin \theta$
12	Which cannot be the term of a G.P. : (A) 1 (B) -1 (C) 0 (D) i

(Turn Over)

1-13	If $\sin x = -\frac{\sqrt{3}}{2}$, then the reference angle is : (A) $-\frac{\pi}{6}$ (B) $\frac{\pi}{6}$ (C) $-\frac{\pi}{3}$ (D) $\frac{\pi}{3}$
14	Which angle is quadrantal angle : (A) 45° (B) 60° (C) 120° (D) 270°
15	With usual notation, $\frac{abc}{4R} = :$ (A) r (B) r_1 (C) Δ (D) r_2
16	H.M. between 3 and 7 is : (A) 5 (B) $\sqrt{21}$ (C) $\pm\sqrt{21}$ (D) $\frac{21}{5}$
17	The number of terms in the expansion of $(a+x)^n$ is : (A) $n-1$ (B) n (C) $n+2$ (D) $n+1$
18	The period of $\cos 2x$ is : (A) π (B) 2π (C) 4π (D) $\frac{\pi}{2}$
19	If $r = n$, then ${}^nC_r = :$ (A) 0 (B) 1 (C) n (D) $n!$
20	$\sin^{-1}(0) + \cos^{-1}(0) = :$ (A) 0 (B) $\frac{\pi}{2}$ (C) $\frac{\pi}{3}$ (D) $\frac{\pi}{4}$