

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

LHR-2-24

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)

(2)

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)	$\frac{\pi}{4}$