Roll No. _____

MATHEMATICS **(INTER PART-I) 321-(I)** **PAPER: I** **GROUP: II**

Time: 30 Minutes **OBJECTIVE** **Marks: 20**

Code: 6192

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 or 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- The property used in $\forall\ a, b \in R \quad a = b \wedge b = c \Rightarrow a = c$

(A) reflexive (B) symmetric (C) transitive (D) trichotomy

2- The converse of $p \rightarrow q$ is

(A) $\sim p \rightarrow \sim q$ (B) $\sim q \rightarrow \sim p$ (C) $q \rightarrow p$ (D) $\sim p \rightarrow q$

3- If A is a square matrix of order 3 then $|kA| =$

(A) $k|A|$ (B) $k^2|A|$ (C) $k^3|A|$ (D) $k|A^3|$

4- A square matrix is skew symmetric matrix, if $A^t =$

(A) A (B) $\overline{A}$ (C) A^t (D) $-A$

5- If ω is complex cube roots of unity, then conjugate of ω is

(A) ω^2 (B) $-\omega^2$ (C) $-\omega$ (D) $-i$

6- The product of roots of equation $4x^2 + 7x - 3 = 0$ is

(A) $\frac{7}{4}$ (B) $-\frac{7}{4}$ (C) $\frac{3}{4}$ (D) $-\frac{3}{4}$

7- In $\frac{P(x)}{Q(x)}$, if degree of $P(x) \geq$ degree of $Q(x)$ then fraction is

(A) proper (B) improper (C) irrational (D) identity

8- Next term of sequence 1, 3, 7, 15, 31, ... is

(A) 39 (B) 47 (C) 55 (D) 63

9- Sum of infinite geometric series is valid, if

(A) $r < 1$ (B) $|r| < 1$ (C) $|r| = 1$ (D) $|r| > 1$

10- The sequence $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \ldots\ldots$ is

(A) H . P (B) A . P (C) G. P (D) arithmetic series

11- $(n-1)(n-2)(n-3) \ldots\ldots\ldots\ldots (n-r+1) =$

(A) $\frac{(n-1)!}{(n-r)!}$ (B) $\frac{n!}{(n-r)!}$ (C) $\frac{(n-1)!}{(n-r+2)!}$ (D) $\frac{n!}{(n-r+1)!}$

(Turn over)

12- The number of terms in the expansion of $(1+x)^{1/2}$ are

(A) $\frac{3}{2}$ (B) 7 (C) 6 (D) infinite

13- If $\tan\theta = \frac{8}{15}$, $\pi < \theta < 3\frac{\pi}{2}$, then $\cos\theta =$

(A) $\frac{-17}{15}$ (B) $\frac{17}{15}$ (C) $\frac{15}{17}$ (D) $\frac{-15}{17}$

14- Which of the following is not quadrantal angle

(A) $\frac{\pi}{2}$ (B) $4\frac{\pi}{3}$ (C) $9\frac{\pi}{2}$ (D) 13π

15- $\cot\left(3\frac{\pi}{2} - \theta\right) =$

(A) $\tan\theta$ (B) $-\tan\theta$ (C) $\cot\theta$ (D) $-\cot\theta$

16- Range of $y = \cos x$ is

(A) $-1 \le x \le 1$ (B) $-\infty < x < \infty$ (C) $-1 \le y \le 1$ (D) $-\infty < y < \infty$

17- Area of triangle ABC is

(A) $\frac{1}{2}ab\sin\beta$ (B) $\frac{1}{2}bc\sin\alpha$ (C) $\frac{1}{2}ac\sin\gamma$ (D) $\frac{1}{2}ab\sin\alpha$

18- With usual notation $2s - b =$

(A) $a - c$ (B) $a + c$ (C) $a + 2b + c$ (D) $2a + b + 2c$

19- $\cos^{-1}(-x) =$

(A) $-\cos^{-1}x$ (B) $\cos^{-1}x$ (C) $\pi - \cos^{-1}x$ (D) $\frac{\pi}{2} - \cos^{-1}x$

20- If $n \in Z$, then general solution of equation $\sin x = 0$ is

(A) $\left\{n\frac{\pi}{2}\right\}$ (B) $\left\{n\frac{\pi}{3}\right\}$ (C) $\left\{n\frac{\pi}{4}\right\}$ (D) $\{n\pi\}$