☆☆☆☆	Roll No _____

HSSC-(P-I)-A/2024
(For All Sessions)

Paper Code	6	1	9	7

Mathematics(Objective)

Group-I **Time: 30 Minutes** **Marks : 20**

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1 Four 4^{th} roots of 625 are:

(A) $\pm 4, \pm 4i$ (B) $\pm 5, \pm 5i$ (C) $\pm 16, \pm 16i$ (D) $\pm 25, \pm 25i$

2. Partial fractions of $\frac{x^2+1}{(x+1)(x-1)}$ are of the form:

(A) $\frac{A}{x+1}+\frac{B}{x-1}$ (B) $\frac{Ax}{x+1}+\frac{B}{x-1}$ (C) $1+\frac{A}{x+1}+\frac{B}{x-1}$ (D) $\frac{Ax+B}{x+1}+\frac{Cx+D}{x-1}$

3. $A.M$ between $x-3$ and $x+5$ is:

(A) $x+1$ (B) $x-1$ (C) $x-3$ (D) $x+5$

4. No term of a $G.P$ can be:

(A) 0 (B) 1 (C) -1 (D) i

5. $8.7.6 =$

(A) $\frac{8!}{8}$ (B) $\frac{8!}{7!}$ (C) $\frac{8!}{6!}$ (D) $\frac{8!}{5!}$

6. $4^n > 3^n + 4$ is true for integers:

(A) $n \geq 2$ (B) $n \geq 3$ (C) $n \geq 4$ (D) $n \geq 5$

7. If $sin\theta < 0$ and $cos\theta > 0$, then terminal arm of θ lies in quadrant:

(A) I (B) II (C) III (D) IV

8. $\frac{1-cos\theta}{2} =$

(A) $sin\theta$ (B) $sin^2\frac{\theta}{2}$ (C) $cos\,\theta$ (D) $cos^2\frac{\theta}{2}$

9. Range of $y = tanx$ is:

(A) $\frac{-\pi}{2} \leq y \leq \frac{\pi}{2}$ (B) $-\infty < y < \infty$ (C) $\frac{-\pi}{2} \leq x \leq \frac{\pi}{2}$ (D) $-\infty < x < \infty$

10. $2\mathcal{R}\,sin\propto =$ (A) r (B) S (C) Δ (D) a

11. $Sin\left(cos^{-1}\frac{\sqrt{3}}{2}\right) =$ (A) $\frac{1}{2}$ (B) $\frac{\sqrt{3}}{2}$ (C) $\frac{1}{\sqrt{3}}$ (D) 1

12. Reference Angle for $1 - 2\,sinx = 0$ is: (A) $\frac{\pi}{6}$ (B) $\frac{\pi}{4}$ (C) $\frac{\pi}{3}$ (D) $\frac{\pi}{2}$

13. $\forall z \in C$, which one is true:

(A) $z = -z$ (B) $\bar{z} = -z$ (C) $\bar{\bar{z}} = z$ (D) $\bar{\bar{z}} = -z$

14. A prime number can be factor of a square only if it occurs in it at least.

(A) Once (B) Twice (C) Thrice (D) Four times

15. If A and B are disjoint sets, then $A - B =$

(A) B (B) A (C) $B - A$ (D) ϕ

16. The converse of $\sim p \rightarrow q$ is:

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

17. $p \wedge q$ is called:

(A) Conjunction (B) Disjunction (C) Conditional (D) Equivalence

18. $(AB)^t =$

(A) A^tB^t (B) A^tB (C) AB (D) B^tA^t

19. A square matrix A is anti-symmetric if:

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

20. $1 + \omega + \omega^2 =$

(A) 1 (B) ω (C) ω^2 (D) 0