



Roll No. _____ to be filled in by the candidate.

(For all sessions)

Paper Code	6	1	9	1
------------	---	---	---	---

Mathematics (Objective Type)

Time: 30 Minutes

Marks: 20

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A,B,C & 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. Multiplicative identity of complex number is:

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

2. The contrapositive of $\sim p \rightarrow \sim q$ is:

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

3. If A and B are any two non singular matrices then $(AB)^{-1} =$

- (A) $A^{-1}B^{-1}$ (B) $B^{-1}A^{-1}$ (C) BA (D) AB

4. For a non-singular matrix A if $XA=B$ then $X =$

- (A) $A^{-1}B$ (B) BA^{-1} (C) $(AB)^{-1}$ (D) $(BA)^{-1}$

5. If $f(x) = 3x^4 + 4x^3 + x - 5$ is divided by $x+1$, then remainder is:

- (A) -6 (B) 7 (C) 6 (D) -7

6. If w is cube root of unity, then $w^{15} =$

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

7. Partial fraction of $\frac{3x-11}{(x^2+1)(x+3)}$ will be of the form.

- (A) $\frac{Ax+B}{x^2+1} + \frac{C}{x+3}$ (B) $\frac{A}{x^2+1} + \frac{Bx+C}{x+3}$ (C) $\frac{Ax+B}{x+3} + \frac{C}{x^2+1}$ (D) $\frac{A}{x^2+1} + \frac{B}{x+3}$

8. If $a_n = (-1)^{n+1}$, then 26th term is:

- (A) 1 (B) -1 (C) 26 (D) -26

9. $(n+1)^{th}$ term of G.P is:

- (A) $a_1 r^{n-1}$ (B) $a_1 r^{n+1}$ (C) $a_1 r^{n+2}$ (D) $a_1 r^n$

10. n^{th} term of A.P is:

- (A) $a_1(n-1)d$ (B) $a_1 + (n+1)d$ (C) $2a_1 + (n-1)d$ (D) $a_1 + (2n-1)d$

11. With usual notation $C_r + C_{r-1} =$

(A) C_{r+1}^n (B) C_r^{n+1} (C) C_{r-1}^{n-1} (D) C_{r-1}^{n+1}

12. In the expansion of $(a+b)^7$, the second term is:

(A) a^7 (B) $7a^6b$ (C) $7ab^6$ (D) 8

13. In one hour, the hour hand of a clock turns through an angle.

(A) $\frac{\pi}{8}$ (B) $\frac{\pi}{4}$ (C) $\frac{\pi}{6}$ (D) $\frac{\pi}{2}$

14. $3\frac{\pi}{4}$ radian is equal to:

(A) 110° (B) 135° (C) 150° (D) 130°

15. $\sin(-300^\circ) =$

(A) $-\frac{\sqrt{3}}{2}$ (B) $\frac{\sqrt{3}}{2}$ (C) $\frac{1}{2}$ (D) 0

16. Period of $\sin x$ is:

(A) π (B) 2π (C) 3π (D) $-\pi$

17. Radius of escribed circle opposite to vertex C is:

(A) $\frac{\Delta}{s-a}$ (B) $\frac{\Delta}{s-b}$ (C) $\frac{\Delta}{s-c}$ (D) $\frac{\Delta}{s}$

18. With usual notation $a+b-c =$

(A) $2S$ (B) $2S-2C$ (C) $2S-2b$ (D) $2S-c$

19. $2 \tan^{-1} A =$

(A) $\tan^{-1} \frac{2A}{1-A^2}$ (B) $\tan^{-1} \frac{2A}{1+A^2}$ (C) $\tan^{-1} \frac{A}{1-A^2}$ (D) $\tan^{-1} \frac{A}{1+A^2}$

20. Solution of $\cot \theta = \frac{1}{\sqrt{3}}$ in quadrant III is:

(A) $\frac{5\pi}{3}$ (B) $\frac{7\pi}{6}$ (C) $\frac{4\pi}{3}$ (D) $\frac{7\pi}{3}$