

Inter (Part-I) 2017

Mathematics	Group-II	PAPER: I
Time: 30 Minutes	(OBJECTIVE TYPE)	Marks: 20

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 the n th term of an A.P is $\frac{1}{2}(3 - n)$, then first three terms are:

- (a) 3, 2, 1 (b) 1, 2, 3
(c) 1, 2, 1 (d) $1, \frac{1}{2}, 0$ ✓

2- Radius of escribed circle opposite to vertex A is equal to:

- (a) $\frac{\Delta}{s}$ (b) $\frac{\Delta}{s - b}$
(c) $\frac{\Delta}{s - c}$ ✓ (d) $\frac{\Delta}{s - a}$ ✓

3- An equation containing at least one trigonometric function is called:

- (a) Algebraic equation
(b) Quadratic equation
(c) Linear equation
(d) Trigonometric equation ✓

4- If a function $f : A \rightarrow B$ is such that $\text{Range } f = B$, then f is called:

- (a) Injective (b) Surjective ✓
(c) Into (d) Periodic

5- The fraction $\frac{x^2 + 7x + 3}{x + 1}$ is:-

- (a) Improper ✓ (b) Proper
(c) Equivalent (d) Identity

- 6- ${}^n C_0$ is equal to:
- (a) ${}^n P_2$ (b) ${}^n C_n \checkmark$
(c) ${}^n C_2$ (d) ${}^n C_{n+1}$
- 7- The inverse of a square matrix exists if A is:
- (a) Singular (b) Non-singular \checkmark
(c) Symmetric (d) Rectangular
- 8- The domain of $\cos x$ is:
- (a) $[0, 1]$ (b) $\mathbb{R} \checkmark$
(c) $[-1, 1]$ (d) $[-1, 0]$
- 9- $\cos(\sec^{-1} 1)$ is equal to:
- (a) $1 \checkmark$ (b) 0
(c) 30° (d) 2
- 10- The point of intersection of the angular bisectors of a triangle is called:
- (a) Circum centre (b) Orthocentre
(c) In-centre \checkmark (d) Centroid
- 11- $\frac{\sec \theta}{\operatorname{cosec} \theta}$ is equal to:
- (a) $\cos \theta$ (b) $\tan \theta \checkmark$
(c) $\cot \theta$ (d) $\sin \theta$
- 12- One root of the equation $x^2 - 3x + a = 0$ is 2, then a is:
- (a) -2 (b) $2 \checkmark$
(c) 3 (d) -3
- 13- $\frac{{}^n P_r}{r!}$ is equal to:
- (a) ${}^n C_r \checkmark$ (b) ${}^n C_{r-1}$
(c) ${}^{n+1} C_r$ (d) ${}^{n-1} C_r$
- 14- $|a + bi|$ is equal to:
- (a) $\sqrt{a^2 + b^2} \checkmark$ (b) $\sqrt{a^2 - b^2}$
(c) $\sqrt{-a^2 - b^2}$ (d) $\sqrt{b^2 - a^2}$
- 15- Geometric mean between 4 and 16 is:
- (a) ± 4 (b) $\pm 8 \checkmark$
(c) ± 16 (d) ± 64

- 16- The number of terms in the expansion of $(x^2 - 1)^7$ is:
(a) 2 (b) 7
(c) 8 ✓ (d) 12
- 17- A quadratic equation has degree:
(a) One (b) Two ✓
(c) Three (d) Four
- 18- $\tan(\pi - \alpha)$ is equal to:
(a) $\tan \alpha$ (b) $-\tan \theta$
(c) $-\tan \alpha$ ✓ (d) $\cot \alpha$
- 19- If A and B are matrices, then $(AB)^t$ is equal to:
(a) $B^t \cdot A^t$ ✓ (b) $A^t \cdot B^t$
(c) AB (d) BA
- 20- The expansion of $(1 + 2x)^{-1}$ is valid if:
(a) $|x| < \frac{1}{2}$ ✓ (b) $|x| > \frac{1}{2}$
(c) $|x| < 1$ (d) $|x| < 2$

