# Inter (Part-I) 2018

| 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-** $2 \sin\left(\frac{P+Q}{2}\right) \cos\left(\frac{P-Q}{2}\right) =$ ----- :

(a) $\sin P + \sin Q$ ✓ (b) $\sin P - \sin Q$

(c) $\cos P + \cos Q$ (d) $\cos P - \cos Q$

**2-** **With usual notation** ${}^nC_0 =$ :

(a) 1 ✓ (b) 0

(c) n (d) 2

**3-** $\sin^{-1} A - \sin^{-1} B =$ ---- :

(a) $\sin^{-1}(A\sqrt{1-B^2} - B\sqrt{1-A^2})$ ✓

(b) $\sin^{-1}(A\sqrt{1-B^2} + B\sqrt{1-A^2})$

(c) $\cos^{-1}(A\sqrt{1-B^2} - B\sqrt{1-A^2})$

(d) $\cos^{-1}(A\sqrt{1-B^2} + B\sqrt{1-A^2})$

**4-** **Values of trigonometric functions of the quadrantal angle 765° are same as of the angle:**

(a) 30° (b) 45° ✓

(c) 60° (d) 90°

**5-** **Solution of** $\cot\theta = \frac{1}{\sqrt{3}}$ **in quadrant-III:**

(a) $\frac{5\pi}{4}$ (b) $\frac{7\pi}{6}$

(c) $\frac{4\pi}{3}$ ✓ (d) $\pi$

6- The sum of coefficients in the binomial expansion when n = 4 is:

(a) 1 (b) 8

(c) 16 ✓ (d) 32

7- With usual notation, the "circum-radius" R = ---- :

(a) $\frac{\Delta}{s}$ (b) $\frac{abc}{4\Delta}$ ✓

(c) $\frac{\Delta}{abc}$ (d) $\frac{s}{\Delta}$

8- Period of 3 sin 2x is:

(a) $6\pi$ (b) $2\pi$

(c) $\pi$ ✓ (d) $\frac{\pi}{2}$

9- Which one is divisible by 2 for all positive integral values of n:

(a) $n^3 - n$ (b) $5^n - 1$ ✓

(c) $5^n - 2^n$ (d) $n^2 + n$

10- In law of tangents, $\frac{\tan\left(\frac{\beta-\gamma}{2}\right)}{\tan\left(\frac{\beta+\gamma}{2}\right)}$ = :

(a) $\frac{a-b}{a+b}$ (b) $\frac{c-a}{c+a}$

(c) $\frac{c-b}{c+b}$ (d) $\frac{b-c}{b+c}$ ✓

11- If 'ω' be the cube root of unity, then $\omega^2$ = :

(a) $\frac{-1-\sqrt{3}i}{2}$ ✓ (b) $\frac{1-\sqrt{3}i}{2}$

(c) 1 (d) $\frac{1+\sqrt{3}i}{2}$

12- Multiplicative inverse of complex number –3 – 5i is:

(a) $\frac{3}{34}+\frac{5}{34}i$ (b) $\frac{-3}{34}-\frac{5}{34}i$

(c) $\frac{-3}{34}+\frac{5}{34}i$ ✓ (d) $\frac{-3}{\sqrt{34}}+\frac{5}{\sqrt{34}}i$

13- Simplify form of $\frac{10!}{7!}$ is equal to:

(a) 720 ✓ (b) 620
(c) 520 (d) 420

14- If matrix $\begin{bmatrix} x & 4 \\ 2 & 8 \end{bmatrix}$ is singular, then x = :

(a) 0 (b) –1
(c) 2 (d) 1 ✓

15- Geometric mean between 4 and 16 are:

(a) 10 (b) ± 8 ✓
(c) $\frac{32}{5}$ (d) 64

16- Roots of the equation $x^2 - 7x + 10 = 0$ are:

(a) (2, –5) (b) (–2, 5)
(c) (2, 5) ✓ (d) (–2, –5)

17- Formula for the sum of n terms of A.P. (Arithmetic progression):

(a) $a_n = a_1 + (n-1)d$ (b) $s_n = \frac{n}{2}(a_1 + a_n)$ ✓
(c) $s_n = \frac{a_1(1-r^n)}{1-r}$ (d) $s = \frac{a_1}{1-r}$

18- Tabular form of $\{x \mid x \in E \wedge 4 < x < 6\}$ is:

(a) { } ✓ (b) {4}
(c) {6} (d) {4, 6}

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

(a) $\frac{A}{x^2+1} + \frac{B}{x-1}$ (b) $\frac{A}{x+1} + \frac{B}{(x^2+1)} + \frac{C}{x-1}$
(c) $\frac{A}{x^2+1} + \frac{Bx+C}{x-1}$ (d) $\frac{Ax+B}{x^2+1} + \frac{C}{x-1}$ ✓

20- A matrix A is said to be symmetric, if:

(a) $A^t = -A$ (b) $A^t = A$ ✓
(c) $(\bar{A})^t = A$ (d) $(\bar{A})^t = -A$