Inter (Part-II) 2019

Mathematics	Group-II	PAPER: II
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- $\frac{d}{dx}(\sqrt{x}) =$:

(a) $\sqrt{x}$ (b) $\frac{1}{\sqrt{x}}$

(c) $\frac{1}{2x}$ (d) $\frac{1}{2\sqrt{x}}$ ✓

2- $\int \tan x \, dx =$:

(a) In $|\sec x| + c$ ✓ (b) In $|\cos ecx| + c$

(c) In $|\sin x| + c$ (d) In $|\cot x| + c$

3- $\int \frac{e^x}{e^x + 3} dx =$:

(a) $\ln(e^x + 3) + c$ ✓ (b) $e^{2x} + c$

(c) $e^0 + c$ (d) $e^{2x} + 3 + c$

4- $\frac{d}{dx}(\cos x^2) =$:

(a) $2x \sin x^2$ (b) $-2x \sin x^2$ ✓

(c) $2 \cos x$ (d) $-2 \sin x$

5- If $y = \sin^{-1}\frac{x}{a}$, then sin y = :

(a) $\cos y$ (b) $\cos x$

(c) $\frac{x}{a}$ ✓ (d) $\frac{y}{a}$

6- The function $y = 27 + x^2$ is a / an:

(a) Constant function (b) Even function

(c) Implicit function (d) Explicit function ✓

7- A function f(x) has relative maximum at x = c, if f'(c) = 0 and :

(a) $f''(c) > 0$ (b) $f''(c) < 0$ √

(c) $f''(c) = 0$ (d) $f'(c) \neq 0$

8- $\int \sec^2 x \, dx =$:

(a) $\cot x + c$ (b) $\tan x + c$ √

(c) $2 \sec x + c$ (d) $\dfrac{1}{\cos^2 x} + c$

9- $\displaystyle\int_{-\pi}^{\pi} \sin x \, dx =$:

(a) 2π (b) 0 √

(c) 1 (d) $\cos \pi$

10- If $f(x) = 2x + 1$, then $f^{-1}(x) = ?$:

(a) $2x - 1$ (b) $1 - 2x$

(c) $x - \dfrac{1}{2}$ (d) $\dfrac{x - 1}{2}$ √

11- y-intercept of the line $2x - y - 4 = 0$ is:

(a) 2   (b) −2

(c) 4   (d) −4 √

12- An angle in the semi-circle is of measure:

(a) 30°   (b) 60°

(c) 90° √   (d) 180°

13- The perpendicular distance of a line $5x + 12y = 7$ from origin is:

(a) $\dfrac{1}{13}$ (b) $\dfrac{13}{7}$

(c) $\dfrac{7}{13}$ √   (d) −7

14- Equation of latus-rectum of parabola $y^2 = 4ax$ is:

(a) $x = -a$ (b) $y = -a$

(c) $x = a$ √   (d) $y = a$

15- The mid-point of line segment joining A(−8, 3), B(2, −1) is:

(a) (−6, 2)   (b) (10, 4)

(c) (−3, 1) √   (d) (−16, −3)

16- The triple scalar product of vectors, calculates the volume of:

(a) Triangle   (b) Parallelogram

(c) Tetrahedron   (d) Parallelepiped ✓

17- The equation of line $\frac{x}{b} + \frac{y}{a} = 1$ is in:

(a) Normal form   (b) Intercept form ✓

(c) Point-slope form   (d) Two-points form

18- The radius of circle $x^2 + y^2 = 5$ is:

(a) 25   (b) $\sqrt{5}$ ✓

(c) 5   (d) (0, 0)

19- Non-zero vector $\underline{a}$ and $\underline{b}$ are parallel, if $\underline{a} \times \underline{b} =$:

(a) 0 ✓   (b) 1

(c) −1   (d) (a, b)

20- The solution of the inequality $x + 2y < 6$ is:

(a) (1, 1) ✓   (b) (1, 3)

(c) (1, 4)   (d) (1, 5)