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

Inter. (Part-II)-A-2022

Mathematics (Objective Type)

(For all Sessions)

Paper Code | 8 | 1 | 9 | 8 |

Time: 30 Minutes

Marks: 20

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

1.1. Slope of $12x + 35y - 7 = 0$ is _____

(A) $12/35$ (B) $-12/35$ (C) $1/35$ (D) 12

2. Normal form of $x + y = 1$ is _____

(A) $x\cos\frac{\pi}{3} + y\sin\frac{\pi}{3} = \frac{1}{\sqrt{2}}$ (B) $x\cos\frac{\pi}{2} + y\sin\frac{\pi}{2} = 1$

(C) $x\cos\frac{\pi}{4} + y\sin\frac{\pi}{4} = \frac{1}{\sqrt{2}}$ (D) $x + y = 2$

3. If $P(x, y) = 40x + 50y$ then $P(1, -1)$ = _____

(A) 10 (B) 40 (C) 50 (D) -10

4. Centre of $5x2 + 5y2 + 24x + 36y + 10 = 0$ is _____

(A) $(-12, -18)$ (B) $\left(\frac{-12}{5}, \frac{-18}{5}\right)$ (C) $(12, 18)$ (D) $(-12, 18)$

5. Axis of $y2 = -4ax$ is _____

(A) $y = 0$ (B) $y = a$ (C) $x = 0$ (D) $x = a$

6. Vertices of $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is _____

(A) $(\pm b, 0)$ (B) (a, b) (C) $(\pm a, 0)$ (D) $(-a, -b)$

7. Scalar triple product of coplaner vectors is _____

(A) 1 (B) 0 (C) 2 (D) -1

8. $2\underline{i} \times 2\underline{j} \cdot 2\underline{k}$ = _____

(A) 4 (B) 2 (C) 8 (D) 16

9. Which one is even function

(A) $\sin x$ (B) $\cos x$ (C) $\tan x$ (D) x^{101}

10. If $f(x) = \sqrt{x^2 - 9}$; then range of $f(x)$ is _____

(A) $(0, -\infty)$ (B) $(-\infty, \infty)$ (C) $(-5, 5)$ (D) $(0, +\infty)$

11. $\frac{d}{dx} 2^x$ = _____

(A) $2^x \ell n 2$ (B) $2^x \ell n e$ (C) $2^x \ell n 4$ (D) $x\, 2^{x-1}$

12. Leibniz used _____ notation for derivative.

(A) $\dot{f}(x)$ (B) $f'(x)$ (C) $D f(x)$ (D) $\frac{dy}{dx}$

13. $\frac{d}{dx}(\text{cosec } 7x)$ = _____

(A) $\text{cosec } 7x \cot 7x$ (B) $-\text{cosec } x \cot x$ (C) $-7\text{cosec } 7x \cot 7x$ (D) $\text{cosec } 7x \tan 7x$

14. Which one is decreasing function

(A) $2 - 4x$ (B) $4x - 2$ (C) $4x$ (D) $4x + 5$

15. $d(xy)$ = _____

(A) $xdx + ydy$ (B) $(x + y)dx$ (C) $xdy + ydx$ (D) $xdy - ydx$

16. $\int \sec x\, dx$ = _____

(A) $\ell n |\sec x - \tan x| + c$ (B) $\ell n |\sec x + \cot x| + c$

(C) $\ell n |\sec x + \text{cosec } x| + c$ (D) $\ell n |\sec x + \tan x| + c$

17. $\int_0^1 |x|\, dx$ = _____

(A) 1 (B) 2 (C) 0 (D) $1/2$

18. Solve $\frac{1}{y}dy = \frac{1}{x}dx$

(A) $y = xc$ (B) $y = -xc$ (C) $y = x^2 + c$ (D) $xy = c$

19. Distance between $A(-1, 2)$ and $C(2, -6)$ is _____

(A) $\sqrt{73}$ (B) $\sqrt{70}$ (C) 7 (D) 8

20. If $m_1 = m_2$ then lines are _____

(A) perpendicular (B) not parallel

(C) parallel (D) neither parallel nor perpendicular