Roll No. of Candidate _____

MATHEMATICS | **Intermediate Part-II , Class 12th (1st A 424- IV)** | **GROUP: II**
Time: 30 Minutes | **OBJECTIVE** | **PAPER: II**
Code: 8198 | **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 of two or more circles will result in zero mark in that question.

1- 1- Differential of $\sqrt{x}$ is

(A) $\frac{1}{\sqrt{x}}dx$ (B) $\frac{2}{\sqrt{x}}dx$ (C) $\frac{1}{2\sqrt{x}}dx$ (D) $\frac{-1}{\sqrt{x}}dx$

2- If a = b then equation $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ represent

(A) Ellipse (B) Circle (C) Parabola (D) Hyperbola

3- Degree of differential equation $\frac{d^2y}{dx^2}+\frac{dy}{dx}-3x=0$ is

(A) 0 (B) 2 (C) 1 (D) 3

4- $\frac{d}{dx}(\text{Sin}\ln x)=?$

(A) $\frac{e^x-e^{-x}}{2}$ (B) $\frac{e^x+e^{-x}}{2}$ (C) e^x-e^{-x} (D) e^x+e^{-x}

5- Magnitude of a vector $\underline{v}=-\underline{i}+\underline{j}$ is

(A) a (B) $\sqrt{2}$ (C) $-\sqrt{2}$ (D) $\sqrt{3}$

6- If dot product of two non-zero vectors is zero then vectors will be

(A) perpendicular (B) parallel (C) collinear (D) all of these

7- Length of latus ractum of parabola $y^2=4ax$ is

(A) 2a (B) 4ax (C) 4a (D) $\frac{1}{2a}$

8- Every homogeneous equation $ax^2+2hxy+by^2=0$ represent two real lines through origin if

(A) $h^2-ab<0$ (B) $h^2-ab>0$ (C) $h^2=ab$ (D) both (B) and (C)

9- If α is constant then $\int \cot\alpha\, dy$ is

(A) Sinα + c (B) –Sinα + c (C) xSinα + c (D) ycotα + c

10- If $f(x)=\text{Cos}x$, then $f'\left(\frac{\pi}{2}\right)$ is

(A) –1 (B) 1 (C) 0 (D) $\frac{1}{2}$

11- $\lim_{x\to a}\frac{x^3-a^3}{x-a}=?$

(A) $3a^2$ (B) a^2 (C) 0 (D) un-defined

12- Derivative of $\sqrt{x}$ at x = a is

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

(Turn over)

13- $\int \frac{\ell nx}{x} dx$ is equal to

(A) $\ell n\,(\ell nx) + c$ (B) $\frac{(\ell nx)^2}{2} + c$ (C) $\ell nx + c$ (D) $\frac{\ell nx}{2} + c$

14- Slope intercept form of a line is

(A) $y = mx + c$ (B) $\frac{x}{a} + \frac{y}{b} = 1$ (C) $x = 0$ (D) $y = 0$

15- The function $f(x) = \frac{2+3x}{2x}$ is not continuous at

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

16- $\frac{1}{6}[\underline{u}\ \underline{v}\ \underline{w}]$ is formula to calculate

(A) area of triangle (B) volume of parallelpipped

(C) volume of tetrahedron (D) area of parallelogram

17- (2 , 1) is solution of in-equality

(A) $2x + y > 5$ (B) $x - 2y > 1$ (C) $3x - 5y < 7$ (D) $2x + y < 5$

18- Eccentricity of hyperbola is

(A) $e < 1$ (B) $e = 0$ (C) $e = 1$ (D) $e > 1$

19- $\frac{d}{dx}\left[\frac{1}{g(x)}\right]$ is equal to

(A) $\frac{1}{[g(x)]^2}$ (B) $\frac{-g'(x)}{g(x)}$ (C) $\frac{-1}{[g(x)]^2}$ (D) $\frac{-g'(x)}{[g(x)]^2}$

20- Distance of point (Cos3x , Sin3x) from origin is

(A) 9 (B) 6 (C) 3 (D) 1