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Roll No._____to be filled in by the candidate.	(For all sessions)	Paper Code	8	1	9	5

Mathematics (Objective Type)

Time: 30 Minutes **Marks: 20**

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A,B,C & D to each question are given.Which answer you consider correct, fill the corresponding circle A,B,C or D given in front of each question with Marker or pen ink on the answer sheet provided.

1-1. If a line "ℓ" intersect $x-axis$ at $(a,0)$, then "a" is called _____of line "ℓ".

(A) y-intercept (B) $x-$intercept (C) slope (D) inclination

2. $y=mx+c$ is_____form of equaion of line:

(A) point slope (B) intercept (C) normal (D) slope intercept

3. An equaion of line bisecting I and III quadrant is:

(A) $x=y$ (B) $x=-y$ (C) $x+2y=0$ (D) $x-2y=0$

4. $x=0$ is the solution of the inequality.

(A) $2x+1>0$ (B) $2x+1<0$ (C) $2x+1\leq 0$ (D) $2x-1<0$

5. The centre of circle $(x+1)^2+(y-2)^2=26$ is:

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

6. The equation of directrix of the parabola $x^2=4ay$ is:

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

7. The centre of Ellipse $\frac{x^2}{4}+\frac{y^2}{1}=16$ is:

(A) (4 , 1) (B) (1 , 4) (C) (-1 , 4) (D) (0 , 0)

8. If $\underline{U}$ is any vector, then $\hat{\underline{U}}=$

(A) $\frac{|\underline{U}|}{\underline{U}}$ (B) $\frac{\underline{U}}{|\underline{U}|}$ (C) $\frac{-\underline{U}}{|\underline{U}|}$ (D) $\underline{U}.|\underline{U}|$

9. If $2\underline{i}+\alpha\,\underline{j}+5\underline{k}$ and $3\underline{i}+\underline{j}+\alpha\,\underline{k}$ are perpendicular, then $\alpha=$

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

10. The domain of $g(x)=2x-5$ is:

(A) IR (B) the set of positive No.

(C) The set of negative real No. (D) The set of non-negative real No.

11. $\lim_{n\to\infty}\left(1+\frac{1}{n}\right)^{\frac{n}{2}} =$

(A) e (B) e^2 (C) $e^{\frac{1}{2}}$ (D) e^3

12. $\frac{d}{dx}(x-5)(3-x) =$

(A) $2x+8$ (B) $-2x+8$ (C) $2x-8$ (D) $x+8$

13. If $3x+4y+7=0$, then $\frac{dy}{dx} =$

(A) $\frac{3}{4}$ (B) $\frac{4}{3}$ (C) $\frac{-4}{3}$ (D) $\frac{-3}{4}$

14. $\frac{d}{dx}(\sec x) =$

(A) $\sec x \tan x$ (B) $\sec x$ (C) $co\sec x$ (D) $-\sec x \tan x$

15. If $f(x) = \sin x$, then $f'(0) =$

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

16. Differential of y is denoted by:

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

17. $\int \frac{1}{1+x^2} e^{\tan^{-1}x} dx =$

(A) $e^{\sec x}+c$ (B) $e^{\tan x}+c$ (C) $e^{-\tan x}+c$ (D) $e^{\tan^{-1}x}+c$

18. $\int_1^e \ell nx\, dx =$

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

19. The order of differential equation $\frac{d^2y}{dx^2}+\frac{dy}{dx}-3x=0$ is:

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

20. If a line "ℓ" is parallel to $x-axis$, then inclination=

(A) 90^0 (B) 0^0 (C) 30^0 (D) 45^0