1218 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------

(Inter Part – II) (Session 2014-16 to 2016-18) Sig. of Student ----------

Mathematics (Objective) **Paper (II)**

Time Allowed:- 30 minutes **PAPER CODE 4193** Maximum 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 or more circles will result in zero mark in that question. Write **PAPER CODE, which is printed on this question paper,** on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed. **Q. 1**

1) $\int \frac{Cot\sqrt{x}}{\sqrt{x}} \cdot dx \cdot =$

(A) $2\log_e |Sin\sqrt{x}| + c$ (B) $2\log_a |Sin\sqrt{x}| + c$ (C) $\log_e |Sin\sqrt{x}| + c$ (D) $\log_a |Sin\sqrt{x}| + c$

2) The linear function f(x) = ax + b becomes constant if

(A) a = 10 , b = 0 (B) a = 1 , b = 0 (C) x = 1 , b = 0 (D) x = 10 , b = 0

3) If $f(x) = -2x + 8$, then $f^{-1}(-1) =$

(A) $\frac{9}{2}$ (B) $\frac{2}{9}$ (C) $\frac{7}{2}$ (D) $\frac{2}{7}$

4) If $y = e^{x\log_e a}$ then $y' =$

(A) $e^{x\ln a}$ (B) e^x (C) a^x (D) $a^x \log_e a$

5) If $y = e^{f(x)}$ then $f'(x) =$

(A) $\frac{dy}{dx}$ (B) $\frac{1}{y} \cdot \frac{dy}{dx}$ (C) $y \cdot \frac{dy}{dx}$ (D) $\frac{1}{y} \cdot \frac{dx}{dy}$

6) $\frac{d}{dx}(Cos^2 x - Sin^2 x) =$

(A) 2 Cos 2x (B) -2 Cos 2x (C) -2 Sin 2x (D) 2 Sin 2x

7) If $f(x) = Tan\, x$ then $f'(\pi/6) =$

(A) $\frac{4}{3}$ (B) $\frac{3}{4}$ (C) $\frac{\sqrt{3}}{2}$ (D) $\frac{\sqrt{3}}{4}$

8) $\int a^{x^2} . x \cdot dx =$

(A) $\frac{a^x}{\log_e a} + c$ (B) $\frac{a^{x^2}}{2\log_e a}$ (C) $\frac{a^{x^2}}{2\log_a e}$ (D) $\frac{a^x}{2\log_e a}$

9) If $\phi'(x) = f(x)$ then $\phi(x)$ is called _____of $f(x)$

(A) Derivative (B) Integral (C) Differential (D) Definite Integral

SGD - 12 - 18

10) If $\underline{a}$ and $\underline{b}$ are two non zero vectors then angle between $\underline{a}$ and $\underline{a} \times \underline{b}$. is always

(A) 0 (B) 30^o (C) 90^o (D) 60^o

11) $\int \frac{1+x}{x} \cdot dx =$

(A) $\log_e |x| + c$ (B) $1 + \log_e |x| + c$ (C) $\log_e |1+x| + c$ (D) $x + \log_e |x| + c$

12) Distance of a point P(x,y) from x-axis is

(A) x (B) y (C) |x| (D) |y|

13) Centroid of the triangle with vertices A(2 , 1) , B(-1 , 3) , C(-1 , -4) is

(A) (3 , 1) (B) (0 , 0) (C) (2 , 2) (D) (-2 , -5)

14) The line $ax + by + c = 0$ is parallel to y-axis if

(A) $c = 0$ (B) $a = 0$ (C) $a = b$ (D) $b = 0$

15) Equation of a line passing through (-2 , 5) having slope O is

(A) $y = -5$ (B) $y = 5$ (C) $x = -2$ (D) $x = 2$

16) $x = 0$ is not in the solution of inequality

(A) $2x + 3 > 0$ (B) $x + 4 > 0$ (C) $x + 5 > 0$ (D) $2x + 3 < 0$

17) Length of the diameter of the Circle $(x-5)^2 + (y-3)^2 = 8$ is

(A) 64 (B) 16 (C) $2\sqrt{2}$ (D) $4\sqrt{2}$

18) The line $y = mx + c$ will be tangent to the circle $x^2 + y^2 = a^2$ if

(A) $c = \frac{a}{m}$ (B) $c = \pm a\sqrt{1-m^2}$ (C) $c = \pm a\sqrt{1+m^2}$ (D) $c = \pm a\sqrt{m^2-1}$

19) Vertices of the Ellipse $\frac{x^2}{16} + \frac{y^2}{25} = 1$ are

(A) $(0, \pm 5)$ (B) $(\pm 5, 0)$ (C) $(\pm 4, 0)$ (D) $(0, \pm 4)$

20) If "α" is the direction angle of a vector, then

(A) $0 < \alpha < \pi$ (B) $0 \le \alpha \le \pi$ (C) $0 < \alpha \le \pi$ (D) $0 \le \alpha < \pi$