Roll No _____ (To be filled in by the candidate)

(Academic Sessions 2017 – 2019 to 2019 – 2021)

MATHEMATICS 221-(INTER PART – II) Time Allowed : 30 Minutes

Q.PAPER – II (Objective Type) GROUP – I Maximum Marks : 20

PAPER CODE = 8195

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	$\int (2x+3)^{\frac{1}{2}}\,dx =$: (A) $\frac{(2x+3)^{\frac{3}{2}}}{2}+c$ (B) $\frac{1}{3}(2x+3)^{\frac{3}{2}}+c$ (C) $\frac{1}{2}(2x+3)^{\frac{1}{3}}+c$ (D) $\frac{1}{3}(2x+3)^{\frac{-1}{2}}+c$
2	Distance between A (3 , 1) and B (– 2 , – 4) is : (A) $\sqrt{17}$ (B) $5\sqrt{2}$ (C) $\sqrt{26}$ (D) $2\sqrt{5}$
3	If $f(x)=\frac{x}{x^2-4}$ then range of $f(x)$ is : (A) All real number (B) Rational number (C) All negative real number (D) Integer
4	Slope 'm' through $A(x_1,y_1)$ $B(x_2,y_2)$ is : (A) $\frac{x_2-x_1}{y_2-y_1}$ (B) $\frac{x_2+x_1}{y_2-y_1}$ (C) $\frac{y_2-y_1}{x_2-x_1}$ (D) $\frac{y_1-y_2}{x_1+x_2}$
5	$\lim_{x\to 0}\frac{\sin ax}{\sin bx} =$: (A) $\frac{b}{a}$ (B) a (C) $\frac{a}{b}$ (D) $\frac{1}{b}$
6	$\int (a-2x)^{\frac{3}{2}}\,dx =$: (A) $\frac{1}{5}(a-2x)^{\frac{3}{2}}+c$ (B) $\frac{1}{5}(a-2x)^{\frac{5}{2}}+c$ (C) $-\frac{1}{5}(a-2x)^{\frac{5}{2}}+c$ (D) $-\frac{3}{5}(a-2x)^{\frac{5}{2}}+c$
7	$\int \sec x\,dx =$: (A) $\sec x+\tan x$ (B) $\sec^2 x$ (C) $\ln\lvert\sec x-\tan x\rvert$ (D) $\ln\lvert\sec x+\tan x\rvert+c$
8	If $f(x)=\frac{1}{x^m}$ then $f'(x)$ = : (A) $-xm^{-1}$ (B) $-mx^{-m-1}$ (C) $-mx^{-m+1}$ (D) $-m^{-1}x$

(Turn Over)

1-9	Midpoint of the line segment joining A (3, 1) and B (-2 , -4) is : (A) $\left(\frac{1}{2},-\frac{3}{2}\right)$ (B) $\left(\frac{5}{2},\frac{5}{2}\right)$ (C) $\left(\frac{1}{2},\frac{3}{2}\right)$ (D) $\left(\frac{1}{2},\frac{5}{2}\right)$
10	The derivative of $\frac{1}{1+x}$ is : (A) x (B) $1+x$ (C) $(1+x)^{-2}$ (D) $-1(1+x)^{-2}$
11	In circle $x^2+y^2+2gx+2fy+c=0$, the radius is : (A) $\sqrt{g^2+f^2+c}$ (B) g^2+f^2-c (C) $\sqrt{g^2+f^2-c}$ (D) g^2+f^2+c
12	$x=5$ is the solution of inequality : (A) $2x-3>0$ (B) $2x+3<0$ (C) $x+4<0$ (D) $x+3<0$
13	In vectors $\vec{a}\times\vec{b}=$: (A) $\vec{b}\times\vec{a}$ (B) $-\vec{b}\times\vec{a}$ (C) $-\vec{b}$ (D) $-\vec{a}\times\vec{b}$
14	In equation of circle $x^2+y^2=r^2$ the centre of circle is : (A) (x , y) (B) (0 , 0) (C) (1 , 0) (D) (0 , r)
15	Magnitude of vector $\vec{u}=2i-7j$ is : (A) $\sqrt{53}$ (B) $\sqrt{55}$ (C) $\sqrt{48}$ (D) $\sqrt{52}$
16	$\frac{d}{dx}(\cos^{-1}x)=$: (A) $\frac{1}{\sqrt{1-x^2}}$ (B) $\frac{-1}{\sqrt{1-x^2}}$ (C) $\frac{1}{\sqrt{1+x^2}}$ (D) $\frac{1}{1+x^2}$
17	$1+x+\frac{x^2}{2!}+\frac{x^3}{3!}+----$ is Maclaurin series for : (A) e^x (B) $\sqrt{1+x}$ (C) $\cos x$ (D) $\sin x$
18	The vector $\overrightarrow{PQ}$ through P (0 , 5) and Q (-1 , -6) is : (A) [-1 , 11] (B) [-1 , -11] (C) [0 , 11] (D) [1 , 1]
19	$\frac{d}{dx}\tan^{-1}x=$: (A) $\frac{1}{1-x^2}$ (B) $\frac{1}{\sqrt{1-x^2}}$ (C) $\frac{1}{\sqrt{1+x^2}}$ (D) $\frac{1}{1+x^2}$
20	The focus of parabola $y^2=4ax$ is : (A) (0 , a) (B) ($-a$, 0) (C) (a , 0) (D) (0 , $-a$)