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

(Academic Sessions 2018 – 2020 to 2020 – 2022)

MATHEMATICS 222-(INTER PART – II) Time Allowed : 30 Minutes

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

PAPER CODE = 8193

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	(0 , 0) is the solution of inequality : (A) $3x-7y<3$ (B) $x+y>2$ (C) $x-y>1$ (D) $3x+5y>7$
2	The slope of a line with inclination 90° is : (A) 0 (B) -1 (C) Undefined (D) 1
3	If $\underline{a}$ and $\underline{b}$ are parallel vectors then $\underline{a} \times \underline{b} =$: (A) $\underline{0}$ (B) -1 (C) 1 (D) 2
4	Two lines $a_1x+b_1y+c_1=0$, $a_2x+b_2y+c_2=0$ are parallel if : (A) $\frac{a_1}{a_2}=\frac{b_1}{b_2}$ (B) $\frac{a_1}{a_2}=-\frac{b_1}{b_2}$ (C) $\frac{b_1}{c_1}=\frac{b_2}{c_2}$ (D) $\frac{a_1}{c_1}=\frac{a_2}{c_2}$
5	The value of $3\,\underline{j}.\underline{k}\times\underline{i}$ is : (A) -1 (B) -3 (C) 3 (D) 0
6	If a straight line is parallel to x-axis, then its slope is : (A) Undefined (B) -1 (C) 1 (D) 0
7	The centre of the circle $5x^2+5y^2+24x+36y+10=0$ is : (A) $\left(\frac{12}{5},\frac{18}{5}\right)$ (B) $\left(-\frac{12}{5},-\frac{18}{5}\right)$ (C) $\left(\frac{12}{5},-\frac{18}{5}\right)$ (D) $\left(-\frac{12}{5},\frac{18}{5}\right)$
8	The length of the latus rectum of the parabola $y^2=8x$ is : (A) 2 (B) 8 (C) 4 (D) $2\sqrt{8}$
9	The point of intersection of angle bisectors of a triangle is called : (A) Orthocentre (B) Centroid (C) In-centre (D) Circumcentre

10	The coordinates of the vertices of hyperbola $\frac{y^2}{16}-\frac{x^2}{49}=1$ are : (A) $(0,\pm 7)$ (B) $(\pm 4,0)$ (C) $(0,\pm 4)$ (D) $(\pm 7,0)$
11	$\frac{d}{dx}(\sin 2x+\cos 2x)=:$ (A) $(\cos 2x-\sin 2x)$ (B) $(\cos 2x+\sin 2x)$ (C) $(2\cos 2x+2\sin 2x)$ (D) $2(\cos 2x-\sin 2x)$
12	$\lim_{h\to 0}(1+2h)^{\frac{1}{h}}=:$ (A) e^2 (B) e (C) $\frac{1}{e}$ (D) $\frac{1}{e^2}$
13	$\int e^{\sin x}\cos x\,dx=:$ (A) $e^{\cos x}+c$ (B) $\ell n\lvert\sin x\rvert+c$ (C) $\ell n\lvert\cos x\rvert+c$ (D) $e^{\sin x}+c$
14	$\frac{d}{dx}(\cot^{-1}x)=:$ (A) $\frac{1}{1+x^2}$ (B) $\frac{1}{1-x^2}$ (C) $-\frac{1}{1+x^2}$ (D) $-\frac{1}{1-x^2}$
15	$\int e^x(\cos x+\sin x)\,dx=:$ (A) $e^{-x}\sin x+c$ (B) $e^x\sin x+c$ (C) $-e^x\sin x+c$ (D) $e^{-x}\cos x+c$
16	If $y=e^{-ax}$ then $\frac{dy}{dx}=:$ (A) ae^{-ax} (B) e^{-ax} (C) a^2e^{-ax} (D) $-ae^{-ax}$
17	$\int\frac{1}{1+x^2}dx=:$ (A) $\tan^{-1}x+c$ (B) $-\tan^{-1}x+c$ (C) $\sin^{-1}x+c$ (D) $\cos^{-1}x+c$
18	The range of $f(x)=\sqrt{x^2-9}$ is : (A) $(-\infty,0]$ (B) $[0,+\infty)$ (C) $(0,+\infty)$ (D) $(-\infty,\infty)$
19	$\int\sin x\cos x\,dx=:$ (A) $\ell n\lvert\sin x\rvert+c$ (B) $\frac{\cos^2 x}{2}+c$ (C) $\frac{\sin^2 x}{2}+c$ (D) $\frac{\sin^2 x\cos^2 x}{2}+c$
20	$\frac{d}{dx}\left(\frac{1}{\cos ec\,x}\right)=:$ (A) $\frac{1}{\sec x}$ (B) $\cos ec^2x$ (C) $\cot x$ (D) $\frac{1}{\cos ec^2x}$