Roll No. : _____

Objective
Paper Code
8197

Intermediate Part Second - 252

MATHEMATICS (Objective) Group – I

Time: 30 Minutes Marks: 20

Q.No.1 **You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.beb**

S.#	Questions	A	B	C	D
1	If α is the inclination of the line ℓ, then its slope is:	$\sin\alpha$	$\cos\alpha$	$\tan\alpha$	$\cot\alpha$
2	The lines represented by $ax^2+2hxy+by^2=0$ are imaginary if:	$h^2-ab=0$	$h^2-ab<0$	$h^2-ab>0$	$h^2-ab\neq 0$
3	Two lines $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ are parallel if:	$a_1a_2+b_1b_2=0$	$a_1a_2-b_1b_2=0$	$a_1b_2-a_2b_1=0$	$a_1b_2+a_2b_1=0$
4	Equation of vertical line through $(7,-9)$ is:	$x=7$	$x=-9$	$y=7$	$y=-9$
5	$(1,0)$ is the solution of the inequality:	$7x+2y<8$	$3x+y>6$	$x-3y<0$	$-3x+y>0$
6	Length of tangent drawn from $(0,1)$ to the circle $x^2+y^2+6x-3y+3=0$, is:	4	3	2	1
7	Vertex of the parabola $(y-3)^2=8(x+2)$ is:	$(0,0)$	$(3,-2)$	$(-3,2)$	$(-2,3)$
8	For hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$:	$b^2=a^2-c^2$	$b^2=c^2-a^2$	$b^2=a^2+c^2$	$a^2+b^2+c^2=0$
9	If $\bar{F}=4\underline{i}+3\underline{j}+5\underline{k}$ and $\bar{d}=-\underline{i}+3\underline{j}+8\underline{k}$, then work done is:	30 units	45 units	53 units	47 units
10	If $\underline{U}$, $\underline{V}$ and $\underline{W}$ are coterminous edges of a tetrahedron, then its volume is:	$[\underline{U}\,\underline{V}\,\underline{W}]$	$\frac{1}{3}[\underline{U}\,\underline{V}\,\underline{W}]$	$\frac{1}{6}[\underline{U}\,\underline{V}\,\underline{W}]$	$\frac{1}{9}[\underline{U}\,\underline{V}\,\underline{W}]$
11	$x=a\cos\theta$, $y=b\sin\theta$ are parametric equations of :	Circle	Parabola	Ellipse	Hyperbola
12	Domain of $f(x)=\sqrt{x+1}$ is:	$[-1,+\infty)$	$(-\infty,+\infty)$	$(0,+\infty)$	$[0,+\infty)$
13	If $y=\tanh^{-1}x$, then $\frac{dy}{dx}=$:	$\frac{1}{1+x^2}$	$\frac{1}{1-x^2}$	$\frac{-1}{1+x^2}$	$\frac{-1}{1-x^2}$
14	$\frac{d}{dx}(a^{\lambda x})=$:	$a^{\lambda x}$	$a^{\lambda x}\cdot\ell na$	$\lambda a^{\lambda x}\cdot\ell na$	$\frac{a^{\lambda x}}{\lambda\ell na}$
15	$\frac{d}{dx}(\sin\sqrt{x})=$:	$\cos\sqrt{x}$	$\cos\sqrt{x}\cdot\frac{1}{\sqrt{x}}$	$\sqrt{x}\cos\sqrt{x}$	$\cos\sqrt{x}\cdot\frac{1}{2\sqrt{x}}$
16	$\frac{d}{dx}\left(\ell n(e^x)\right)=$:	$\frac{1}{e^x}$	e^x	1	e^{2x}
17	$\int\frac{1}{\cos^2 x}dx=$:	$\frac{1}{\sin^2 x}+c$	$\tan x+c$	$\sec^2 x+c$	$\operatorname{cosec}^2 x+c$
18	Suitable substitution to evaluate $\int\frac{1}{\sqrt{x^2-a^2}}dx$ is :	$x=a\sin\theta$	$x=a\tan\theta$	$x=a\sec\theta$	$x=a\cos\theta$
19	$\int(\sec^2\theta-\tan^2\theta)\,d\theta=$:	$\theta+c$	$\sin\theta+\cos\theta+c$	$2\sec\theta-2\tan\theta+c$	$\tan\theta-\cot\theta+c$
20	$\int_{\frac{-\pi}{4}}^{\frac{\pi}{4}}\sec^2\theta\,d\theta=$:	1	2	Zero	3