Student Name;----------	Roll No.....	Date...../...../.....
Class 2nd year	Subject : Mathematics	Chapter # 2
T- Marks : 30	Time : 40 mints	Obtain Marks

Q # 1	Circle the correct option	1x7=7					
1	$\frac{d}{dx}(x-5)(3-x)=$						
a	$2x+8$	b	$-2x+8$	c	$2x-8$	d	$x+8$
2	$if\ 3x+4y+7=0.then\ \frac{dy}{dx}=$						
a	$\frac{3}{4}$	b	$\frac{4}{3}$	c	$\frac{-4}{3}$	d	$\frac{-3}{4}$
3	$f(x)$=cos x then $f'(\pi)=$;						
a	1	b	0	c	-1	d	2
4	Order of the differential equation $\frac{xd^2y}{dx^2}+\frac{dy}{dx}-2x=0\ is$;						
a	1	b	2	c	3	d	4
5	$\frac{d(Cos\ x^2)}{dx}=$;						
a	$2x\sin x^2$	b	$-2x\sin x^2$	c	$2\cos x$	d	$-2\sin x$
6	$\frac{d}{dx}(\sqrt{x})=$;						
a	$\sqrt{x}$	b	$\frac{1}{\sqrt{x}}$	c	$\frac{1}{2x}$	d	$\frac{1}{2\sqrt{x}}$
7	The derivative of arc cosx is ;						
a	$\frac{-1}{\sqrt{1-x^2}}$	b	$\frac{1}{\sqrt{1+x^2}}$	c	$\frac{1}{\sqrt{x^2-1}}$	d	$\frac{-1}{\sqrt{x^2}}$

Q # 2	Write short answer of following question.	2x7=14
i	If $y=\sqrt{x}-\frac{1}{\sqrt{x}}, Find\ \frac{dy}{dx}$;	
ii	Differentiate $y=a^{\sqrt{x}}$;	
iii	Prove that $\frac{d}{dx}(\cos hx)=sinhx$	
iv	Find $\frac{dy}{dx}$ if $y=e^{-2x}\sin 2x$	
v	Differential w.r.t x, $sin^{-1}\sqrt{1-x^2}$	
vi	Find $y_4\ if\ y=\ln(x^2-9)$	
vii	Find $\frac{dy}{dx}$ if $xy+y^2=2$	

Q # 3	Write detail answer of these questions.	4+5=9

a. If $y=e^x sinx$, show that $\frac{d^2y}{dx}-2\frac{dy}{dx}+2y=0$

b. Find $\frac{dy}{dx}$ if y=$\frac{\sqrt{a+x}+\sqrt{a-x}}{\sqrt{a+x}-\sqrt{a-x}}$, x≠ 0