This document is a part of Main Course File	Document No.: CFM – 8

SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY MANAGED

N. G. PATEL POLYTECHNIC

SCIENCE AND HUMANITIES DEPARTMENT (CHEMICAL / COMPUTER / MECHNACAL / ELECTRICAL/ IT ENGINEERING DEPARTMENT)

FORMAT FOR ASSIGNMENTS

Course Name (With Code): Mathematics (DI01000021)

Semester / Year: First / First

Assignment Number: 01 (Determinant, Function and Logarithm)

Assignment CO Number: DI01000021.1

Sr. No.	Questions related to Course Outcomes
Part – A	**Questions carrying 1 Marks**
1	$period\ of\ sin^2 39^0 + cos^2 39^0$ = ----------
2	$\sin 2\theta$ = ----------
3	$\sin^{-1} x + \cos^{-1} x$ = ----------
4	$\sin^{-1}\left(\cos\frac{\pi}{3}\right)$ = ----------
5	$period\ of \cos\frac{\pi}{6}$ = ----------
6	$\sin 135^0$ = ----------
7	$period\ of \sin 3x$ = ----------
8	216^0 = ---------- radian
Part – B	**Questions carrying 3 Marks**
1	Prove that :$sin^2\frac{\pi}{4} + sin^2\frac{3\pi}{4} + sin^2\frac{5\pi}{4} + sin^2\frac{7\pi}{4} = 2$
2	P.T $\frac{\sin(180^0-A)\cdot\sin(270^0-A)\cdot\cot(90^0+A)}{\cos(270^0+A)\cdot\cos(90^0+A)\cdot\tan(360^0-A)} = \cot A$
3	Prove that : $\tan 35^o + \tan 10^o + \tan 35^o \tan 10^o = 1$
4	Prove that:$\frac{\sin A+\sin 2A}{1+\cos A+\cos 2A} = \tan A$
5	Prove that :$\tan^{-1}\frac{1}{2} + \tan^{-1}\frac{1}{3} = \frac{\pi}{4}$
6	Prove that :$\tan^{-1}\frac{2}{11} + \tan^{-1}\frac{7}{24} = \tan^{-1}\frac{1}{2}$
7	Prove that: $2\tan^{-1}\left(\frac{2}{3}\right) = \tan^{-1}\left(\frac{12}{5}\right)$
Part – C	**Questions carrying 4 Marks**
1	Prove that :$\frac{sin\left(\frac{\pi}{2}+\theta\right)}{cos(2\pi-\theta)} + \frac{tan(\pi+\theta)}{cot\left(\frac{\pi}{2}-\theta\right)} + \frac{sec\left(\frac{3\pi}{2}+\theta\right)}{cosec(\pi-\theta)} = 3$
2	Prove that :$\frac{\sin(\theta-\frac{\pi}{2})}{\cos(\theta-\pi)} + \frac{\tan(\frac{\pi}{2}+\theta)}{\cot(\pi+\theta)} + \frac{cosec(\frac{\pi}{2}+\theta)}{\sec(\pi+\theta)} = -1.$
3	Draw the graph of y= sinx $(0 \le x \le \pi)$
4	Draw the graph of y= cosx$(\frac{-\pi}{2} \le x \le \frac{\pi}{2})$

5	Prove that : $\tan 50^{o} = \tan 40^{o} + 2\tan 10^{o}$	
6	If A+B = $\frac{\pi}{4}$ then p. t $(\tan A + 1)(\tan B + 1) = 2$	
7	Prove that : $\frac{\sin 4A + 2\sin 5A + \sin 6A}{\cos 4A + 2\cos 5A + \cos 6A} \tan 5A$	
8	Prove that : $\frac{\sin\theta + \sin 2\theta + \sin 3\theta}{\cos\theta + \cos 2\theta + \cos 3\theta} = \tan 2\theta$	
Prepared By: (Name of Faculty (ies)) with signature		**Signature of Head of Department**