GOVT.POLYTECHNIC - PLPT

UNIT TEST - I

Scheme and Subject code: C-20(2020-21)ENGG.MATHEMATICS-102

Subject Name: ENGINEERING MATHEMATICS - I DATE:

PIN: TIME:

Total Marks: 40 MARKS

PART - A

I. Answer **ALL** questions.

First question carries **4** marks and remaining questions carry **3** marks each.

S.no	Questions	Marks	Marks obtained	Blooms Taxonomy Level	Course Out comes
1	a) Find the additive inverse of 4+5i b) If A = $\begin{bmatrix}1 & -2\\5 & 1\end{bmatrix}$ then find A^T c) Tan 300^0 = _____ d) Write the formula of cot (A+B)	1 1 1 1			CO2 CO1 CO2 CO2
2	Find the real and imaginary parts of $\frac{4+2i}{1-2i}$	3			CO2
3	IfA= $\begin{bmatrix}1 & 0\\-1 & 9\end{bmatrix}$,B=$\begin{bmatrix}1 & 2\\3 & 3\end{bmatrix}$ then find 3B -2A	3			CO1
4	Prove that$(45^0 + A)\tan(45^0-A)=1$	3			CO2
5	Prove $\frac{sin2A}{1-cos2A}$ that = cot A	**3**			CO2

Part-B

II Answer **ALL** questions.Each question carries **EIGHT** marks

S.no	Questions	Marks	Marks obtained	Blooms Taxonomy Level	Course Out comes
6	a)Find adjoint of the matrix $\begin{bmatrix}a+b+2c & a & b\\ c & b+c+2a & b\\ c & a & c+a+2b\end{bmatrix}$ =$2(a+b+c)^3$ (or) b)Find the adjoint of the matrix of $\begin{bmatrix}cos\theta & sin\theta & 0\\ -sin\theta & cos\theta & 0\\ 0 & 0 & 1\end{bmatrix}$	8			CO1 CO1
7	a) Solve the equation using Matrix Inversion Method x+y+z=6,x-y+z=2,2x+y-z=1 (or) b) Solve the system of equation using Crammers rule x-y+z=2,2x+3y-4z=-4,3x+y+z=8	8			CO1 CO1
8	a) Show that $\frac{sin5A-sin3A}{cos3A-cos5A}$ = cot4A (or) b)Prove that $\cos20^0-\cos40^0-\cos80^0=0$	8		1	CO2 CO2