Department of Instrumentation

Course Name: **Optimization Techniques**

Course Code: **ISDOC6012**

Assignment No. 1:

Que. 1) Differentiate between classical design and optimum design procedure with the help of flow-charts.

Que. 2) Define the following terms used in optimum design procedure

a) Objective function
b) Design variables
c) Constraints
d) Iteration
e) Convergence

Que. 3) Give classification of Optimization Problems

Que. 4) Formulation of Optimization problems.

A refinery has two crude oils –

1. Crude A costs of $ 30/barrel and 20,000 barrels are available
2. Crude B costs $ 36/barrel and 30,000 barrels are available

The company manufactures gasoline and lube oil from crude. Yield a sale price per barrel of the product and market are shown in following table. Formulate optimization problem.

Product	Yield/Barrel		Sale Price per barrel	Market Barrel
	Crude A	Crude B		
Gasoline	0.6	0.8	$ 50	20,000
Lube Oil	0.4	0.2	$ 120	10,000

Que. 5) List the applications of optimization.