Mathematical Methods in Economics II

Second Semester (Hons.)

Paper- HC 2026

Total Marks - 50

- ***Students need to write their examination roll no. and class roll no. correctly.***
- ***The due date of submitting answers is 8th August, 2020.***

1. Answer the following Questions 2x5=10

a) When two matrices are said to be equal?
b) Define Scalar matrix.
c) What is homogenous function?
d) Define relative and absolute extrema.
e) What is differential equation?

2. Answer the following 5x4=20

a) Explain the criteria for determining relative extrema.

b) Explain the case of maximising excise tax revenue for a firm under imperfect condition.

c) What is Lagrange multiplier? Explain the Lagrange Multiplier method.

d) What is input-output model? Explain the input-output model given by w. Leontief.

3. Answer the following. 10x2=20

a) Give an insight of first order linear differential equation with constant coefficient and constant term.

b) A monopolist discriminates prices between two markets – 1 and 2 and his average revenue functions are given by

$$AR_1 = P_1 = 55 - 4Q_1$$

$$AR_2 = P_2 = 25 - 3Q_2$$

The total cost function is given by $C = 20 - 5Q + 2Q^2$, where $Q = Q_1 + Q_2$.

i. find the profit maximizing output to be sold in two markets.

ii. show that the market with higher elasticity of demand has lower price and vice-versa.