

# Mathematical Application in Economics

## Fourth Semester (Major)

### Paper – M 404

Total Marks- 50

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

1. Answer the following Questions 2x5=10

- a) State Euler's Theorem.
- b) What are relative and absolute extrema?
- c) When does a discriminating monopolist attain equilibrium?
- d) What is linear programming?
- e) Derive elasticity of demand applying differentiation.

2. Answer the following Questions 5x4=20

- a) Explain the relationship between AR, MR and elasticity.
- b) Derive total cost function from the given marginal cost function and total fixed cost.

$$C''(Q) = 3x - 4 \text{ when TFC} = 100$$

- c) Obtain Consumers' Equilibrium,  $Q = 50 - 2P$  when price = 20.
- d) Explain Prisoner's Dilemma.

3. Answer the following Questions 10x2=20

- a) Derive simple growth process of Domar model of maintaining steady state of growth within an economy.
- b) Explain the transportation problem of linear programming with its general formulation.