

**D 130382**

(Pages : 2)

Name.....

Reg. No.....

**FIFTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2025**

Economics

ECO 5B 10—MATHEMATICAL ECONOMICS

(2019 Syllabus)

Time : Two Hours and a Half

Maximum : 80 Marks

**Section A (Short Answer Questions)***Maximum mark in this Section is 25.**Students can attempt **all** questions.**Each question carries a maximum of 2 marks.*

1. Mathematical economics.
2. Revenue function.
3. Marginal cost.
4. Cross elasticity.
5. Unconstrained optimization.
6. MRS.
7. Homogeneous production function.
8. Basic solution.
9. Second degree price discrimination.
10. Break-even point.
11. Constant returns to scale.
12. Utility.
13. Marginal propensity to consume.
14. Demand function.
15. Saving function.

**Turn over**

**Section B (Short Essay Questions)**

*Maximum mark in this Section is 35.*

*Students can attempt **all** questions.*

*Each question carries a maximum of 5 marks.*

16. Distinguish between marginal rate of substitution and marginal rate of technical substitution.
17. Briefly discuss the economic application of profit maximization.
18. Write a short note on price elasticity.
19. Discuss the properties of Cobb - Douglas production function.
20. Explain the application of the Leontief matrix in Economics.
21. Write a short note on the significance of Lagrange Multiplier.
22. How the degree of homogeneity of a production function describes the different returns to scale ? Explain.
23. Briefly discuss the features of a perfectly competitive market.

**Section C (Long Essay Questions)**

*Answer any **two** questions.*

*Each question carries a maximum of 10 marks.*

24. Given  $C = 2000 + 0.9 Yd$ , where  $Yd = Y - T$  and  $T = 300 + 0.2Y$ , use the derivative to find MPC.
25. What do you mean by the linear programming ? What are the applications of linear programming ? Explain.
26. Explain the market equilibrium under perfect competition.
27. Discuss the price discrimination under monopoly market situation.

(2 × 10 = 20 marks)