Reg. No. : ....

Name : ....

Sixth Semester B.A. Degree Examination, April 2022.

First Degree Programme under CBCSS

Economics

EC 1661.3 – MATHEMATICAL ECONOMICS

(2014 Admission)

Time : 3 Hours　　　　　　　　　　　　　　　　　　　Max. Marks : 80

SECTION – I

Answer in one or two sentences. Attempt **all** questions

1. Marginal Productivity.

2. Income Elasticity of demand.

3. Ordinal Utility.

4. Econometrics.

5. Mathematical Model

6. Substitution Effect

7. Price discrimination.

8. Marginal rate of Substitution.

9. Isocost line.

10. Income determination model.

(10 × 1 = 10 Marks)

SECTION – II

Answer **any eight** questions not exceeding **one** paragraph. Each question carries **2** marks.

11. Given the Consumption function $C = 250 + 0.70Y$. Find MPC.

12. Write a short note on Implicit function.

13. If the demand law is $x = \dfrac{20}{p+1}$. Find elasticity of demand with respect to price at the point where $p = 3$.

14. Write a short note on Giffen Paradox.

15. Find the extreme values of the following function $y = x^3 - 9x^3 + 15x + 20$ using quadratic equation.

16. Explain the ingredients of a Mathematical Model.

17. Briefly explain the economic application of derivatives.

18. Find $\dfrac{dy}{dx}$ of the following functions

    (a) $y = 5x^4$

    b) $y = 4x^{-5}$

19. What do you meant by Constrained Optimization?

20. Write a short note on Capital budgeting.

21. Explain the relationship between AC and MC in mathematically.

22. Given $y = f(x_1, x_2) = 2x_1^2 + x_1x_2 + 3x_2^2$ find out $\dfrac{dy}{dx_1}$ and $\dfrac{dy}{dx_2}$.

(8 × 2 = 16 Marks)

SECTION – III

Answer **any six** questions not exceeding **120** words. Each question carries **4** marks.

23. Optimize the given utility function $U = 4xy - y^2$ and constant $2x + y - 6 = 0$.

24. Write a short note on Linearly homogeneous production function.

25. Distinguish between Cost plus pricing and Rate of return pricing.

26. The demand for a commodity is $D = 35 - 7P$. The supply function is $S = 2P - 5$. Find the equilibrium price.

27. Distinguish between linear and non-linear functions and give some Examples.

28. Briefly explain the Marginal analysis of Economics.

29. In a perfectly competitive market, the total revenue and total cost of a firm are given by TR = 20q and TC = q^2 + 4q + 20. Find profit maximizing output and maximum profit.

30. Briefly explain the role of quantitative techniques in Economics.

31. What are the important criteria for investment decisions?

(6 $\times$ 4 = 24 Marks)

SECTION – IV

Answer **any two** questions, not exceeding **four** pages. Each question carries **15** marks.

32. Explain in detail the different types of Elasticity of Demand.

33. What are the important methods for demand forecasting?

34. Explain the nature and scope of Mathematical economics.

35. State and Prove Slutsky's Equation.

(2 $\times$ 15 = 30 Marks)

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