K23U 3473

III Semester B.A. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, November 2023
(2019 to 2022 Admissions)
COMPLEMENTARY ELECTIVE COURSE IN ECONOMICS/ DEVELOPMENT ECONOMICS

3C03ECO/DEVECO : Mathematical Economics – I

Time : 3 Hours

Max. Marks : 40

PART – A

(Very short answer questions)

Answer **all** questions:

1. Define mathematical economics.

2. Describe utility function.

3. Marginal utility theory was developed by _____

4. Assuming, price of product is Rupees 20 and elasticity equal to 1, then MR equals _____

5. Define Lagrangean multiplier.

6. Equation of C-D production function _____   (6×1=6)

PART – B

(Short answer type questions)

Answer **any 6** questions.

7. Given the production function $Q = AL^{3/4}K^{1/4}$ which depicts kind of return to scale. Prove with mathematical solution.

8. Explain compensated demand function.

9. Distinguish between cardinal and ordinal utility.

10. Write a note on cross elasticity of demand.

11. If MR = 15 and elasticity of demand with respect to price is 2, find price.

12. What are the importance of C-D production function ?

13. What is Engel curve ?

14. Describe discriminating monopoly.

(6×2=12)

PART – C
(Short essay type questions)

Answer **any 4** questions.

15. At the point of equilibrium price elasticity is 2 and MC is 4. Calculate equilibrium price.

16. Explain the mathematical relationship between AR, MR and elasticity of demand.

17. Explain elasticity of substitution.

18. For a particular process, the cost function is given by $C = 56 - 8x + x^2$, where C is cost per unit and x, the number of unit's produced. Find the minimum value of the cost and the corresponding number of units to be produced.

19. Differentiate between C-D and CES production functions.

20. Explain consumer surplus.

(4×3=12)

PART – D
(Essay type questions)

Answer **any 2** questions.

21. Write an essay on properties of C-D production function.

22. In a perfectly competitive market the price and total cost of a firm is given as
    $P = 15$ and $C = 1/3 Q^3 - 5Q^2 + 28Q + 25$. Determine

    a) Profit maximizing output and profit minimizing output

    b) Maximizing profit

    c) Define shut down point.

23. Derive Slutsky equation and examine the result.

24. Explain the lagrange multiplier method of optimisation.

$(2 \times 5 = 10)$