

20U532

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Name: .....

Reg.No: .....

**FIFTH SEMESTER B.A. DEGREE EXAMINATION, NOVEMBER 2022**

(CBCSS - UG)

(Regular/Supplementary/Improvement)

**CC19U ECO5 B10 - MATHEMATICAL ECONOMICS**

(Economics - Core Course)

(2019 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. What is a parameter?
2. What is a rational function?
3. What is an economic function?
4. What is Price elasticity?
5. Define Normal goods.
6. What are the conditions for optimizing a single variable function?
7. Define substitution method.
8. What is an objective function?
9. Explain the advantages of LPP over conventional approach.
10. What do you mean by Simplex method?
11. What is a technology co-efficient?
12. What is a static model?
13. Define market.
14. Why monopoly is a price maker?
15. What is Discriminating monopoly?

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Find  $MRS_{xy}$  for the function  $U=3x+y$

17. Explain the relationship between AR and MR.
18. Explain the procedures for the optimization of a multivariable function.
19.  $Q_1+4Q_2=120$ , Subjects to  $120-Q_1-4Q_2=0$  . Optimize.
20. Check whether the function  $Z=x^3+7xy+y^3$  is homogeneous.
21. Maximize  $Z=50X_1+80X_2$   
S.T  
 $5X_1+6X_2\leq 600$   
 $X_1+2X_2\leq 160$   
 $X_1, X_2 \geq 0$
22. Write a note on the assumptions of Input-Output analysis.
23. Write a note on the transaction matrix.

**(Ceiling: 35 Marks)**

**Part C (Essay questions)**

Answer any *two* questions. Each question carries 10 marks.

24. Make an elaborate explanation regarding the economic functions.
25. Explain various marginal concepts used in mathematical economics.
26. State and prove the properties of a CD function.
27. Derive the equilibrium condition for a firm under Perfect competition.

**(2 × 10 = 20 Marks)**

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