

**G 18001038**



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**Reg. No.....**

**Name.....**

**M.Sc. DEGREE (C.S.S.) EXAMINATION, MAY 2018**

**Fourth Semester**

Faculty of Science

Branch I (A) : Mathematics

MI 04 E 05—MATHEMATICAL ECONOMICS

(2012 Admission onwards)

Time : Three Hours

Maximum Weight : 30

**Part A**

*Answer any **five** questions.*

*Each question has 1 weight.*

1. State the main assumption of indifference curve.
2. In Economics, “normal good” is the name for a good a normal individual can afford. True or False ? Explain.
3. What is the nature of production function ?
4. Define expansion path.
5. What is input-output analysis ?
6. What is an input ?
7. Define linear difference equation.
8. What is a cobweb model ?

(5 × 1 = 5)

**Part B**

*Answer any **five** questions.*

*Each question has 2 weight.*

9. Explain the economic logic of ridge lines.
10. What is Cobb-Douglas production function ? Explain the standard form for production of a single good with two factors.
11. Explain consumer's equilibrium under indifference curve analysis.

**Turn over**





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12. Explain revealed preference axiom with graphical presentation.
13. What is C.E.S. Production function ? Find the elasticity of substitution for the C.E.S. Production function ?
14. Explain the major limitations of input-output analysis.
15. Discuss the method of solving linear first-order difference equation with constant co-efficient.
16. Discuss the application of Cob-Web model in difference equation analysis.

(5 × 2 = 10)

### Part C

*Answer any **three** questions.*

*Each question has 5 weight.*

17. There is initially an equilibrium in the basic keynesian model.

$$Y_t = C_t + I_t$$

$$C_t = 650 + 0.5 Y_{t-1}$$

With  $I_t$  remaining at 300. Then  $I_t$  suddenly increases to 420 and remains there. What will be the actual level of  $Y$  six time periods after this change ?

18. (a) Explain the superiority of revealed preference theory to the Hicksian ordinal utility approach to consumer behaviour.  
(b) Briefly discuss the defects of the revealed preference theory.
19. (a) State and prove Euler's theorem.  
(b) Explain the properties of Cobb-Douglas production function.
20. (a) Discuss the law of variable proportions with graphical representation of three stages of the law.  
(b) Distinguish between short run and long run production function.
21. (a) Explain the causes of downward sloping demand curve.  
(b) Discuss the marginal rate of substitution with diagrammatic representation.
22. (a) Discuss the importance of input-output analysis in Economics.  
(b) Discuss the limitations of input-output analysis.

(3 × 5 = 15)

