

SIXTH SEMESTER B.A. DEGREE (SUPPLEMENTARY/IMPROVEMENT)  
EXAMINATION, MARCH 2017

(UG—CCSS)

Economics

EC 6B 11—MATHEMATICAL ECONOMICS AND ECONOMETRICS

(2009—2012 Admissions)

Time : Three Hours

Maximum : 30 Weightage

Answers may be written **either** in English **or** in Malayalam.

Use of simple calculator is permitted.

**Part A**

Answer **all** the questions from 1-12.

Each question carries  $\frac{1}{4}$  weightage.

1. For all categories of goods, substitution effect is :
 

(a) + 1.	(b) - 1.
(c) Positive.	(d) Negative.
2. Cobb-Douglas production function generates returns to scale which is :
 

(a) Increasing.	(b) Decreasing.
(c) Zero.	(d) Constant.
3. Income elasticity of demand for normal goods is :
 

(a) +.	(b) -.
(c) 0.	(d) + 1.
4. MRTS<sub>lk</sub> is given by the slope of :
 

(a) Isocost line.	(b) Indifference curve.
(b) Isoquant.	(d) Philip's curve.
5. Revenue function shows relation between revenue and the :
 

(a) Output sold.	(b) Price.
(c) Income.	(d) Profit.
6. Measures representing the population are :
 

(a) Statistics.	(b) Estimates.
(c) Parameters.	(d) Variates.

7. A solution satisfying the non-negativity condition of LPP is called :  
 (a) Basic. (b) Optimal.  
 (c) Feasible. (d) Basic feasible.
8. At the minimum of AC :  
 (a)  $AC > MC$ . (b)  $AC < MC$ .  
 (c) AC and MC constant. (d)  $AC = MC$ .
9. Variance of  $U_i$  in the econometric model is :  
 (a) 0. (b) Constant.  
 (c) Non-constant. (d) None.
10.  $\chi^2$  test is used for sample which is :  
 (a) Mixed. (b) Small.  
 (c) Large. (d) Both small and large.  
 (d) None.
11. Coefficient of determination  $r^2$  lies between :  
 (a) -1 and +1. (b)  $-\infty$  and  $\infty$ .  
 (c) 0 and 1. (d) -1 and 0.
12. The data at a point of time is called :  
 (a) Time series. (b) Panel.  
 (c) Pooled. (d) Cross section.

(12  $\times$   $\frac{1}{4}$  = 3 weightage)**Part B (Short answer Type Questions)***Answer all questions.**Each question carries 1 weightage.*

13. Define investment function.
14. Define homogenous function.
15. Explain the relation between MR and price elasticity.
16. Given the utility function  $U = f(x, y)$ , state the conditions of utility maximization.
17. State the relation average cost and marginal cost
18. Explain coefficient of determination
19. Distinguish between cardinal and ordinal utility.
20. Define error term.
21. Define 't' test.

(9  $\times$  1 = 9 weightage)

**Part C (Short Essay/ Paragraph Type Questions)**

Answer any **five** questions out of seven.  
Each question carries 2 weightage.

22. Find the optimum of  $y = -7x^2 + 126x - 23$ .
23. How do you measure price elasticity of demand? How do you classify goods based on this?
24. Maximise utility  $U = xy$  subject to  $10x + 2y = 240$ .
25. Given the supply function,  $q = 40 + 16p$ , find the elasticity of supply at  $p = 3$ .
26. Given the demand function  $q = 71 - 0.5p$  and the cost function  $c = 2000 + 10q$ , find the monopoly profit and price.
27. State the assumptions of simple econometric model
28. Explain the method of estimating parameters of  $Y = a + bX + U$ , by OLS method.

(5 × 2 = 10 weightage)

**Part D (Essay Questions)**

Answer any **two** questions out of three.  
Each question carries 4 weightage.

29. Discuss the properties of Cobb-Douglas production function
30. Explain the steps in solving LPP by Graphical method with an example.
31. Given the following price (x) and sales of a commodity (y), estimate the regression coefficients of  $y = a + bx$ .

x	:	5	6	7	8	9	11
y	:	12	17	19	24	30	29

(2 × 4 = 8 weightage)