Reg. No.....

SIXTH SEMESTER B.A. DEGREE EXAMINATION, MARCH/APRIL 2016

(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 a simple calculator is permitted.

Part A

Answer **all** *questions.*

1. $MRTS_{lk}$ is given by the slope of :

   (a) PPC. (b) Indifference curve.

   (c) Cost curve. (d) Isoquant.

2. For substitutes, cross elasticity of demand is :

   (a) Positive. (b) Negative.

   (c) Zero. (d) 1.

3. Demand function shows relation between demand and :

   (a) Price. (b) Income.

   (c) Substitute price. (d) All above.

4. Price elasticity of demand for Giffen goods is :

   (a) Negative. (b) Positive.

   (c) Zero. (d) + 1.

5. For n variables in m constraints (n > m), the solution obtained after setting n–m variables zero is called .

   (a) Feasible. (b) Optimal.

   (c) Basic. (d) Basic feasible.

6. For normal goods, elasticity of supply :

   (a) –. (b) 0.

   (c) – *or* +. (d) +.

7. **Elasticity of substitution of Cobb Douglas production function is :**

(a) > 0. (b) < 0.

(c) 1. (d) All above.

8. **Linear homogenous production function generates returns to scale which is :**

(a) Increasing. (b) Decreasing.

(c) Constant. (d) Linear.

9. **Sample mean is called :**

(a) Parameter. (b) Statistics.

(c) Estimator. (d) All the above.

10. **The value of correlation coefficient lies in between :**

(a) 0 to 1. (b) 1 to O.

(c) – 1 to 1. (d) None.

11. **The data at a point of time is called :**

(a) Time series. (b) Panel.

(c) Pooled. (d) Cross-section.

12. **Mean of the error term in the econometric model is :**

(a) x. (b) — 1.

(c) + 1. (d) 0.

(12 x = 3 weightage)

Part B (Short Answer Type Questions)

Answer **all** *questions.*
Each question carries 1 weightage.

13. **Define Mathematical economics.**
14. **What is an econometric model ?**
15. **Explain demand functions.**
16. **What is Engel function ?**
17. **Define marginal rate of technical substitution.**
18. **State the condition of profit maximisation.**
19. **Distinguish between Primal and Dual LPP.**
20. **Define Stochastic error.**
21. **Explain coefficient of determination.**

(9 x 1 = 9 weightage)

Part C (Short Essay or Paragraph Questions)

Answer any **five** *questions.*
Each question carries 2 *weightage.*

22. Find the optimum of $y = x^2 + 18x - 3$.
23. Given the demand function $p = 2 - 5q$, find the elasticity of demand at $q = 3$ units.
24. State the assumptions of classical linear regression.
25. Explain the **OLS** method of estimating parameters of simple linear econometric model.
26. Maximise utility $U = xy$ subject to $5x + y = 120$.
27. How do you measure cross elasticity of demand ? How does it help in finding the kinds of goods ?
28. Given the demand function $q = 71 - 0.5p$ and the cost function $c = 2000 + 10q$, find the monopoly profit and price.

(5 x 2 = 10 **weightage**)

Part D (Essay Questions)

Answer any **two** *questions.*
Each question carries **4** *weightage.*

29. Discuss the properties of Cobb-Douglas production function.
30. Explain the methodology of econometrics.
31. Explain the steps in solving **LPP** by Graphical method with an example.

(2 x 4 = 8 **weightage**)