Reg. No. : ....

Name : ....

III Semester B.A. Degree (CCSS – 2014 Admn./Regular) Examination, November 2015
Complementary Course in Economics
3C03 ECO : MATHEMATICAL ECONOMICS – I

Time : 3 Hours

Max. Marks : 40

PART – A

(Answer **all** the questions. **Each** carries **1** mark).

1. $\dfrac{dR}{dx} = 0$ and $\dfrac{d^2R}{dx^2}$ is negative are conditions for _____

2. _____ is the rate at which the consumer is prepared to exchange one commodity for another.

3. The elasticity of function $y = ae^{bx}$ is _____

4. _____ is price elasticity of demand.

(4×1=4)

PART – B

(Answer **any seven** questions. **Each** carries **2** marks).

5. Distinguish between Isoquants and Indifference curves.

6. A firm under perfect competition produces two commodities X_1 and X_2 with prices equal to Rs. 10 and Rs. 15 respectively. If the cost function of the firm is $C = 2x_1^2 + x_1x_2 + 2x_1^2$, where x_1 and x_2 denote the levels of output of X_1 and X_2 respectively. Determine the profit maximizing levels of output of X_1 and X_2.

7. What is long run and short run cost function ?

8. What are the properties of Indifference curve ?

9. Explain Cobb-Douglas production function.

10. Distinguish between elasticity of demand and supply function.

11. Find the equilibrium price for a commodity when supply and demand functions are given by $Q_s = 44 - 7p$ and $Q_d = 2p - 10$.

12. Explain the nature of utility function.

13. Define MRS.

14. Define Monopoly.   (7×2=14)

PART – C

(Answer **any 4** questions. **Each** carries **3** marks).

15. The price elasticity of demand for a commodity when price = Rs. 10 and quantity demanded = 25 units, is given to be 1.5. Find the demand equation of the commodity on the assumption that it is linear.

16. Explain marginal utility, marginal product and marginal cost.

17. Explain Homothetic function.

18. A firm faces a demand schedule p=1200 – 9x and its production is $x = L^{1/3}$, where L is labour. Find the marginal revenue product of labour when firm employs 64 workers.

19. Explain the derivation of demand curves.

20. Explain Revealed preference theorem.

21. Evaluate the elasticity of substitution of the production function
$$X = A \left[\delta K^{-p} + (1 - \delta)L^{-p} \right]^{-1/p}$$

22. Explain Monopolistic competition.   (4×3=12)

PART – D

(Answer **any 2** questions. **Each** carries **5** marks).

23. Explain different types of Production functions.

24. Explain elasticity of substitution mathematically.

25. Explain the role of theory and mathematics in economics.

26. Derive Slutsky equation and interpret the results.

(2×5=10)

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