

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

FIRST YEAR

B.A./B.SC. SECOND SEMESTER (January – June) 2013

Mid-Semester Examination, March 2013

Date : 04/03/2013

ECONOMICS (Honours)

Time : 11 am – 1 pm

Paper : II

Full Marks : 50

[Use separate answer scripts for each group]

Group – A

1. Answer **any two** questions from the following :- [2×5]
 - a) Let there be a production function $q = f(L)$, where L is a single variable factor. Show the Total Product, Average Product and Marginal Product curves, showing the connection between them. [5]
 - b) Consider a fixed coefficient production function $Q = \text{Min} \left[\frac{K}{\alpha}, \frac{L}{\beta} \right]$. It is given that 100 units of quantity is produced by 2 units of capital and 3 units of labour. Find the value of α and β and draw the appropriate isoquant map. (by showing additional quantities 200, 300 etc). Comment on the substitution at the corner points. [5]
 - c) Consider a Cobb-Douglas production function $q = AK^\alpha L^{1-\alpha}$, $0 < \alpha < 1$. Show that the marginal products of capital and labour are functions of $\frac{K}{L}$. What does it imply about the slope of the isoquants? [5]
 - d) Let $Q = A \left[K^{-3} + L^{-3} \right]^{-\frac{1}{3}}$ be a production function. Find the Marginal Rate of Technical Substitution (MRTS) for this production function. How does the MRTS change as $\frac{K}{L}$ changes? [5]
2. Answer **any two** questions from the following :- [2×5]
 - a) If two indifference curves pass through the same point, then which assumptions are violated? Explain. [5]
 - b) “An upward sloping indifference curve may occur due to non-convex preference.” Do you agree? Justify. [5]
 - c) Draw indifference curves under following situations. i) Ram likes both reading books and listening to music but after 2 hours he dislikes music, ii) Rahim likes both orange juice and milk but dislikes to have them together. [5]
 - d) Show that the convexity of preferences is equivalent with diminishing MRS. [5]
3. Answer **any one** question from the following :- [5]
 - a) i) A consumer has a direct utility function of the form $U(x, y) = U(x_1) + x_2$. Good 1 is a discrete good and the only possible levels of consumption are $x_1 = 0$ and $x_1 = 1$. For convenience, assume $U(0) = 0$ and $P_2 = 1$. For what restriction on P_1 will the consumer definitely choose the alternative $x_1 = 1$? [4]
 - ii) Explain the statement: ‘Demand functions are homogeneous of degree zero’. [1]

- b) An individual's tastes are specified by a utility function $U(x, y) = x^2 + y^2$, where x and y are the quantities of two goods X and Y. Let the price of Y be Rs.2 per unit. Obtain the demand curve for good X. What type of preferences are these known as? Illustrate using a real-life example. [3+2]

Group – B

4. Answer **any five** questions from the following :- [5×5]
- a) Show, with the help of a circular flow diagram, that the value of total production equals the value of total income which again equals the value of total expenditure of the economy. [5]
- b) Distinguish between : [2 1/2 + 2 1/2]
- i) Residential investment and Business fixed investment
- ii) GNP and National income
- c) Decide whether each of the following transactions is included in GDP. If the transaction is included, determine which component of final spending it represents. If the transaction is excluded from GDP, explain why. [2 1/2 + 2 1/2]
- i) Your local icecream maker buys peaches to make peach icecream.
- ii) You buy peach icecream from your local icecream maker.
- d) Using a simple “keynesian cross” model explain the multiplier phenomenon.
- e) Consider a simple keynesian model where both consumption and investment are functions of income and government expenditure is autonomous. Suppose the value of MPC is 0.6 and one unit of increase in income leads to an increase in investment by 0.4 units. Find out the value of autonomous expenditure multiplier. [5]
- f) Define IS curve. Explain the cases where the IS curve is i) horizontal and ii) vertical. [2 1/2 + 2 1/2]
- g) Show graphically, how we can derive the IS curve from the Keynesian cross model. [5]

