# RAMAKRISHNA MISSION VIDYAMANDIRA

**(Residential Autonomous College affiliated to University of Calcutta)**

**FIRST YEAR [2017-20]**

**B.A./B.Sc. FIRST SEMESTER (July – December) 2017**

**Mid-Semester Examination, September 2017**

Date : 12/09/2017 **ECONOMICS (Honours)**

Time : 11 am – 1 pm Paper : I Full Marks : 50

**[Use a separate Answer Book for each group]**

## Group – A

1. Answer **any two** questions : [2×5]

   a) 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?

   b) Derive the value of marginal utility of income of an individual having the preference pattern represented by the utility function $u = a\ln(x) + (1-a)\ln(y)$. Define a positive monotonic transformation of the utility function and check if the value of marginal utility of income remains unchanged with the transformation.

   [Hint : What is the interpretation of Lagrange Multiplier? [3+2]

   c) The utility function of a consumer is : U(x, y) = xy. Suppose income of the consumer (M) is 100 and the initial prices are Px = 5, Py = 10. Now suppose that Px goes up to 10, Py and M remaining unchanged. Assuming Slutskian framework, estimate price effect, income effect and substitution effect. [1+1+3]

2. Answer **any one** question : [1×15]

   a) Describe three stages of production in detail. Explain the notion of 'Expansion path'. [10+5]

   b) You have an income of Rs. 100,000 which you spend on internet fee and among other goods. When the fee is Rs. 40 per hour, you pay for 1000 hours per year.

      i) Write down the budget line. [3]

      ii) Let the fee rises to Rs. 50 per hour, and to offset the harm to students like you, the government gives you a cash transfer of Rs. 10,000 per year. Write down the new budget line. Using Revealed Preference argument, argue if you are better-off or worse-off after the price rise plus transfer than you were before. [4+8]

   c) Raja has the budget line 3x + 4y = 25 where x denotes pens and y denotes bread. His utility function is given by $U(x, y) = 12x + 16y - x^2 - y^2$ where $x \geq 0$ and $y \geq 0$.

      i) Find the optimum bundle. Check the second order optimality conditions to confirm that your results are truly utility-maximizing. [5+5]

      ii) What happens to the optimum commodity bundle if, instead of Rs. 25, the consumer has Rs. 50 or more to spend on the two goods? [5]

## Group – B

(*Answer **any five** questions*) [5×5]

3. Which of the following represents increase in National Income : [5]

   a) Purchase of a car by Ola.

b) Purchase of a second hand car by a person.

c) Purchase of a new car by a person.

d) Purchase of a car by a person who wants to rent the car to Ola.

State reasons in brief.

4. Why the following are not a part of national income : [2·5+2·5]

   a) Transfer payments

   b) Capital gains

5. Distinguish between : [2·5+2·5]

   a) GNP and National Income

   b) GNP and GDP

6. Suppose MPC of individuals in a closed economy without government is 1·25. What will be the value of autonomous expenditure multiplier? [5]

7. If the interest sensitivity of investment is zero what policy would you take to increase the income of an economy? [5]

8. How does the stickiness of nominal wage explain the positive slope of the AS curve? [5]

9. How does unemployment insurance influence frictional unemployment? [5]

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