RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

FIRST YEAR [2019-22]

B.A./B.Sc. FIRST SEMESTER (July – December) 2019

Mid-Semester Examination, September 2019

Date : 16/09/2019

Time : 11 am – 12 noon

ECONOMICS (Honours)

Paper : I (CC1)

Full Marks : 25

1. Answer **any three** questions of the following: [3 × 3]

   a) "The elasticity of demand is the same as the slope of the demand curve." True or false? Discuss.

   b) "Rational people think in terms of — total, average, or marginal." Which one is correct?

   c) Suppose the demand curve for a product is given by $Q = 10 - 2P + P_S$, where P is the price of the product and P_S is the price of a substitute good. The price of the substitute good is Rs. 2. And suppose P is Re. 1. Find out the cross-price elasticity of demand.

   d) **"**In 1989, the government of Mexico City introduced a program, *Hoy No Circula*, that bans most drivers from using their vehicles one weekday per week on the basis of the last digit of the vehicle's license plate… *there is no evidence that the restrictions have improved air quality*. Evidence from additional sources indicates that the restrictions led to an increase in the total number of vehicles in circulation as well as a change in composition toward high-emissions vehicles." (Quoted from Lucas W. Davis, "The Effect of Driving Restrictions on Air Quality in Mexico City," *Journal of Political Economy, February 2008*). Could you provide at least one explanation as to why the ban has increased car-usage? Answer your question while referring to the relevant underlying Economic Principle(s).

   e) Draw the indifference curves of the utility function $U = \min\{2x + y, x + 2y\}$ for utility levels 3,6, and 9. Also derive and graph the demand curve for such a utility function, assuming the total money income to be 12 rupees. (1+2)

2. Answer **any two** questions of the following: [2 × 8]

   a) The city council of a small college town decides to regulate rents in order to reduce students' living expenses. Hence the city council decides to resort to price control mechanism & it restricts the price below the market clearing-level.

      i) Draw a supply-demand diagram to describe this phenomenon & explain in detail.

      ii) Do you think this policy will benefit all students? Why or why not? (5+3)

   b) i) Suppose that you plan to conduct a survey in your locality for your college project, titled "Do hospitals make poor elderly people healthier?" Your project-advisor suggests you to compare the health status of those who have been to the hospital to the health of those who have not. To do that, you interview a number of poor elderly people in your locality and ask each of them two questions: I. "During the past 12 months, were you a patient in a hospital overnight?"; and II. "Would you say your health in general is excellent, very good, good, fair, poor?" For the last question, you assign the number 1 for excellent health, 2 for very good health, 3 for good health, 4 for fair health, and 5 for poor health. Your survey results turn out to be head-spinning (or so you think): the mean health score for the

hospital-going groups is 4 while that of the non-hospital-going group is 2. Based on your results, will you be justified to suggest the local authorities to shut down the local hospital for the elderly? Discuss in no more than 6 sentences.

ii) Suppose you have the utility function $U = \min\{x, y\}$ where *x* denotes your consumption of bananas and *y* represents all other goods. Initially, the price of bananas is 2 rupees per piece, and your total budget is 30 rupees. Now the Government wants to raise some money either through a quantity tax of 2 rupees per banana or through an equivalent lump sum tax. Which of the two taxes will be less harmful for you although both entail same tax revenue? (4+4)

c) i) Four consumers with strictly convex indifference curves, have the following marginal utility of the two Indian drinks, masala tea and mango lassi:

	Marginal Utility of a cup of Tea	**Marginal Utility of a cup of Lassi**
Sheldon	12	6
Leonard	6	6
Howard	3	6
Raj	12	3

The price of a cup of tea is 2 rupees, and the price of a cup of lassi is 1 rupee. Which, if any, of these consumers are optimizing over their choice of drink? For those who are not, how should they change their spending?

ii) Suppose there are two consumers in a market for apples (*x*), with the demand function for each consumer is given by $x_1 = 10 - 2p + 0.01m_1$ and $x_2 = 5 - p + 0.02m_2$. Here p denotes the price of an apple and m_i denotes the money income of the *i*-th individual, *i=1,2*. Derive and graph the market demand function for apples along with the graph of individual demand functions, if income for each individual is Rs 1000. If the income of the first person goes up by Rs 100 while it goes down by the same amount for the second person, find the numerical expressions for individual and market demand functions, and graph them in a separate diagram. (4+4)

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