RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

SECOND YEAR [2018-21]

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

Mid-Semester Examination, September 2019

Date : 16/09/2019 **ECONOMICS (Honours)**

Time : 1 pm – 3 pm **Paper : III** Full Marks : 50

[Use a separate Answer Book for each group]

Group – A

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

   a) Graph the contract curve for a two-person two-good exchange economy where agent A has the utility function $U^A = \min\{2x^A, y^A\}$ and agent B has the utility function $U^B = x^B + y^B$, and the total endowment of each good is 10 units in the economy (superscripts indicate the name of the agents).

   b) Let Akash has lexicographic preferences for apples over oranges while Bikash has lexicographic preferences for oranges over apples. The endowment vector for Akash and Bikash are (0 Apples, 10 Oranges) and (10 Apples, 0 Oranges) respectively. Find a competitive price vector if Akash and Bikash trade with each other and show the same in an Edgeworth box diagram, along with the initial endowment vector.

   c) Let the labor supply be given by $20W = L^S$ and labor demand is given by $10W = 1200 - L^D$, where W is the wage rate. Find equilibrium wage and employment in this market. What will happen to employment if minimum wage is set at i. 70/- and ii. 30/- respectively? (2+1)

   d) Why might a neighborhood group have a harder time self-insuring for flood damage versus fire damage?

   e) Suppose that a Health Insurance Company charges 15,000 rupees annually for a family insurance policy. The company's president suggests that the company raise the annual price to 16,000 rupees to increase its profits. If the firm followed this suggestion, what economic problem might arise? Would the firm's pool of customers tend to become more or less healthy on average? Would the company's profits necessarily increase? (1+1+1)

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

   a) Consider a two-person two-good exchange economy: persons/agents are A and B, and goods are 1 and 2. The agents have the following utility functions: $u_A = \alpha x_1 + x_2$ and $u_B = y_1 y_2$ where x_1 & x_2 denote the allocation to A of good 1 and good 2, respectively. Similarly, y_1 & y_2 denote the allocation to B of good 1 and good 2, respectively. There are 5 units of each good in the economy.

   Now, consider the following allocation: Agent A gets 4 units of good 1 only, but agent B gets 1 unit of good 1 and 5 units of good 2. Suppose an agent *i* is said to envy agent *j*, if *i* strictly prefers *j*'s allocation over his own allocation. And, an allocation is called `No-envy allocation' if none of the agents envies the other.

   i) Check if the above allocation is `No-envy allocation' when $\alpha \leq (3/5)$.

   ii) For what values of α, does the above allocation satisfy Pareto-optimality? (4+4)

   b) Suppose Akash wishes to purchase a HD television to watch the Champions League. His current income is 20,000 rupees, and he knows where he can buy the television he wants for 2,000 rupees. He had heard the rumor that the same set can be bought at *Honesty Store* for 1,700 rupees but is unsure if the rumor is true. Suppose this individual's utility is given by $U = \ln(Y)$ where *Y* is his income after buying the television.

   i) What is Akash's utility if he buys from the location he knows?

ii) What is Akash's utility if *Honesty Store* really does offer a lower price?

iii) Suppose Akash believes there is a 50-50 chance that *Honesty Store* does offer the lower-priced television, but it will cost him 100 rupees to drive to the discount store to find out for sure (the store is far away and has had its phone disconnected). Is it worth it to him to invest the money in the trip? (1+2+5)

c) Sadananda manages a tea store. His utility function is given by

$$Utility = w - 100$$

where w is the total of all monetary payments to him and 100 represents the cost to him of the effort of running the store. Sadananda's next best alternative to managing the store provides him with zero utility. The store's gross profit depends on random factors. There is a 50% chance it earns 1,000/- (where by earnings we mean gross profits, not including payments to the manager) and a 50% chance it earns only 400/-.

i) If shareholders offered to share half of the store's gross profit, what would his expected utility be? Would he accept such a contract? What would be the lowest share he would accept to manage the firm?

ii) Suppose instead that the shareholders decided to offer him a fixed salary. They will award Sadananda additional 100/- bonus if the store earns 1,000/-. What fixed salary would Sadananda need to be paid so that he accepts the contract? (4+4)

Group – B

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

a) Define PQLI.

b) Briefly mention some of the possible conflicts that a developing country may encounter in the process of development.

c) Define infant mortality rate.

d) Discuss the issue of coordination failure in a developing country with an example.

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

a) Define Human Development Index (HDI). Calculate HDI using the following information.

The country's income index is 0.517.

Adult literacy rate is 98.3%.

Gross enrolment ratio is 79.9 %.

Life-expectancy index is 0.795.

Give detailed rationale for your calculations. (2+6)

b) "Individuals need not make the right trade-offs. Whereas in the past we thought the implication was that the economy would be slightly distorted, we now understand that the interaction of these slightly distorted behaviours may produce large distortions. The consequence is that there may be multiple equilibria ..." (Hoff and Stiglitz, 2001).

Use a diagrammatic approach and explain the stability issues in a multiple equilibria setting. (8)

c) "Per-capita income growth is a robust measure of development." Do you agree with this assertion? Give reasons. (8)

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