

GENERAL ECONOMICS-I

2013

Time Allowed : Three Hours

Maximum Marks: 200

INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions :

There are Eleven questions divided under three Sections.

The only question in Section A is compulsory.

In Section B, Six out of Seven questions are to be attempted.

In Section C, Two out of Three questions are to be attempted.

Candidates should attempt questions / parts as indicated against it.

All parts and sub-parts of a question are to be attempted together in the answer book.

Attempts of a part / question shall be counted in chronological order. Unless struck off, attempt of a part / question shall be counted even if attempted partly. Any page or portion of the page left blank in the answer book must be clearly struck off.

Assumptions made for answering a question must be mentioned clearly.

Any diagram / graph to be drawn for answering a question should be made on the answer book itself and not on any separate graph sheet.

Answer must be written in ENGLISH only.

1. Answer any Ten of the following parts. Each answer should be in about 50 words:

- If the law of demand is $x = ae^{-bp}$, where p is price and x is quantity demanded. Express price elasticity of demand, total revenue and marginal revenue as function of x . 5
- Explain 'Leontief Inverse' in the input-output model suggested by W.W. Leontief. 5
- Graphically explain the expansion path of a firm taking labour and capital as inputs.
- What is adverse selection in insurance markets? How the problem can be solved?

- (e) Describe Gini's coefficient as a measure of inequality. 5
- (f) Show that Cobb-Douglas production function $Q = AL^\alpha K^{1-\alpha}$, where symbols have usual meaning, exhibits constant returns to scale but diminishing returns to a factor of production. 5
- (g) What is monopoly power? Give an expression for measuring it. 5
- (h) Why does a perfectly competitive firm keep on producing in the short-run even when it is incurring losses? Explain also when the firm will shut down. Use suitable diagram. 5
- (i) What are type I and type II errors in testing of a hypothesis? 5
- (j) Given utility function $U = q_1 q_2$ and budget constraint $Y = p_1 q_1 + p_2 q_2$, derive the indirect utility function. 5
- (k) State the causes of market failure.

SECTION—B

Answer any SIX of the following questions in about 150 words each.

15×6=90

2. Cardinal utility approach and ordinal utility approach to demand suggest same decision rule for the optimising consumer (which one?) Yet, latter approach is preferred over former. Why? 15
3. Describe Von Neuman and Morgenstern utility index. Is this index unique? Explain. 15
4. Define elasticity of goods substitution and distinguish it from cross-price elasticity of demand. Which one is a better measure of substitution and why? 15
5. Write dual of the following linear programme and solve the obtained dual graphically:
 Minimise : $Z = 3x_1 + 5x_2$
 subject to :
 $x_1 + 2x_2 \geq 1$
 $2x_1 + x_2 \geq 1$
 $x_1 \geq 0, x_2 \geq 0$ 15
6. Critically examine Hicks-Kaldor criterion of compensation. Give Scitovsky's improvement over this criterion. 15
7. State and explain the assumptions for applying ordinary least squares (OLS) method to two variable linear regression model :
 $Y_t = b_0 + b_1 X_t + u_t \quad t = 1, 2, n$ 15
8. "In the long-run competitive equilibrium rewarding each input according to its marginal physical product precisely exhausts the total physical product." Critically examine the above statement. 15

SECTION—C

Answer any TWO of the following questions. Each answer should be in about 300 words. 30x2=60

9. Consider the following duopoly. Demand is given by $P = 10 - Q$, where $Q = Q_l + Q_r$. The firm's cost functions are :

$$C_1(Q_l) = 4 + 2Q_l \text{ and } C_2(Q_r) = 3 + 3Q_r$$

- (a) Suppose both firms have entered the industry. What is joint profit maximizing level of output? How much will each firm produce? How would your answer change if the firms have not yet entered the industry? 15
- (b) What is each firm's equilibrium output and profit if they behave non-cooperatively? 15
10. Can the threat of a price war deter entry by potential competitors? What actions might a firm take to make this threat credible? Give example. 30
11. For statistically estimated demand function for the commodity X,

$$D_x = \frac{1547P_x^{0.2}P_y^{0.3}A^{0.4}}{P_z^{0.5}B^{0.3}}$$

(where x, y, z are goods, A stands for advertisement outlay, B for budget of the consumer and P_x, P_y, P_z are prices of goods x, y, z respectively).

Answer the following :

- (a) How are x, y and z related ? 10
- (b) Whether x is an inferior, normal or Giffen type good? 10
- (c) What would be the percentage change in demand for x (i.e. D) and in which direction if advertisement outlay increases by 50 percent ?

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