

A-JFT-M-FDPA

GENERAL ECONOMICS

Paper—I

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 per the instructions given in the Section.

The number of marks carried by a question / part is 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.*

SECTION—A

1. Answer any **TEN** of the following parts. Each answer should be in about **50** words. 5×10=50

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

- (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. 5

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 :

$$\text{Minimise : } Z = 3x_1 + 3x_2$$

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 :

$$Y_t = b_0 + b_1 X_t + u_t \quad t = 1, 2, \dots, n \quad 15$$

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. $30 \times 2 = 60$

9. Consider the following duopoly. Demand is given by $P = 10 - Q$, where $Q = Q_1 + Q_2$. The firm's cost functions are :

$$C_1(Q_1) = 4 + 2Q_1 \text{ and } C_2(Q_2) = 3 + 3Q_2.$$

(a) Suppose both firms have entered the industry. What is joint profit maximising 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-co-operatively ? 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,

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

(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_x) and in which direction if advertisement outlay increases by 50 percent ? 10