GENERAL ECONOMICS

Paper-I

(TIme *Allowed: Three Hours)* *(MtUimum Marks : 200)*

INSTRUCTIONS

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

There are Eleven questions divided under three Sec/ions.

. 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-paris 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 oft 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. 5xlO=50

   (a) If the law of demand is x = a e~P, where pis price and x is quantity demanded. Express price elasticity of demand, total revenue and marginal revenue as functions of x. 5

   (b) Explain 'Leontief lnverse' 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 $Q = AL^{a} K^{1-a}$, where symbols have ~ual 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 sui table diagram. 5

(i) What are type I and type II errors _in testing of a hypothesis ? . ·5

G) 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. 15x6=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 elast.icity 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: $Z = 3x_1 + .3x_2$

subject to :

$$x_1 + 2x_2 > 1$$

$$2x_1 + x_2 \sim 1$$

$$x_1 > 0,\ x_2 > 0$$ 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 t~ two variable linear regression model :

$$Y_t = b_0 + b.X_t + u_t \quad t = 1, 2, \quad\quad , n \qquad 15$$

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) + Q2' The firm's cost functions are :

   (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-eo-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 '7 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