

2025

ECONOMICS — HONOURS

Paper : DSCC-3

(Microeconomics - II)

Full Marks : 75

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer **any ten** questions :

2×10

- (a) Is it wrong to explain huge yearly income of several dollars, which the rock musicians sometimes earn, in terms of economic rent?
- (b) What do you mean by implicit cost?
- (c) State whether the following statements are true or false and correct the false statement(s) :
 - (i) If the long-run total cost curve is linear, the corresponding average and marginal costs will decline continuously.
 - (ii) If the utility function of an individual is given by : $u = \sqrt{w}$, where w denotes wealth, then the individual is risk averse.
- (d) What is the marginal product of labour for $L = 8$ for the production function $Q = (K)^{2/3}(L)^{1/3}$, if K is fixed at 27?
- (e) What do you mean to say that a person is risk averse?
- (f) If the equation of the total product curve is $TP = 6+2L$, where L denotes the amount of labour input. What is the marginal product of labour for $L = 3$?
- (g) Suppose a perfectly competitive firm has a production function $Q = L^{0.5}$. If price is ₹ 72 and wage rate is ₹ 6, then how many labours will the firm employ to maximise profit?
- (h) How is a computer company's demand for computer programmers a derived demand?
- (i) A firm is charged a tax that is proportional to the number of units produced. How does this tax affect the firm's fixed cost and marginal cost?
- (j) Why does a price ceiling usually result in a deadweight loss?
- (k) A firm's production function is $Q = (K)^{0.25}(L)^{0.25}$, what type of returns to scale condition does the firm face?
- (l) Define elasticity of substitution.

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- (m) Define point of inflexion.
 (n) What is sunk cost?
 (o) Determine the relationship between quasi rent and total fixed cost.

Group - B

2. Answer **any five** questions :

- (a) Vivek always gets twice as much utility from an extra piece of pizza as he gets from an extra piece of burger regardless of how many pieces of either item he has. Draw Vivek's income-consumption curve and his Engel curve for pizza. 3+2
- (b) The demand for labour of an industry is given by the curve $L^D = 1200 - 10w$ and the labour supply curve is given by $L^S = 20w$; where w is the wage rate.
- (i) What is the equilibrium wage rate and the quantity of labour hired?
 (ii) What is the economic rent earned by the workers?
 (iii) What would be the nature of economic rent when the labour supply becomes perfectly elastic? 2+2+1
- (c) Biju has collected following data about ABC Corporation in his locality : $MP_L = 20$; $MP_K = 30$; $P_L = ₹ 45$; $P_K = ₹ 90$.
- (i) Is this corporation running efficiently? Justify your answer.
 (ii) How would Biju improve the efficiency of the corporation if he is put in charge of ABC Corporation? (1+2)+2
- (d) Indu lives in a world of two periods — today and tomorrow. She earns ₹ 1,800 at the beginning of each period. If the interest rate is 0.5 in each period, what is the present value of her life time income? Draw her intertemporal budget constraint. 3+2
- (e) "If the government taxes land, wealthy land owners will pass the tax on to their poorer renters."—
- (i) Do you agree? Justify your answer.
 (ii) What will be the fate of consumer surplus, producer surplus and government revenue in this case? 2+3
- (f) Why does a competitive firm can only produce if price is greater than equal to average variable cost? 5
- (g) Show how the interaction between substitution effect and income effect is responsible for the different slopes of ordinary and compensated demand curve. 5
- (h) Define Marginal Rate of Technical Substitution (MRTS). What is the role of MRTS in determining upper and lower Ridge lines? 2+3

Group - C

Answer *any three* questions.

3. (a) A firm produces mineral water in a competitive industry and has a total cost :

$$C = 25 + 2q + q^2.$$

- (i) At the given market price of ₹ 10, the firm is producing 5 units of output in the short-run. Is the firm maximising its profit?
- (ii) What quantity of output should it produce in the long-run?
- (iii) What would be the long-run equilibrium price?

- (b) In long-run equilibrium, all firms in the industry earn zero economic profit. Why is it true?

(2+2+2)+4

4. (a) Rima's utility from wealth is given by :

$$U(w) = 3\sqrt{w}.$$

Her initial asset holding is ₹ 100. She may accept a gamble where she wins ₹ 21 with probability

$\frac{1}{3}$ and loses ₹ 19 with probability $\frac{2}{3}$.

- (i) What is her expected utility from the gamble?
- (ii) Will she accept the gamble? Justify your answer.
- (iii) Comment on her attitude towards risk.

- (b) (i) What do you mean by risk premium? Individuals with what kind of attitude do pay this premium?

- (ii) Rohan's utility from a lottery with expected income of ₹ 2,000 is 75 utils. However, he gets the same level of utility from a certain income of ₹ 1,500 only. Calculate his risk premium.

(2+2+2)+(2+1+1)

- 5 (a) "All Giffen goods are inferior, but all inferior goods are not Giffen."— Justify the statement with the help of diagrams showing the relative strength of substitution effect and income effect.

- (b) Is it possible that inferior good has a positively sloped demand curve?

7+3

6. (a) From the isoquant map of a fixed coefficient production function with constant returns to scale

$$Q = \min \left[\frac{L}{a}, \frac{K}{b} \right],$$

derive the total product, marginal product and average product of labour and comment on their shapes.

- (b) Let a production function is given by $Q = 15L^2 - 2L^3$, where Q and L have their usual meaning. Derive the amount of labour which will maximize the average product and marginal product of labour.

6+4

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7. (a) Explain the condition under which long-run supply curve of a competitive industry supply curve may have a negative slope.
- (b) Can a perfectly competitive firm maximize profit by operating on the downward sloping portion of its marginal cost curve?
- (c) An individual firm is spending 15% of its total budget on advertising. Is this situation inconsistent with the features of perfect competition? 6+2+2