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Q.P. Code: 32127

(3 Hours)

Total Marks: 100

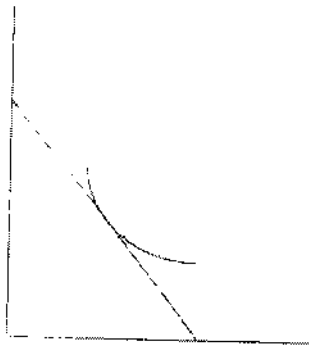
- N.B.: (1) All questions are compulsory  
(2) Attempt any two out of three from each question.  
(3) Draw appropriate diagrams wherever necessary

Q.1 Answer any two of the following (20)

a) What is Utility? Explain the following concepts with respect to utility as representation of preferences: strong and weak ordering, transitivity and rational preferences

- Marshall's proposition: Utility is the capacity of a good/ service to satisfy human wants (cardinal approach). Paul Samuelson: 'utility denotes satisfaction' (ordering/ ordinal approach)
- Samuelson's strong / weak preferences: strong ordering – each commodity has a definite preference, cannot be altered under same condition (if A is preferred to B; B cannot be preferred to A). Weak ordering: not possible to give definite ordering for commodities since all commodities (combinations) are equally preferred ( IC curve indicates weak ordering) .
- Transitivity represents consistency of preference: if A preferred to B & B preferred to C then A preferred to C); rational preference- preferences are indicated after analysing the cost-benefits of decisions – maximizing benefits and minimizing cost / loss.

b) How does consumer attain equilibrium under indifference curve analysis?



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Pt of tangency and not intersection between IC curve and Budget line ensures consumer's equilibrium.

$$MRS_{xy} = P_x / P_y$$

c) Explain changes in consumer's equilibrium due to changes in income.

Five types of ICC: Upward sloping, downward sloping, backward sloping, horizontal and vertical  
when both X & Y are normal, X is normal Y is inferior, X is inferior Y is normal, Y is neutral X is normal, X is neutral Y is normal

Q.2. Answer **any two** of the following (20)

a) **Discuss the law of variable proportions.**

- Short run production function with only 1 variable input factor and remaining fixed factors
- Three phases- 1<sup>st</sup> phase increasing returns (TP increases at increasing rate, AP rising, MP rising initially- reaches maximum and starts falling)  
2<sup>nd</sup> phase – diminishing returns ( TP increases at diminishing rate, AP starts falling, MP is falling and falls at a faster rate than AP)  
3<sup>rd</sup> phase- negative returns ( TP starts falling, AP is falling but is positive, MP is negative)

b) **Define the concept of Isoquant and enumerate its properties**

- Equal product curve or iso-product curve, represents various combinations of two factor inputs that give the same level of output
- Properties
  - Isoquants slope downwards from left to right
  - Isoquants are convex to the origin
  - Two isoquants never intersect / they are also not parallel to each other

c) **Explain Returns to Scale with the help of Isoquants and Expansion Path**

Increasing Returns : output increases to a greater proportion than increase in inputs and distance between two isoquants becomes smaller,

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constant returns : output increasing at the same rate as increase in inputs and distance between two isoquants is same ;

decreasing returns : output increases at a diminishing rate than increase in input and distance between two isoquant increases

Q.3 Answer any two of the following

(20)

a) Complete the following table:

Quantity of output	TFC	TVC	TC	AFC	AVC	AC	MC
0	100	00	100	00	00	00	00
1	100	25	125	100	25	125	25
2	100	40	140	50	20	70	15
3	100	50	150	33.3	16.7	50	10
4	100	70	170	25	17.5	42.5	20
5	100	100	200	20	20	40	30
6	100	145	245	16.6	24.2	40.8	45
7	100	205	305	14.3	29.3	43.6	60
8	100	285	385	12.5	35.6	48.1	80
9	100	385	485	11.1	42.8	53.9	100
10	100	615	715	10	51.5	61.5	130

b) 'Long run Average Cost Curve is also called as an envelope curve' explain

It consists of several short run AC curves/ diagram to be added

c) Prove that 'Linear MR curve under Monopoly market always lies mid-way between Y-axis and the AR curve'

- Diagram
- $TR = P \times Q$  &  $TR = \sum MR$  ; therefore, two triangles formed have the same area and the angles of the triangle are same . Therefore, length of the sides is same . Therefore, length of two corresponding sides is same hence, MR is mid-way

Q.4 Answer any two of the following

(20)

a) Explain equilibrium of a firm in the short run under homogeneous cost conditions with respect to : Supernormal Profit, Normal Profit and Sub- normal profits (Loss)

- Super normal profit :  $AR > AC$ ;  $P=AR$  curve is above AC curve
- Normal Profit:  $AR = AC$ ;  $P = AR$  curve is tangent to AC
- Sub – normal Profit (Loss) ,  $P=AR < AC$  but  $AR > AVC$

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- b) **Explain Marshall's concepts of Consumer's Surplus**
- Consumer's Surplus = What consumer is willing to pay – what he actually pays
  - Its surplus total utility above the expenditure on the commodity
  - List of assumptions
  - C's surplus mostly arises in case of necessity items
  - Diagram and numerical example
- c) **Explain equilibrium of an industry under perfect competition in the long run?**
- $LMC = LMR = LAR = LAC$
  - Firms earn only normal profits
  - Firms neither leave the market nor new firms enter the market

Q.5 Answer any two of the following short notes

(20)

a) **Derivation of Demand Curve from the Price Consumption Curve (PCC)**

- Two panel diagram
- In the first diagram Take money spent on Y – axis and units consumed on X-axis and show that price of commodity is falling by shifting the price lines along the X-axis
- Calculate price per unit by dividing money spent by number of units purchased
- Money spent  $1/ P_x >$  Money spent  $2/ P_x$  ; hence  $P_1 > P_2 \dots$  , quantity purchased is already given
- Hence, it gives different price- quantity relationships when joined together we get a demand curve

b) **Cobb- Douglas Production Function**

- $Q = A L^a K^{1-a}$   
 $= A (gL)^a (gK)^{1-a}$   
 $= A g^a L^a g^{1-a} K^{1-a}$   
 $= g (AL^a K^{1-a})$
- It represents constant returns to scale
- A sum of the exponents represents return to scale
- If  $a + b > 1$ ; increasing returns
- $a + b = 1$  ; constant returns
- $a + b < 1$  ; decreasing returns

c) **Total, Marginal and Average revenue under perfect competition market**

Total Revenue =  $P \times Q$ , the curve is linear and increases at a constant rate ( a diagonal straight line from the origin)

Average revenue =  $TR / Q$ ,  $AR = P \times Q / Q = P$  ;

Marginal revenue = incremental Total revenue per additional unit of sale

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$$MR_n = TR_n - TR_{n-1}$$

AR and MR are horizontal straight lines parallel to X-axis and both coincide with each other

**d) Derivation of Supply Curve under perfect competition**

Marginal cost curve above the SAVC is the supply curve of a firm . Indicates quantity supplied by the firm under perfect competition at pts.  $AR = MR = MC$  above the SAVC .

Draw relevant two panel diagram