

Question Paper

Economics – I (MB141): July 2008

- Answer all 76 questions.
- Marks are indicated against each question.

Total Marks : 100

1. Which of the following is **not true**?

- (a) Two Indifference curves never intersect each other
- (b) Total utility is the sum of marginal utilities of all units of a good consumed
- (c) When price of a product increases, demand for its complement will increase
- (d) Utility is subjective and therefore cannot be precisely measured
- (e) Consumer surplus of a good and its economic value are different.

(1 mark)

<Answer>

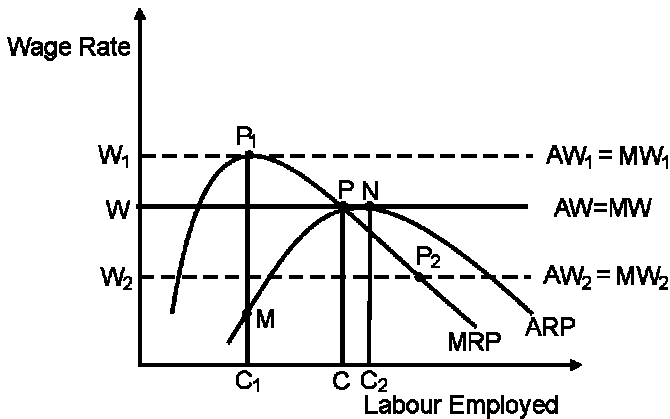
2. Substitution effect is represented by

- (a) A movement along the original price line
- (b) A shift from one indifference curve to another
- (c) A movement along the indifference curve
- (d) A movement along income-consumption curve
- (e) A movement along price-consumption curve.

(1 mark)

<Answer>

3. Refer to the diagram below:



The above diagram depicts determination of wages for labour in the long run as per the marginal productivity theory. In this diagram which point shows the equilibrium for a firm in the long run?

- (a) P₁
- (b) P
- (c) N
- (d) M
- (e) P₂.

(1 mark)

<Answer>

4. Which of the following statements is **not true**?

- (a) Scarcity is the source of economic problems
- (b) The problem of choice arises because unlimited resources have limited uses
- (c) Inflation arises due to scarcity of goods
- (d) Decision making involves evaluating various alternatives and selecting the best among them
- (e) Decisions of consumers depend on budget constraint and personal preferences.

(1 mark)

<Answer>

5. Which of the following is the **correct** inference, if a monopolist is maximizing profits?

- (a) Total revenue is maximum for the monopolist
- (b) Price charged by the monopolist is equal to the average cost of production
- (c) The difference between marginal revenue and marginal cost of the monopolist is maximum
- (d) Marginal revenue is equal to the marginal cost of the monopolist
- (e) Average variable cost is equal to the marginal cost of the monopolist.

(1 mark)

<Answer>

6. Which of the following factor(s) will cause an increase in the demand of a good?

- I. An increase in the price of its substitute.
- II. An increase in population.

(1 mark)

III. Expectations of future increase in the price of the good.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) All (I), (II) and (III) above.

7. Sugar is an important ingredient in the preparation of ice cream. Which of the following is/are **true**, *ceteris paribus*, if price of sugar falls?

<Answer>

- I. Demand for ice cream will decrease.
- II. Supply of ice cream will increase.
- III. Price of ice cream will increase.
- IV. Price of ice cream will decrease.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (IV) above
- (e) Both (II) and (IV) above.

(1 mark)

<Answer>

8. Which of the following statements is **false**?

- (a) The sharing of tax burden depends on elasticity of supply and elasticity of demand
- (b) When the price remains constant, the entire tax burden is borne by the supplier
- (c) When a unit tax is imposed, the supply curve shifts to the left
- (d) If the supply curve is perfectly elastic, the prices will increase by the full amount of the tax
- (e) If the demand curve is perfectly elastic, the price rises by full amount of tax and the whole tax is borne by the buyer.

(1 mark)

<Answer>

9. If the demand equation is given as $Q_d = 100 - 4P$ and price is Rs.10, the point elasticity of demand is

- (a) - 4.00
- (b) - 0.67
- (c) - 0.06
- (d) - 0.10
- (e) - 0.60.

(1 mark)

<Answer>

10. If a person has to purchase two commodities X and Y, his budget constraint can be represented as

- (a) Income for consumption \geq (price of X \times quantity of X) + (price of Y \times quantity of Y)
- (b) Income for consumption \leq (price of X \times quantity of X) + (price of Y \times quantity of Y)
- (c) Income for consumption \geq (price of X \times quantity of X) / (price of Y \times quantity of Y)
- (d) Income for consumption \geq (price of X \times quantity of X) \times (price of Y \times quantity of Y)
- (e) Income for consumption \leq (price of X \times quantity of X) - (price of Y \times quantity of Y).

(1 mark)

<Answer>

11. Which of the following statements is/are **true** with respect to indifference curve?

- I. The slope of the indifference curve represents the marginal rate of substitution between two goods.
- II. Different combinations of goods on an indifference curve have different levels of utility.
- III. A higher level of indifference curve connotes higher level of utility.

- (a) Only (I) above
- (b) Only (II) above
- (c) Both (I) and (II) above
- (d) Both (I) and (III) above
- (e) All (I), (II) and (III) above.

(1 mark)

<Answer>

12. OPEC announces a new agreement on production quotas that will reduce the amount of crude oil produced by member countries next year. Which of the following effects is likely to occur this year due to this announcement?

- (a) There is a shift in the demand curve for crude oil to the right
- (b) There is a shift in the demand curve for crude oil to the left
- (c) There is a shift in the supply curve for crude oil to the left
- (d) There is no effect on demand
- (e) Both the supply curve and demand curve for crude oil shift to the left.

(1 mark)

<Answer>

13. A monopolist, who faces a negatively sloped demand curve, would like to operate in the region where the elasticity of demand is

(1 mark)

elasticity of demand is

- (a) Less than one
- (b) Equal to one
- (c) Greater than one
- (d) Between zero and one
- (e) Zero.

14. A firm having a kinked demand curve indicates that

<Answer>

- I. If the firm reduces the price, competitive firms also reduce the price.
- II. If the firm increases the price, competitive firms also increase the price.
- III. If the firm reduces the price, competitive firms do not reduce the price.
- IV. If the firm increases the price, competitive firms do not increase the price.

- (a) Only (I) above
- (b) Both (I) and (II) above
- (c) Both (I) and (IV) above
- (d) Both (II) and (III) above
- (e) Both (II) and (IV) above.

(1 mark)

15. At the point of tangency between budget constraint and indifference curve, the consumer

<Answer>

- (a) Minimizes his/her budget
- (b) Maximizes his/her budget
- (c) Is unaffordable to buy the desired goods
- (d) Attains maximum satisfaction at a given budget
- (e) Consumes only one good.

(1 mark)

16. Which of the following represents the Marginal Rate of Technical Substitution (MRTS)?

<Answer>

- (a) Slope of the isocost curve
- (b) Slope of the indifference curve
- (c) Slope of the isoquant curve
- (d) Slope of the budget line
- (e) Slope of the average cost curve.

(1 mark)

17. Which of the following statements is **false** pertaining to utility?

<Answer>

- (a) Want satisfying power of a good is called utility
- (b) There exists a difference between choice and preference
- (c) The concept of utility is developed to explain the basic principles of consumer choice and behaviour
- (d) A rational consumer is one who allocates his spending in such a way that the preferred combination gives him the maximum satisfaction
- (e) According to ordinalist approach, the utility can be measured in subjective units.

(1 mark)

18. According to the Walker's rent theory of profit, the profit of an entrepreneur is "rent" for his

<Answer>

- (a) Efforts
- (b) Ability
- (c) Hard work
- (d) Planning
- (e) Investment.

(1 mark)

19. The reason why a consumer pays zero or a very low amount of money for certain items with high benefits is explained by

<Answer>

- (a) Law of demand
- (b) Law of variables proportions
- (c) Consumer surplus
- (d) Producer's surplus
- (e) Paradox of value.

(1 mark)

20. A firm will shut down its operations in the short run if

<Answer>

- (a) It incurs losses
- (b) Fixed costs exceed its revenue
- (c) Price falls below average variable cost
- (d) Total revenue falls short of total cost
- (e) Total fixed cost exceeds its total variable costs.

(1 mark)

21. The shape of marginal product curve is

<Answer>

- (a) Inverted U-shape
- (b) U-shape
- (c) Vertical straight line
- (d) Horizontal straight line
- (e) Downward sloping straight line.

(1 mark)

<Answer>

22. Which of the following does **not** cause a shift in the demand curve?

- (a) Change in the price of the good
- (b) Change in the income of the consumer
- (c) Change in the personal preferences
- (d) Change in the price of the related goods
- (e) Change in the consumption patterns.

(1 mark)

<Answer>

23. Which of the following is **not** a Modern theory of profit?

- (a) Clark's dynamic theory of profit
- (b) Schumpeter's innovation theory of profit
- (c) Walker's rent theory of profit
- (d) Knight's uncertainty bearing theory of profit
- (e) Hawley's risk theory of profit.

(1 mark)

<Answer>

24. Which of the following is **true** when firm's output is zero in the short run?

- (a) Its total cost will be zero
- (b) Its variable cost will be positive
- (c) Its fixed cost will be positive
- (d) Its average cost will be zero
- (e) Its marginal cost will be negative.

(1 mark)

<Answer>

25. Which of the following is/are **not** price floor(s)?

- I. Minimum wages.
- II. Rent control.
- III. Agricultural price support.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) Both (I) and (III) above.

(1 mark)

<Answer>

26. Consider the following Total Cost function:

$$TC = 1000 + 200Q - 9Q^2 + 0.25Q^3$$

Which of the following statements is **true**?

- (a) The average variable cost function is $\frac{1000}{Q} + 200 - 9Q + 0.25Q^2$
- (b) Fixed cost is $1000 + 200Q$
- (c) Marginal cost function is $200 - 9Q + 0.25Q^2$
- (d) The average cost function is $\frac{1000}{Q} + 200Q - 9Q + 0.25Q^2$
- (e) The variable cost function is $200Q - 9Q^2 + 0.25Q^3$.

(1 mark)

<Answer>

27. Which of the following statements is **not true** about a 'price taking firm'?

- (a) Its AR is always constant
- (b) It achieves equilibrium in short run when its MR equals its MC
- (c) It has a U-shaped average cost curve
- (d) It has the freedom to exit the industry if it is incurring losses
- (e) Its MR is always less than its AR.

(1 mark)

<Answer>

28. Mr. Rajesh is a regular consumer of good X. Recently the price of good X increased and Mr. Rajesh started consuming product Y. In this case product Y is a/an

(1 mark)

consuming product Y. In this case product Y is a/an

- (a) Substitute good
- (b) Complementary good
- (c) Luxurious good
- (d) Inferior good
- (e) Giffen good.

29. In a freely competitive market mechanism, a simultaneous equilibrium of production and consumption can be achieved when there is

- (a) Efficient allocation of resource among firms
- (b) Efficient allocation of resource among industries
- (c) Efficient distribution of goods produced among consumers
- (d) Efficient combination of products
- (e) Efficient coordination between firm and industry.

<Answer>

(1 mark)

<Answer>

30. Which of the following are **not true** about average fixed cost?

- I. Average Fixed Cost (AFC) never reaches zero.
 - II. Average Fixed Cost reaches minimum when MC intersects AFC.
 - III. The shape of Average Fixed Cost curve is linear.
 - IV. Average Fixed Cost is maximum when output is zero.
- (a) Both (I) and (II) above
 - (b) Both (II) and (III) above
 - (c) Both (II) and (IV) above
 - (d) (I), (II) and (III) above
 - (e) (II), (III) and (IV) above.

(1 mark)

<Answer>

31. In which of the following market structures are the marginal revenue **not** the same as price of the product?

- I. Perfect competition.
 - II. Monopoly.
 - III. Monopolistic competition.
 - IV. Oligopoly.
- (a) Both (I) and (II) above
 - (b) Both (I) and (III) above
 - (c) Both (II) and (III) above
 - (d) (II), (III) and (IV) above
 - (e) All (I), (II), (III) and (IV) above.

(1 mark)

<Answer>

32. Which of the following statements is **false** regarding monopoly?

- (a) There is no supply curve for a monopolist
- (b) A monopolist's individual demand curve possesses the same general properties as the industry demand curve for a perfectly competitive market
- (c) A monopolist may maximize profit with respect to variations of either output or price
- (d) The monopolist must increase the price of every unit in order to sell additional units
- (e) The rate decline in the MR of monopolist is twice the rate of decline of price.

(1 mark)

<Answer>

33. Which of the following is/are **not** qualitative technique(s) of demand forecasting?

- I. Expert opinion.
 - II. Survey.
 - III. Market experiments.
 - IV. Time series analysis.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (III) above
 - (d) Only (IV) above
 - (e) Both (I) and (II) above.

(1 mark)

<Answer>

34. Which of the following is/are **not true** regarding Consumer Surplus?

- I. Consumer surplus is helpful to the government in fixing taxes.
- II. Consumer surplus helps the monopolists in fixing price of a commodity.
- III. In case of imported products, which are cheaper than domestic products, the consumer surplus is less.

(1 mark)

IV. A higher consumer surplus indicates that the economy is stable.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (III) above
- (e) Both (II) and (IV) above.

<Answer>

35. An Isoquant is convex to the origin. This is due to

- (a) Increasing marginal rate of technical substitution
- (b) Constant marginal rate of technical substitution
- (c) Decreasing marginal rate of technical substitution
- (d) Increasing marginal rate of substitution
- (e) Decreasing marginal rate of substitution.

(1 mark)

<Answer>

36. Which of the following is an example of variable cost of production?

- (a) Cost of building
- (b) Purchasing heavy machines
- (c) Salaries of top-level managers
- (d) Salaries of temporary staff
- (e) Acquiring copyrights of the products.

(1 mark)

<Answer>

37. At the point of liquidity trap, the shape of liquidity preference curve is

- (a) Vertical Straight line
- (b) Horizontal Straight line
- (c) U Shaped
- (d) Downward Sloping Straight line
- (e) Upward Sloping Straight line.

(1 mark)

<Answer>

38. The break-even point for a perfectly competitive firm is achieved when

- (a) Average Revenue = Marginal Cost
- (b) Average Revenue = Average Cost
- (c) Total Revenue = Marginal Cost
- (d) Marginal Revenue = Average Variable Cost
- (e) Marginal Revenue = Marginal Cost.

(1 mark)

<Answer>

39. The economies and diseconomies of scale experienced by a firm is not indicated by the shape of

- (a) Average cost curve
- (b) Average variable cost curve
- (c) Average fixed cost curve
- (d) Marginal cost curve
- (e) Total cost curve.

(1 mark)

<Answer>

40. Marginal Value Product is equal to

- (a) Marginal Physical Product \times price
- (b) Marginal Revenue Product \times price
- (c) Marginal Physical Product / price
- (d) Marginal Revenue Product / price
- (e) Average Revenue product \times price.

(1 mark)

<Answer>

41. In perfect competition, imposition of a lump sum tax in short run will result in upward shift of which of the following curves?

- I. Average fixed cost.
- II. Average variable cost.
- III. Marginal cost.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) Both (I) and (III) above.

(1 mark)

<Answer>

42. An entrepreneur, who manages his firm, has to forgo his salary, which he could have earned if he had worked elsewhere. The foregone cost is known as

(1 mark)

elsewhere. The foregone cost is known as

- (a) Implicit cost
- (b) Explicit cost
- (c) Hidden cost
- (d) Actual cost
- (e) Sunk cost.

43. In a competitive market, with the entry of new firms, the aggregate output expands and the short-run industry supply curve shifts to the right and intersects the market demand curve. At this price level, all the firms in the industry will make

- (a) Maximum profits
- (b) Minimum profits
- (c) Zero profit
- (d) Losses
- (e) Abnormal profits.

(1 mark)

<Answer>

<Answer>

44. Market research conducted by Swati Electronics Ltd., indicated that the prices of consumer electronic goods have dropped, while consumer spending on these electronic goods has increased. It means the demand for consumer electronic goods is

- (a) Perfectly inelastic
- (b) Relatively inelastic
- (c) Relatively elastic
- (d) Unitary elastic
- (e) Perfectly elastic.

(1 mark)

<Answer>

45. When the consumer spends his income in such a way that the marginal utility of the last rupee spent on every commodity is the same, it implies that

- (a) The average utility is at a maximum
- (b) The marginal utility is at a maximum
- (c) Average utility is at a minimum
- (d) Total utility is at a maximum
- (e) Total utility is at a minimum.

(1 mark)

<Answer>

46. In a system of competitive markets, the greatest net benefit will be squeezed from available resources because the marginal benefit of each good equals its

- (a) Marginal cost
- (b) Marginal revenue
- (c) Total cost
- (d) Variable cost
- (e) Fixed cost.

(1 mark)

<Answer>

47. The diminishing marginal rate of technical substitution is related with

- (a) The law of increasing return
- (b) The law of decreasing return
- (c) The law of variable proportions
- (d) The law of demand
- (e) Returns to scale.

(1 mark)

<Answer>

48. Which of the following statements is **true**?

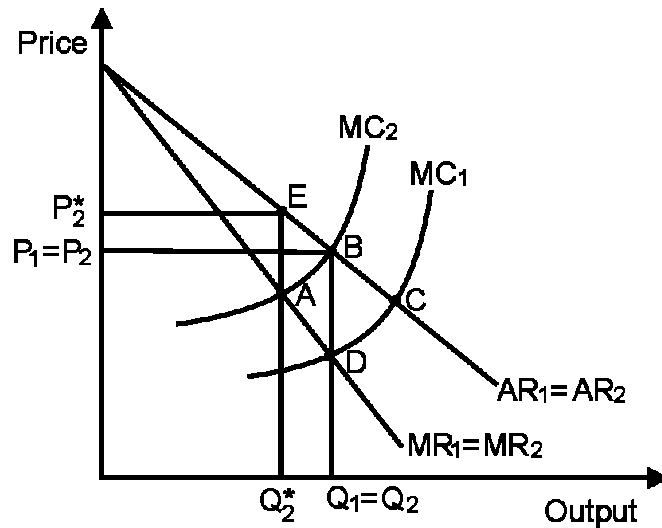
- (a) In a perfectly competitive market, an individual seller can influence the price
- (b) In a monopolistic market, no individual seller can influence the price
- (c) In a perfectly competitive market, an individual seller is the price taker
- (d) In a perfectly competitive market, advertisement plays a significant role
- (e) In a perfectly competitive market, price exceeds marginal revenue.

(1 mark)

<Answer>

49. The diagram below depicts the price leadership (by low cost firm) model of duopoly market, where the two firms produce a homogeneous product at two different costs (MC_1 is marginal cost curve of first firm and MC_2 is that of the second one). If the second firm decides **not** to follow the leader, at what point will its profit be maximized?

(1 mark)



- (a) A
- (b) B
- (c) C
- (d) D
- (e) E.

50. In monopoly, marginal revenue is negative when elasticity of demand is

- (a) Unity
- (b) More than unity
- (c) Less than unity
- (d) Zero
- (e) Infinity.

<Answer>

(1 mark)

51. A firm, operating in conditions of perfect competition, is producing a daily output, which is the profit maximizing output such that its total revenue is Rs.5,000. The firm's average cost is Rs.8, its marginal cost is Rs.10 and its average variable cost is Rs.5. The daily output of the firm is

- (a) 200 units
- (b) 500 units
- (c) 625 units
- (d) 1,000 units
- (e) 1,500 units.

<Answer>

(2 marks)

52. For a monopolist, the demand function is given as $P = 20 - Q$. What will be the total revenue earned by the monopolist if he sells 10 units of output?

- (a) Rs.100
- (b) Rs.200
- (c) Rs.300
- (d) Rs.500
- (e) Rs.400.

<Answer>

(2 marks)

53. A firm, in a perfectly competitive industry, is producing 100 units of output, its profit-maximizing quantity. The market price of the good is Rs.2, and total fixed costs and total variable costs are Rs.50 and Rs.40 respectively. The firm's economic profit is

- (a) Rs.200
- (b) Rs. 80
- (c) Rs.100
- (d) Rs.110
- (e) Rs. 90.

<Answer>

(2 marks)

54. Marginal utility of good X is 300 utils and its price is Rs.12. If price of good Y is Rs.30, the marginal utility of good Y at equilibrium is

- (a) 350 utils
- (b) 700 utils
- (c) 750 utils
- (d) 550 utils
- (e) 600 utils.

<Answer>

(2 marks)

(e) 600 utils.

55. Radha pharmaceuticals Ltd., has monopoly in producing a medicine which is used as preventive to a fatal viral fever. The demand function for this medicine is estimated as:

<Answer>

$$Q = 75 - P.$$

The total cost function is $TC = 25Q$. What is profit maximizing output and profit at that level of output respectively?

- (a) 20 units and Rs.400
- (b) 25 units and Rs.625
- (c) 30 units and Rs.625
- (d) 25 units and Rs.400
- (e) 30 units and Rs.400.

(2 marks)

56. A consumer is willing to buy 1,000 units of a product at a price of Rs.25 per unit. If the current price of the product is Rs.20, the consumer surplus is

<Answer>

- (a) Rs.3,000
- (b) Rs.3,500
- (c) Rs.4,000
- (d) Rs.4,500
- (e) Rs.5,000.

(2 marks)

57. The production function of a manufacturing unit, using only labor (L) as inputs in the production process, is estimated to be $Q = 100 L^2 - L^3$. The labor input at which the firm can maximize average productivity of labor is

<Answer>

- (a) 25 units
- (b) 37 units
- (c) 50 units
- (d) 62 units
- (e) 75 units.

(2 marks)

58. Demand function of a consumer is estimated to be $Q = 100 - 2P$. If the price is Rs.40, price elasticity of demand is

<Answer>

- (a) -4
- (b) -2
- (c) -1
- (d) Zero
- (e) 0.25.

(2 marks)

59. Demand and supply schedule for a product are given below:

<Answer>

| Price (Rs. per unit) | Quantity Demanded (units) | Quantity Supplied (units) |
|-------------------------|---------------------------------|---------------------------------|
| 10 | 500 | 320 |
| 12 | 450 | 360 |
| 14 | 400 | 400 |
| 16 | 350 | 440 |
| 18 | 300 | 480 |
| 20 | 250 | 520 |

Equilibrium price for the product is

- (a) Rs.10
- (b) Rs.12
- (c) Rs.14
- (d) Rs.16
- (e) Rs.18.

(2 marks)

60. Consider two points X and Y on a linear demand curve. The price and quantity demanded at the two points are given below:

<Answer>

| Point | Price (Rs.) | Quantity demanded (units) |
|-------|----------------|------------------------------|
| X | 7.50 | 3,000 |
| Y | 12.50 | 2,000 |

(2 marks)

The absolute value of elasticity of demand for an increase in price from Rs. 7.50 to Rs. 12.50 is

- (a) 0.50
- (b) 0.54
- (c) 0.59
- (d) 0.64
- (e) 0.69.

61. Total cost function of a firm is estimated to be $TC = 500 - 2Q + 3Q^2$. If the current output is 10 units, marginal cost is

<Answer>

- (a) Rs.46
- (b) Rs.48
- (c) Rs.54
- (d) Rs.56
- (e) Rs.58.

(2 marks)

<Answer>

62. The total cost function of a firm is given by

$$TC = 2,000 + 20Q - 30Q^2 + 0.25Q^3$$

The output at which the marginal cost is minimum is

- (a) 50 units
- (b) 35 units
- (c) 25 units
- (d) 40 units
- (e) 30 units.

(2 marks)

<Answer>

63. The demand and cost functions of a firm are given as follows:

$$P = 220 - 2Q$$
$$TC = 10 + 15Q$$

The output level at which total revenue can be maximized is

- (a) 20 units
- (b) 45 units
- (c) 55 units
- (d) 60 units
- (e) 72 units.

(2 marks)

<Answer>

64. Mrs. Radha can manufacture 1,000 soft toys per annum. The cost incurred to produce 200 soft toys is Rs.3,000 and to manufacture 300 units is Rs.4,000. If the average variable cost of manufacturing a unit is assumed to be constant, the fixed cost incurred will be

- (a) Rs.1,000
- (b) Rs.2,000
- (c) Rs.3,000
- (d) Rs.4,000
- (e) Rs.5,000.

(2 marks)

<Answer>

65. In the short run, the demand curve of a firm operating in a monopolistic market structure is $P = 440 - 15Q$. The marginal cost is constant at Rs.20. What will be the profit maximizing price?

- (a) Rs.210
- (b) Rs.230
- (c) Rs.240
- (d) Rs.260
- (e) Rs.280.

(2 marks)

<Answer>

66. Sabo, a company specializing in the production of mosquito mats, has the following cost and revenue functions:

$$TC = 2,000 + 50Q - 10Q^2 + Q^3$$
$$TR = 50Q - 2.5Q^2$$

If the firm maximizes its profits, the total cost of the firm is

- (a) Rs. 187.50
- (b) Rs.1,938.00
- (c) Rs.2,100.00
- (d) Rs.2,125.00

(2 marks)

- (d) Rs.2,125.00
- (e) Rs.4,250.00.

67. The marginal productivity theory of factor pricing is developed to explain which of the following point(s)?

<Answer>

- I. Reward of each factor unit is equal to its marginal productivity.
- II. Reward for each factor of production will be the same in every use.
- III. In the long run, under perfect competition, each factor of production will get its remuneration that will be equal to MRP which is also equal to its ARP.

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) All (I), (II) and (III) above.

(1 mark)

<Answer>

68. The following is the cost function of Balaji Ltd., a sole producer of oil paints.

$$TC = 200 + 10Q$$

Balaji Ltd., can segregate the market into two different sub markets – A and B. The demand functions for the two markets are estimated as

$$P_A = 80 - Q_A$$

$$P_B = 50 - 0.5Q_B$$

The output at which Balaji Ltd., makes the maximum profit is

- (a) 35 units
- (b) 40 units
- (c) 75 units
- (d) 115 units
- (e) 125 units.

(2 marks)

<Answer>

69. If the production function is $Q = 8KL$, the marginal rate of technical substitution of labor for capital is

- (a) 8
- (b) K/L
- (c) L/K
- (d) 8/KL
- (e) 8K/L.

(2 marks)

<Answer>

70. A firm faces the following demand curve:

$$Q = 2,000 - 50P.$$

What is the price of product if the objective of the firm is to maximize total revenue?

- (a) Rs.10
- (b) Rs.12
- (c) Rs.14
- (d) Rs.18
- (e) Rs.20.

(2 marks)

<Answer>

71. The production function for woollen garments for exports is estimated as $TP = 30L^2 - L^3$. The maximum possible average product of labor is

- (a) 250 units
- (b) 245 units
- (c) 225 units
- (d) 200 units
- (e) 175 units.

(2 marks)

<Answer>

72. The demand and supply functions of a commodity are given as follows:

$$Q_s = 200P - 250$$

$$Q_d = 750 - 50P$$

The equilibrium output for the product is

- (a) 450 units
- (b) 550 units
- (c) 650 units
- (d) 400 units
- (e) 300 units.

(2 marks)

(e) 300 units.

73. For a consumer in equilibrium, Marginal Rate of Substitution of X for Y (MRS_{xy}) is 3. If price of the good X (P_x) is Rs.75, price of good Y (P_y) is

<Answer>

- (a) Zero
- (b) Rs. 25
- (c) Rs. 75
- (d) Rs.150
- (e) Rs.175.

(2 marks)

74. If the average product of labor (AP_L) is $60L - L^2$, the maximum possible total product of labor (TP_L) is

<Answer>

- (a) 32,000 units
- (b) 24,000 units
- (c) 42,000 units
- (d) 52,000 units
- (e) 34,000 units.

(2 marks)

75. Possible earnings of Mr. Yogi from various activities for an hour are given as follows:

<Answer>

| Activity | Earnings (Rs. per hour) |
|------------|-------------------------|
| Acting | 1,000 |
| Consulting | 700 |
| Teaching | 500 |
| Writing | 300 |
| Sleeping | 0 |

The opportunity cost of an hour of consulting for Mr. Yogi is

- (a) Zero
- (b) Rs. 300
- (c) Rs. 500
- (d) Rs. 700
- (e) Rs.1,000.

(2 marks)

76. According to the Modern theory of Factor Pricing, a change in demand for a factor of production is/are due to which of the following?

<Answer>

- I. Change in the demand for the final product produced using the factors of production.
- II. Change in the productivity in terms of quality or quantity being produced.
- III. Change in the price of the substitute or complementary factors used in the production process.

- (a) Only (III) above
- (b) Both (I) and (II) above
- (c) Both (I) and (III) above
- (d) Both (II) and (III) above
- (e) All (I), (II) and (III) above.

(1 mark)

END OF QUESTION PAPER

Suggested Answers

Economics – I (MB141): July 2008

- | Answer | Reason | |
|--------|---|--------------------------|
| 1. C | <ul style="list-style-type: none">(a) True. Two Indifference curves never touches each other(b) True. Total utility is the sum of marginal utilities of all the goods consumed(c) False. When price of a product increases demand for the product decreases. As complimentary goods are consumed together, demand for the compliment also decreases.(d) True. Utility is subjective and varies from individual to individual and from time to time for the same individual, hence cannot be measured precisely.(e) True. Consumer surplus is the difference between what the consumer is willing to pay and what he actually pays. Economic value is the market value of a good consumed. | < TOP |

| | Answer | Reason | |
|-----|---------------|---|------------------------------|
| 2. | C | Substitution effect means the change in the purchase of a good as a consequence of a change in relative prices alone, real income remaining constant. A fall in relative price of a commodity always leads to the increase in its quantity demanded due to the substitution effect, the consumer's satisfaction or indifference curve remaining the same. Substitution effect is represented by a movement along an indifference curve. | < TOP |
| 3. | B | The firm will be in equilibrium when the wage rate, average revenue product and marginal revenue product average wage and marginal wage are equal. In the given diagram this condition is satisfied at point P. | <TOP > |
| 4. | B | a. The given statement is true. Scarcity is the source of economic problems b. The given statement is not true. The problem of choice arises because limited resources have unlimited uses c. Is true. Inflation arises due to scarcity of goods d. The given statement is true. Decision making involves evaluating various alternatives and selecting the best among them e. The given statement is true. Decisions of consumers depend on budget constraint and personal preferences. | < TOP |
| 5. | D | To maximize profits a firm should equate MC to MR and the slope of MC should be greater than the slope of MR. (a) is not correct because for profit maximizing MC = MR and to maximize total revenue MR = 0. (b) is not correct because P = AC indicates a break-even situation where profits are equal to zero. (c) is not the answer because maximizing the difference between marginal revenue and marginal cost does not maximize profits. (d) is the answer as profit maximizing requires MC = MR(e) is not the answer because MC = AVC indicates minimum AVC situation where profits are not maximized. | < TOP |
| 6. | E | The following factors will cause an increase in the demand <ul style="list-style-type: none"> • An increase in price of substitute. • An increase in population. • Expectations of future increase in the price of good. | < TOP |
| 7. | E | When price of sugar falls, it reduces the cost of production of ice cream. This encourages suppliers to supply more to increase their profits. When supply of ice cream increases (supply curve shifts right), the price of ice cream falls. Hence, the correct answer is (e). | < TOP |
| 8. | E | If the demand curve is perfectly elastic then the price rises does not rise at all and the whole tax is borne by the seller. | < TOP |
| 9. | B | $P = \text{Rs.}10$ $Q_d = 100 - 4(10)$ $100 - 40 = 60$ $\frac{\partial Q_d}{\partial p} = -4(\text{slope})$ $E_p = -4 \times 10 / 60 = -0.67$ | < TOP |
| 10. | A | The budget constraint implies that the total income spent on consumption of the products in question must be less than or equal to the money income available for consumption. In the given case it is represented as Income for consumption \geq price of X \times quantity of X + price of Y \times quantity of Y. | < TOP |
| 11. | D | Statement II is incorrect because different combinations of goods on an indifference curve have same level of utility. Statement I and III are correct. | < TOP |
| 12. | A | Due to the announcement that a new agreement on production quotas that will reduce the amount of crude oil produced by member countries next year, people want to buy more oil this year. This causes shift in demand curve to the right. | < TOP |
| 13. | C | (a) If $e_p < 1$, $MR < 0$, hence the monopolist would not like to operate in this segment. (b) If $e_p = 1$, $MR = 0$, If the objective of the monopolist is to maximize total revenue, he may operate at this point. But generally the objective of any firm is to maximize profits and would like to operate in the range where $MR > 0$. This is to ensure $MR = MC$. (c) If $e_p > 1$, $MR > 0$. This is the range where a monopolist would operate. (d) If $0 < e_p < 1$, $MR < 0$. Monopolist would not operate in this range. (e) If $e_p = 0$, $MR < 0$ and the monopolist would not operate in this range. | < TOP |
| 14. | C | The kinked demand curve model is based on the assumption that when a firm increase price other firms in the industry do not follow and if the firm decrease price | < TOP |

| Answer | Reason | |
|---------------|--|--------------------------|
| | increase price other firms in the industry do not follow and if the firm decrease price other firms also decrease the price. Hence, the answer is (c). | |
| 15. | D The point of tangency between the budget constraint and the indifference curve indicates that the consumer is in equilibrium. That is consumer attains maximum amount of satisfaction implying that all the other combinations give him the lesser utility or unavailability given his budget. Hence the correct answer is (d). | < TOP |
| 16. | C The slope of the isoquant represents the Marginal Rate of Technical Substitution (MRTS) between labor (L) and capital (K). MRTS is equal to the ratio of the marginal productivities of two factors. (a) The slope of the isocost curve represents ratio of wages (w) and interest (r). (b) The slope of the indifference curve signifies marginal rate of substitution of goods (MRS). (c) The slope of the isoquant curve signifies the marginal rate of technical substitution (MRTS) between labor and capital. (d) The slope of the budget line represents ratio of price of good X and good Y. (e) The slope of the average cost curve only shows the rate of change in average cost curve with respect change in output. | < TOP |
| 17. | E (a) is true. Utility is defined as the extent of satisfaction obtained from the consumption of goods and services. (b) is true. There exists a difference between choice and preference. Preference pertains to the likes and dislikes of the consumers, where as a consumer makes choice between the available alternatives which suits best to his budget. (c) is true. The concept of utility is developed to explain the basic principles of consumer choice and behaviour. The consumer make choice of a particular good or a bundle of goods based on the utility that he can derive out of it. (d) is true. A rational consumer is one who allocates his spending in such a way that the preferred combination gives him the maximum satisfaction (e) is not true. According to ordinalist approach utility cannot be measured but can only be ranked in order of preference. | < TOP |
| 18. | B According to Walker an entrepreneur earns profit because of his greater ability to run the business when compared to other entrepreneur. Hence he defined profit as the “rent of ability” of an entrepreneur. Hence option (b) is the correct answer | < TOP |
| 19. | E The reason why a consumer pays zero or a very low amount of money for certain items with high benefits is explained by the paradox of value. | < TOP |
| 20. | C When the price falls below average variable cost of the firm, it can reduce the losses by shutting down its operations. Even if its fixed costs exceed its revenue, the firm may not shut down its operations because the firm can reduce its fixed cost loss through sales. | < TOP |
| 21. | A The marginal product of a factor increases first and after reaching a certain level it starts falling. So due to this the marginal product curve assume an inverted u shape. | < TOP |
| 22. | A Movement of the demand curve implies that the change in the price of the good will lead to change in the demand for the good. For instance, fall in the price leads to extension in the demand curve. Similarly increase in the price of good leads to contraction in the demand for the good. A shift in the demand curve is caused by a change in any non-price determinant of demand. The curve can shift to the right or left. The factors that are responsible for shift in the demand curve may be listed out as follows: Income of the consumers prices of other goods (substitutes or complements) Tastes and preferences of consumers. a. It is appropriate in this instance because it is not the factor that is responsible for the shift in the demand curve but it represents the movement along the demand curve. b. It is not appropriate in this instance because it is one of the factors that is responsible for shift in the demand curve. c. It is not appropriate in this instance because it is one of the factors that is responsible for shift in the demand curve. d. It is not appropriate in this instance because it is one of the factors that is responsible for shift in the demand curve. e. It is not appropriate in this instance because it is one of the factors that is responsible for shift in the demand curve. The correct answer is (a). | < TOP |
| 23. | C The modern theories of profit includes Clark’s dynamic theory of profit, Schumpeter’s innovation theory of profit, Knight’s uncertainty bearing theory of profit and Hawley’s risk theory of profit. Where as Walker’s rent theory of profit comes under traditional theory of profit. Hence option (c) is the correct answer | < TOP |
| 24. | C (a) Is not the answer because if a firm produces zero output in the short period, its total cost will not be zero because total fixed cost is constant. | < TOP |

| Answer | Reason | |
|---------------|--|--------------------------|
| | (b) Is not the answer because its variable cost will not be positive. | |
| | (c) Is the answer because its fixed cost will be positive | |
| | (d) Is not the answer because average cost will not be zero rather it will be a positive number. | |
| | (e) Is not the answer because fixed cost will never be negative. | |
| 25. | B Minimum wages and Agricultural price support are price floors whereas Rent control is a form of price ceiling. | < TOP |
| 26. | E (a) Is not true because the average variable cost function is $200 - 9Q + 0.25Q^2$ (b) Is not true because fixed cost is Rs. 1000 (c) Is not true because the marginal cost function will be $200 - 18Q + 0.75Q^2$ | < TOP |
| | $\frac{1000}{Q}$ | |
| | (d) Is not true because the average cost function is $\frac{1000}{Q} + 200 - 9Q + 0.25Q^2$ (e) Is true because the variable cost function is $200Q - 9Q^2 + 0.25Q^3$. | |
| 27. | E A price taking firms is a firm which is operating in a perfectly competitive market. Option (a) is true. Its AR that is price per unit is always constant as it has to take the price as given by the industry. Option (b) is true. It achieves equilibrium in short run when its MR equals its MC. Option (c) is true. It has a U-shaped average cost curve Option (d) is true. It has the freedom to exit the industry if it is incurring losses Option (e) is not true because in the perfect competition the $MR = AR$. | < TOP |
| 28. | A In the given case product Y is a substitute of good X. | < TOP |
| 29. | D In a freely competitive market mechanism a simultaneous equilibrium of production and consumption can be achieved when there is efficient combination of products. | < TOP |
| 30. | B I. When output becomes very large, average fixed cost approaches zero, but it never reaches zero, if there is a certain amount of fixed costs. II. It is not true that AFC reaches minimum when MC intersects AFC. AFC does not reach minimum when MC cuts AFC. There is no minimum point of AFC III. It is not true that the shape of AFC curve is linear. The shape of average fixed cost curve is rectangular hyperbola indicating that when the output increases by a certain percentage, the average fixed cost decreases by the same percentage such that their product representing total fixed cost remains constant thoughtout. IV. Average fixed cost is maximum when output is zero. | < TOP |
| 31. | D Except in perfect competition, in all the given market structure the marginal revenue of the firm will be different from (demand curve (AR curve)) the price of the product. | < TOP |
| 32. | D The monopolist must decrease the price of every unit in order to sell an additional unit that is why the marginal revenue curve of the monopolists slopes downwards from left to right. | < TOP |
| 33. | D The techniques used for demand forecasting are divided into two – Quantitative and Qualitative. Qualitative techniques include expert opinion, market experiment and survey while Quantitative measures include time series analysis and barometric methods. Hence from the given option time series analysis is not a qualitative technique of demand forecasting. | < TOP |
| 34. | C I. Is true. Consumer surplus is useful to the government to fix taxes. It is useful to fix taxes since the rich or the upper class people have more consumer surplus compared to the rest. Consumer surplus also reveals the purchasing pattern of the economy. By observing the nature of the products moving in the market, the government can fix the taxes through the classification of products. II. Is true. Consumer surplus helps the monopolists in fixing price of a commodity. While pricing a commodity, if a monopolist considers consumer surplus, he can retain the customer for a longer period. III. Is not true. In case of imported products which are cheaper than domestic products the consumer surplus is more. This is because he is paying less for the imported product which is giving him the same level of satisfaction. IV. Is true. A higher consumer surplus indicates that the economy is stable and vice | < TOP |

| Answer | Reason | |
|--------|--|--------------------------|
| | versa. A negative consumer surplus indicates that the economy is not functioning efficiently. | |
| 35. | C If the law of diminishing marginal product operates, the isoquants will be convex to the origin. A convex isoquant means that the marginal rate of technical substitution between labor and capital decreases as labor is substituted for capital. Isoquant convex to the origin means there is decreasing marginal rate of technical substitution prevailing. | < TOP |
| 36. | D Variable costs are those costs that increase with the level of output. Salaries of temporary staff are an example of variable cost of production. | < TOP |
| 37. | B At liquidity trap the interest rate remains same even if there is a increase in money supply. According to Keynes the interest rate cannot be zero or negative, hence at liquidity trap the downward sloping liquidity preference curve takes the shape of a horizontal straight line | < TOP |
| 38. | B Break Even Point in perfect competition is at when $AR = AC$. | < TOP |
| 39. | C Economies and diseconomies of scale experienced by a firm is indicated by Long-run average cost curve. Since all factors are variable in the long-run, there are no fixed costs in the long-run. Therefore, AFC will not indicate the shape of economies and diseconomies of scale. Hence the correct answer is (c). | < TOP |
| 40. | A Marginal Value Product is the monetary representation of Marginal Physical Product, so, $MVP = MPP \times \text{price}$. | < TOP |
| 41. | A The effect of a lump sum tax is similar to that of an increase in the fixed cost, since a lump sum is to be paid as fixed cost by the firm. The imposition of lump sum tax will result in an upward shift of the average fixed cost. There will not be any effect on the AVC and MC since a lump sum is like a fixed cost to the firm. | < TOP |
| 42. | A Implicit costs are the value of forgone opportunities that do not involve a physical cash payment. Though implicit costs are not included in accounts, they do play an important role in a decision making process. | < TOP |
| 43. | C In short run in a perfectly competitive market there is a tendency for the existing firms to earn abnormal profits. This will attract other firms to enter the industry. With the entry of new firms aggregate output would expand and the short run supply curve will shift to right until it intersects the market demand curve. At this level of price all the firms will make zero profits in the long run. | < TOP |
| 44. | C When the prices of consumer electronics have dropped, while consumer spending on these electronic goods has increased, the demand for consumer electronic goods is relatively elastic. In this case the percentage change in quantity demanded is greater than the percentage change in price and the value of price elasticity of demand will be greater than one. (a) Is not the answer because in case of a perfectly inelastic demand, if the price of a good decreases, consumer spending on these goods has to be decreased. (b) Is not the answer because in case of a relatively inelastic demand, if the price of a good decreases, consumer spending on these goods has to be decreased. (c) Is the answer because in case of a relatively elastic demand, if the price of a good decreases, consumer spending on these goods has to be increased. (d) Is not the answer because in case of a unitary inelastic demand, if the price of a good decreases, consumer spending on these goods remain constant. (e) Is not the answer because in case of a perfectly elastic demand, if the price of a good decreases, consumer spending on these goods undetermined. | < TOP |
| 45. | D Given the income of the consumer and the market prices of goods, the marginal utility of the last rupee spent on the goods is always the same, if the consumer is to maximize his total utility. | < TOP |
| 46. | A In a system of competitive markets the greatest net benefit will be squeezed from available resources because the marginal benefit of each good equals its marginal cost which is also equal to the minimum possible average cost. The system will economize on resource use because each good will be produced at the minimum possible unit cost. | < TOP |
| 47. | C The diminishing marginal rate of technical substitution is possible only for a convex isoquant. And the isoquant is convex only when there exists the law of diminishing marginal product or the law of variable proportions. | < TOP |
| 48. | C In a perfectly competitive market, an individual seller is the price taker. In a perfectly competitive market, there are large number of buyers and sellers in the | < TOP |

| Answer | Reason | |
|---------------|--|--------------------------|
| | perfectly competitive market, there are large number of buyers and sellers in the industry/market, so that no individual buyer can influence the price by changing the purchase or output. This means that the individual buyer or seller is an insignificant player in the market. | |
| 49. A | In Price leadership by a low cost firm the follower has to follow the price at which the low cost firm is selling its output. In the given case the first firm is the low cost firm whose MC curve lies below the MC curve of the second firm. The first firm's MR is equal to its MC at point D where it sells Q_1 units of output and sets a price P_1 . The second firm if it follows the leader will also charge the same price. At this point it cannot maximize its profits. If at all it decides to maximize its profit it has sell it output at price where his $MC = MR$. That is the firm will get maximum profit at point A. | < TOP |
| 50. C | In monopoly, marginal revenue is negative when elasticity of demand is less than unity. | < TOP |
| 51. B | For a competitive firm profits are maximized where price equals marginal cost. The price of the firm's output is Rs.10. Since the total revenue is Rs.5,000, total output is $5,000/10 = 500$ units. | < TOP |
| 52. A | $TR = P \times Q = 20Q - Q^2$ When $Q = 10$ $TR = 20(10) - 10^2 = 200 - 100 = \text{Rs. } 100$. | < TOP |
| 53. D | $TR = P \times Q = 2 \times 100 = 200$ $TC = TFC + TVC = 50 + 40 = 90$ $\therefore \text{Economic profit} = TR - TC = 200 - 90 = \text{Rs. } 110$. | < TOP |
| 54. C | $MU_x/P_x = MU_y/P_y$ $300/12 = MU_y/30$ $= MU_y = 9000/12$ $= 750 \text{ Utils}$ | < TOP |
| 55. B | Demand function of the firm is given as $Q = 75 - P$ $P = 75 - Q$ $TR = P \times Q = 75Q - Q^2$ $MR = 75 - 2Q$ $TC = 25Q$ $MC = 25$ Profit maximizing output is obtained when $MR = MC$ $\Rightarrow 75 - 2Q = 25$ $\Rightarrow 2Q = 50$ $\Rightarrow Q = 25$ $P = 75 - Q = 75 - 25 = 50$ Profit = $TR - TC$ $TR = P \times Q = 50 \times 25 = 1250$ $TC = 25Q = 25 \times 25 = 625$ $\therefore \text{Profit} = 1250 - 625 = \text{Rs. } 625$. | < TOP |
| 56. E | Consumer surplus is the amount of money actually paid by the consumer and the amount of money he is willing to pay rather than go without it. Consumer surplus = $(1000 \times 25) - (1000 \times 20) = \text{Rs. } 5,000$ | < TOP |
| 57. C | Given $Q =$ AP_L is maximum when $AP_L = MP_L$ $MP_L = \frac{dQ}{dL} = 200L - 3L^2$ $AP_L = \frac{Q}{L} = 100L - L^2$ $200L - 3L^2 = 100L - L^2$ $\Rightarrow 100L^2 - 2L^2$ $\Rightarrow 2L = 100$ $L = 50$. | < TOP |
| 58. A | $Q = 100 - 2P$ When $P = 40, Q = 20$ | < TOP |

| Answer | Reason | |
|--------|--|--------------------------|
| | $e_p = \frac{\partial Q}{\partial P} \cdot \frac{P}{Q} = -2 \times \frac{40}{20} = -4$ | |
| 59. C | Equilibrium price is determined, when Demand = Supply $D = S = 400$, when the price is Rs.14.00. So, the answer is (c). | < TOP |
| 60. A | $\text{Price elasticity of demand} = \frac{\% \text{ change in demand}}{\% \text{ change in price}} = \frac{\frac{-1000}{3000}}{\frac{5}{7.5}} = \frac{0.33}{7.5} = -0.50 = 0.50$ | < TOP |
| 61. E | $TC = 500 - 2Q + 3Q^2$ $MC = -2 + 6Q$ If $Q = 10$, $MC = -2 + 60 = \text{Rs.}58$ | < TOP |
| 62. D | $TC = 2000 + 20Q - 30Q^2 + 0.25Q^3$ $MC = \partial TC / \partial Q$ $= 20 - 60Q + 0.75Q^2$ $\partial MC / \partial Q = -60 + 1.5Q = 0$ $= 1.5Q = 60$ $Q = 40.$ | < TOP |
| 63. C | $TR = P \times Q$ $= (220 - 2Q) Q = 220Q - 2Q^2$ When, $MR = 0$, TR will be maximum. $MR = \partial TR / \partial Q = 220 - 4Q = 0$ Or, $220 = 4Q$ Or, $Q = 55.$ | < TOP |
| 64. A | Variable cost for 100 units = $4000 - 3000 = 1000$ Average variable cost = $1000/100 = 10$ Total cost = Fixed cost + Total variable cost Fixed cost = Total cost – Total variable cost $= 3000 - 200 \times 10 = 1,000.$ Hence the correct answer is (a). | < TOP |
| 65. B | In monopolistic competition the profit maximizing price is obtained by equating MC and MR. $MC = 20$ $TR = P \times Q = (440 - 15Q) Q = 440Q - 15Q^2$ $MR = 440 - 30Q$ $MR = MC = 440 - 30Q = 20$ $Q = 420 / 30 = 14.$ Profit maximizing price = $440 - 210 = \text{Rs.}230$ | < TOP |
| 66. D | $TC = 2000 + 5Q - 10Q^2 + Q^3$ $MC = 50 - 20Q + 3Q^2$ $TR = 50Q - 2.5Q^2$ $MR = 50 - 5Q$ Profit is maximum when $MC = MR.$ Or when $50 - 20Q + 3Q^2 = 50 - 5Q$ $3Q^2 = 15Q; Q = 5.$ Total cost when $Q = 5$ is $2,000 + 50Q - 10Q^2 + Q^3 = \text{Rs. } 2,125$ | < TOP |
| 67. E | The marginal productivity theory of factoring pricing explains all the three points I. The theory states that the producer being rational tries to maximize profits or minimize losses in the process of production. Since cost of production according to the producer also includes factor payments, in order to maximize profits or minimize losses the producer compares the price of a factor with its productivity. II. The theory also states that the remuneration paid for each factor of production is will be same in every use. This is based on the assumption that all factors of production are perfect substitutes of each other. If not so, then the various factor of production are substituted for each until their marginal products are equal. | < TOP |

Answer**Reason**

III. The producer, in the short run, will be in an equilibrium position as long as the average revenue and marginal revenue of a factor of production are equal. In the long run equilibrium position for utilization of factors of production can be maintained, only if the marginal revenue productivity, average revenue productivity and the rate of reward for the factor of production are equal.

So (e) is the correct answer.

68. C $MR_A = MC;$ [< TOP](#)
 $TC = 200 + 10Q$
 $MC = 10$
 $TR_A = 80Q_A - Q_A^2$
 $MR_A = 80 - 2Q_A;$
 $80 - 2Q_A = 10$
 $Q_A = 35$
 $TR_B = 50Q_B - 0.5Q_B^2$
 $MR_B = 50 - Q_B$
 $MR_B = MC$
 $50 - Q_B = 10$
 $Q_B = 40$
 Total output, $Q = 35 + 40 = 75$ units.
69. B $MRTS_{LK} = MP_L/MP_K$ [< TOP](#)
 $MP_L = 8K$
 $MP_K = 8L$
 $MRTS_{LK} = MP_L/MP_K = 8K/8L = K/L.$
70. E Demand curve for the firm is [< TOP](#)
 $Q = 2,000 - 50P$
 $50P = 2,000 - Q$
 $P = 40 - 0.02Q$
 The objective of the firm is to maximize revenue.
 Revenue is maximized when MR is zero.
 $\therefore TR = PQ$
 $= (40 - 0.02Q)Q$
 $= 40Q - 0.02Q^2$
 $MR = 40 - 0.04Q$
 Total Revenue is maximized where $MR = 0$
 $\therefore 40 - 0.04Q = 0$
 $Q = \frac{40}{0.04} = 1000$ units.
 When $Q = 1000$, then $P = 40 - 0.02(1000)$
 $= 40 - 20 = \text{Rs. } 20.$
71. C $AP = TP/L = 30L - L^2$ [< TOP](#)
 Maximum AP: $\partial AP/\partial L = 0$
 $30 - 2L = 0$
 Or, $L = 15$
 At $L = 15$, $AP = 30(15) - 15 \times 15 = 225$ units.
72. B $Q_s = 200P - 250$ [< TOP](#)
 $Q_d = 750 - 50P$
 Equilibrium price is determined when $Q_s = Q_d$.
 $\therefore 200P - 250 = 750 - 50P$
 or, $250P = 1000$
 or, $P = 4$
 When $P = 4$, $Q_s = 200(4) - 250 = 800 - 250 = 550$ units.
73. B When the consumer is in equilibrium, [< TOP](#)

$$|MRS_{xy}| = \left| \frac{P_x}{P_y} \right|$$

$$\therefore 3 = \frac{75}{P_y}$$

 $P_y = 25.$

| | Answer | Reason | |
|-----|---------------|--|--------------------------|
| 74. | A | $AP_L = 60L - L^2$ $TP_L = AP_L \times L = 60L^2 - L^3$ TP_L can be maximized when $MP_L = 0$ Therefore, $\partial TP_L / \partial L = 120L - 3L^2 = 0$ $L(120 - 3L) = 0$ $L = 0$ or $L = 40$. Since labour cannot be zero $L = 40$ ∴ Output can be maximized by employing 40 labors. ∴ Maximum possible $TP_L = 60(40)^2 - (40)^3 = 96,000 - 64,000 = 32,000$ units | < TOP |
| 75. | E | Mr. Yogi could have earned Rs.1000/hr by acting. If he chooses consulting instead, the best alternative foregone is acting. Hence the opportunity cost of consulting is Rs.1000/hr. | < TOP |
| 76. | E | I. Is applicable because as the demand for particular product increase subsequently its production has to be increased and in order to increase the production more and more factors of production are employed. II. Is also applicable because change in productivity of a factor of production may lead to change in the demand for that factor for example if firm need to produce 5000 units of a particular product in a specified time and the labor available with it has less productivity then the firm has to employ some more labor. III. Is also applicable because change in the price of the substitute or complementary factors used in the production process may lead to change in the demand for factor of production of production. For example, demand for labor and machine are interrelated and firms may utilize more or less of one of them, if the relative price of either of the factors of production increase against each other. | < TOP |

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