

Question Paper

Economics - I (MSF1A3): January 2008

- Answer all 75 questions.
- Marks are indicated against each question.

Total Marks : 100

[<Answer>](#)1. Which of the following statements is **not true**?

- (a) The source of any economic problems is scarcity
- (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) Scarcity is a relative concept.

(1 mark)

[<Answer>](#)2. Which of the following is/are **true** about a 'command economy'?

- I. In a command economy the decisions pertaining to production and distribution are determined by using a hierarchical organization structure in which people carry out the instructions given to them.
- II. Government enterprises and government ownership of resources are the rule rather than the exception in a command economy.
- III. In a command economy, authoritarian methods are used to determine resource use and prices.

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

(1 mark)

[<Answer>](#)

3. Which of the following factor(s) will cause a decrease in the demand?

- I. An increase in the price of substitute.
- II. A decrease in the price of complement.
- III. Expectations of future decrease in the price of a 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.

(1 mark)

[<Answer>](#)

4. What will happen when price of a good remains constant at a point and demand increases?

- (a) The demand curve shifts to right
- (b) The demand curve shifts to left
- (c) There will be a downward movement along the demand curve
- (d) There will be an upward movement along the demand curve
- (e) The demand curve becomes horizontal.

(1 mark)

[<Answer>](#)

5. For luxury goods the income elasticity is

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

(1 mark)

[<Answer>](#)6. Which of the following statements is **not true**?

- (a) Cross price elasticity between perfect substitutes is infinity
- (b) There exists a difference between income elasticity and income sensitivity of demand
- (c) Goods with positive income elasticity are called as normal goods
- (d) Slope of the demand curve and elasticity of demand are one and the same
- (e) When price elasticity is zero, then the quantity demanded is the same at all prices.

(1 mark)

[<Answer>](#)

7. When the price elasticity of demand is equal to two, then the marginal revenue is

- (a) Negative
- (b) Twice the average revenue
- (c) Thrice the average revenue
- (d) Half of average revenue
- (e) Equal to average revenue.

(1 mark)

[<Answer>](#)

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

- (a) How the tax burden is shared 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) Tax reduces the profit of sellers by the equal amount to tax revenue
- (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 then the price rises by full amount of tax and the whole tax is borne by the buyer.

(1 mark)

[<Answer>](#)

9. 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. Indifference curve in the case of perfect substitutes is a straight line with positive slope.
- III. Two indifference curves intersect each other in the case of perfectly complementary goods.
- IV. A higher level of indifference curve connotes higher level of output.

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

(1 mark)

[<Answer>](#)

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

- (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)

[<Answer>](#)

11. One of the basic properties of indifference curves is that they are convex to origin, but in some exceptional cases these curves assume a concave shape. Which of the following causes the indifference curve to be concave to the origin?

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

(1 mark)

[<Answer>](#)

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

- (a) Want satisfying power of a good is called as utility
- (b) There exist 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)

[<Answer>](#)

13. For a quantity of a good to be called as the 'satiation quantity', the marginal utility of the good must be

- (a) Equal to the total utility
- (b) Greater than the total utility
- (c) Negative
- (d) Equal to zero
- (e) Maximum.

(1 mark)

[<Answer>](#)

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

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

(1 mark)

[<Answer>](#)

15. According to Malthus, a combination of diminishing returns and _____ will lead to starvation.

- (a) Rise in prices
- (b) Population growth
- (c) Unemployment
- (d) Decline in income
- (e) Cost of production.

(1 mark)

[<Answer>](#)

16. If two inputs are used in fixed proportion, then the isoquant will be

- (a) Convex to the origin
- (b) Concave to the origin
- (c) Straight line with negative slope
- (d) U-shaped
- (e) L-shaped.

(1 mark)

[<Answer>](#)

17. If the production function is homogeneous, then the expansion path will be

- (a) A straight line through origin
- (b) Vertical straight line
- (c) U-shaped
- (d) L-shaped
- (e) Horizontal straight line.

(1 mark)

[<Answer>](#)

18. If inputs X and Y are perfectly complementary, then which of the following statements is **true**?

- (a) Only $MRTS_{XY}$ will be zero
- (b) Only $MRTS_{YX}$ will be zero
- (c) Only $MRTS_{YX}$ will be one
- (d) Both $MRTS_{XY}$ and $MRTS_{YX}$ will be zero
- (e) Both $MRTS_{XY}$ and $MRTS_{YX}$ will be one.

(1 mark)

[<Answer>](#)

19. The total product reaches maximum, when

- (a) Marginal Product = Average Product
- (b) Average Product = Zero
- (c) Marginal Product = Zero
- (d) Marginal Cost = Average Cost
- (e) Marginal Revenue = Marginal Cost.

(1 mark)

[<Answer>](#)

20. The shape of marginal product curve is

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

(1 mark)

[<Answer>](#)

21. Expansion path is the locus of various points where the firm's expenditure

- (a) Increases without any change in the price of inputs
- (b) Increases with any change in the price of inputs
- (c) Increases with change in the price of outputs
- (d) Decreases without any change in the price of inputs
- (e) Decreases with change in the price of inputs.

(1 mark)

[<Answer>](#)

22. Consider the following total cost function.

$$TC = 1200 + 150Q - 25Q^2 + 30Q^3$$

Which of the following statements is/are **false**?

12/11

- I. Fixed cost is Rs.1200.
- II. Average variable cost function is $Q + 150 - 25Q + 30Q^2$.
- III. Marginal cost function is $1200 + 150 - 25Q + 90Q^2$.
- IV. Variable cost function is $150Q - 25Q^2 + 30Q^3$.
- V. Average fixed cost is
- (a) Only (I) above
- (b) Only (II) above
- (c) Both (I) and (II) above
- (d) Both (III) and (IV) above
- (e) (II), (III) and (V) above.

(1 mark)

[<Answer>](#)

23. The shape of fixed cost curve is

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

(1 mark)

[<Answer>](#)

24. Which of the following statements is **not true** regarding opportunity cost?

- (a) It is the value of the next best use for an economic good
- (b) It is the value of a sacrificed alternative
- (c) It is useful in decision-making
- (d) It does not take into consideration, the cost of time
- (e) It is useful for valuing non-marketed goods.

(1 mark)

[<Answer>](#)

25. 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) Marginal cost will be negative.

(1 mark)

[<Answer>](#)

26. In absence of fixed cost, if the variable cost increases at a constant rate then which of the following is/are **not true**?

- I. The total cost increases constantly.
- II. The average total cost is equal to average variable cost.
- III. The marginal cost will be always greater than average variable 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>](#)

27. 'Stochastic economies' of scale are otherwise known as

- (a) Labor economies
- (b) Technical economies
- (c) Inventory economies
- (d) Selling economies
- (e) Managerial economies.

(1 mark)

[<Answer>](#)

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

- (a) In the long run, there is no variable cost
- (b) Fixed costs are dependent on the firm's level of output
- (c) The sum of average total cost and average variable cost indicates the amount of average fixed cost of a firm
- (d) Marginal cost is equal to total cost divided by number of units of output produced
- (e) When the output is zero, the total cost of the firm will be just equal to its fixed costs.

(1 mark)

[<Answer>](#)

29. 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>](#)

30. In perfect competition, if the industry is a constant cost industry, then the long run supply curve will be

- (a) A horizontal straight line
- (b) A vertical straight line
- (c) U shaped
- (d) Upward rising
- (e) Downward sloping.

(1 mark)

[<Answer>](#)

31. 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.

(1 mark)

[<Answer>](#)

32. Which of the following is **not true** about taxation in perfect competition?

- (a) The imposition of lump sum tax will shift both the AFC and the ATC curves
- (b) The marginal cost curve is not affected by imposition of lump sum tax
- (c) The effect of profit tax is same as that of a lump sum tax
- (d) Imposition of specific tax will affect the MC curve of the firm
- (e) If the market supply curve is more elastic, then the burden of specific tax will be more on seller than on buyer.

(1 mark)

[<Answer>](#)

33. The demand for product decreases, as a result, the price of product decreases below the minimum possible average cost of producing it. In such a case what will happen in the long run, if the industry in question is a perfectly competitive constant-cost industry?

- (a) The price of product will decrease
- (b) The supply of product will increase
- (c) Some of the firms in the industry are likely to go out of business
- (d) There will be no effect on the supply of product
- (e) The demand of product will increase.

(1 mark)

[<Answer>](#)

34. Which of the following are the sources of imperfection of markets?

- I. Cost structure of the industry.
- II. Barriers to entry.
- III. Legal restrictions.
- IV. Production Differentiation.
- (a) Both (I) and (II) above
- (b) Both (I) and (III) above
- (c) (I), (II) and (III) above
- (d) (I), (II) and (IV) above
- (e) All (I), (II), (III) and (IV) above.

(1 mark)

[<Answer>](#)

35. In which of the following market structures the marginal revenue curve is **not** the same as price line of the firm?

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

(e) All (I), (II), (III) and (IV) above.

(1 mark)

[<Answer>](#)

36. 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>](#)

37. There are 'n' number of sellers who sell product X to one Mr. Amar because, Mr. Amar is the only buyer of that product. This type of market is known as

- (a) Monopoly
- (b) Bilateral Monopoly
- (c) Duopoly
- (d) Monopsony
- (e) Oligopoly.

(1 mark)

[<Answer>](#)

38. Which of the following are decided by the central agency in a Cartel?

- I. Quantity to be produced.
- II. Price of the product.
- III. Allocation of production among the members.
- IV. Distribution of profits among the members.

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

(1 mark)

[<Answer>](#)

39. The highly elastic demand curve of the firm in a monopolistically competitive market reveals that the products produced by the firm are

- (a) Homogeneous of degree one
- (b) Differentiated and close substitutes of each other
- (c) Differentiated, but not close substitutes of each other
- (d) Differentiated and perfect complements
- (e) Heterogeneous.

(1 mark)

[<Answer>](#)

40. Which of the following is **not true** about the Marginal Productivity Theory of Distribution?

- (a) It assumes that there may be as many factors of production as we like
- (b) According to the theory, the total product exhausts when each factor is paid according to its marginal productivity
- (c) This theory is considered as a 'just' theory
- (d) According to the theory, each input is paid according to its marginal productivity
- (e) According to the theory, the firms adjust the production and factor prices based on demand and supply for goods.

(1 mark)

[<Answer>](#)

41. Cafy Inc. produces and markets a popular coffee in south India. The demand and supply functions of the coffee are as follows:

$$Q_D = 200 - 3P$$

$$Q_S = 80 + 15P$$

If excise tax of Rs.4 is imposed on coffee, the proportion of tax that will be borne by the consumers is

- (a) 3.33%
- (b) 25.00%
- (c) 83.25%
- (d) 95.00%
- (e) 100.00%.

(2 marks)

[<Answer>](#)

42. A pen manufacturer manufactures two types of pens; fountain pens and ball pens, for catering to the needs of school students. The past experience of the firm indicates the following relationships.

Price of fountain pen (Rs.)	Price of ball pen (Rs.)	Quantity demanded of fountain pen (Units)
17.5	22.5	5,500
17.5	25.0	5,800

The cross elasticity of demand between fountain pen and ball pen is

- (a) 0.01
- (b) 0.49
- (c) 1.25
- (d) 1.50
- (e) 2.04.

(2 marks)

[<Answer>](#)

43. If the demand function for a good is $P = 80 - 2Q$, over what range of prices the demand is inelastic?

- (a) Rs.10 to Rs.40
- (b) Zero to Rs.40
- (c) Above Rs.40
- (d) Above Rs.80
- (e) Rs.20 to Rs.40.

(2 marks)

[<Answer>](#)

44. The demand function for a commodity is estimated as follows:

$$Q_d = 4,50,000 - 35P$$

The arc price elasticity of demand between the prices of Rs. 3,000 and Rs. 5,000 is

- (a) - 0.023
- (b) - 0.001
- (c) - 0.205
- (d) - 0.450
- (e) - 1.500.

(2 marks)

[<Answer>](#)

45. A survey by a market research firm estimated the supply schedule for toys as follows:

Price (Rs)	Quantity supplied (units)
100	25
200	50
300	75

The estimated supply function for toys is

- (a) $Q_s = 0.25P$
- (b) $Q_s = 100 + 25P$
- (c) $Q_s = 200 + 50P$
- (d) $Q_s = 50 + 0.5P$
- (e) $Q_s = 0.5 + 100P$.

(1 mark)

[<Answer>](#)

46. Where a given change in the price causes an equally proportionate change in the quantity demanded, the value of price elasticity of demand is

- (a) 0.25
- (b) 0.50
- (c) 0.75
- (d) 1.00
- (e) Infinity.

(1 mark)

[<Answer>](#)

47. Quantity demanded of a product decreases from 4,000 units to 3,500 units when the price of the product increases from Rs.40 to Rs.45. If income effect is estimated to be 300, substitution effect of the price change is

- (a) 100
- (b) 200
- (c) 300
- (d) 500
- (e) 800.

(1 mark)

[<Answer>](#)

48. If the prices of two goods namely, lemon tea (taken on X-axis) and coffee (taken on Y-axis) are Rs.4 and Rs.6 respectively, the slope of the budget line would be
- 0.40
 - 0.60
 - 0.67
 - 1.00
 - 1.50.
- (1 mark) [<Answer>](#)
49. Assume that the consumer is in equilibrium consuming commodities X and Y. If marginal utility of commodity X is 280 utils, price of the commodity X is Rs.20, and the price of commodity Y is Rs.10, the marginal utility of Y is
- 28.00
 - 93.33
 - 140.00
 - 280.00
 - 310.00.
- (1 mark) [<Answer>](#)
50. Current demand for apples in a city is 1000 boxes per week. In the city, price elasticity of demand for apples is -1.25 and income elasticity of demand is 2.00 . For the next period, if per capita income is expected to increase by 7% and price of apples is expected to increase by 10%, demand for apples is expected to be
- 875 boxes per week
 - 1,000 boxes per week
 - 1,015 boxes per week
 - 1,140 boxes per week
 - 1,250 boxes per week.
- (2 marks) [<Answer>](#)
51. The utility function of a consumer is, $U = 12X^{1.5}$. If the price of the good is Rs.108 per unit, the consumer would consume
- 9 units
 - 18 units
 - 36 units
 - 108 units
 - 144 units.
- (2 marks) [<Answer>](#)
52. Hifi Inc. produces innovative interior decorating products that it sells to film studios, corporate offices etc. The marginal product function of Hifi Inc. is
- $$MP_L = 0.5LK^{0.5}$$
- where, L = units of labor and K = units of capital
- Hifi Inc. has employed 36 units of capital. If the market wage rate is Rs.120, interest is Rs.20 and price of the good is Rs.2, the number of units of labor to be employed by Hifi Inc. is
- 10 units
 - 20 units
 - 30 units
 - 40 units
 - 120 units.
- (2 marks) [<Answer>](#)
53. Eaxi Inc. produces a unique calculator which can allow the user to perform multiple functions at the same time. For Eaxi Inc. production function, budget constraint and expansion path are given as follows:
- Production function : $Q = 50K^{0.4}L^{0.4}$
- Budget constraint : $1,100 = 40L + 50K$
- Expansion path : $L = 1.50K$
- The maximum possible output for Eaxi Inc. is
- 50 units
 - 100 units
 - 150 units
 - 247 units
 - 371 units.
- (2 marks)

[<Answer>](#)

54. Production function for a firm is $Q = 200L - 0.2L^2$. If 5 units of labor are used, average productivity of labor is

(a) 100 units
 (b) 190 units
 (c) 198 units
 (d) 199 units
 (e) 1,000 units.

(1 mark)

[<Answer>](#)

55. Which of the following production functions exhibit constant returns to scale?

I. $Q = K^{1/2} + L^{1/2}$.
 II. $Q = 3K + 4L$.
 III. $Q = 4K^{1/2} L^{1/2}$.
 IV. $Q = K^{1/2} L^{2/3}$.

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

(2 marks)

[<Answer>](#)

56. If the production function is $Q = 10K^{0.3} L^{0.3}$, what is the marginal rate of technical substitution of labor for capital?

(a) $\frac{L}{K}$
 (b) $\frac{K}{L}$
 (c) 0.3
 (d) 0.3
 (e) $K - L$.

(2 marks)

[<Answer>](#)

57. For a firm, the average cost function is estimated as

$$AC = \frac{200}{Q} + 30 + 6Q$$

What is total variable cost for the firm at an output of 12 units?

(a) Rs. 102
 (b) Rs. 864
 (c) Rs. 1,224
 (d) Rs. 1,424
 (e) Rs. 1,624.

(2 marks)

[<Answer>](#)

58. A firm's average variable cost function is

$$AVC = 50 - 30Q + 0.25Q^2.$$

If the fixed cost is Rs.500, the output at which the marginal cost will be minimum is

(a) 10 units
 (b) 15 units
 (c) 20 units
 (d) 30 units
 (e) 40 units.

(2 marks)

[<Answer>](#)

59. A firm operating under perfect competition has the following cost functions:

$$TC = 500 + 75Q - 10Q^2 + 0.5Q^3.$$

The price below which the firm shut down its operations in the short-run is

(a) Rs.10
 (b) Rs.25
 (c) Rs.40
 (d) Rs.50
 (e) Rs.75.

(2 marks)

[<Answer>](#)

60. The cost schedule of a firm is given below:

Quantity (units)	Total Fixed Cost (Rs.)	Total Variable Cost (Rs.)
------------------	------------------------	---------------------------

1	200	60
2	200	160
3	200	360
4	200	660
5	200	1, 060

The average cost of producing 5th units is

- (a) Rs.140
- (b) Rs.150
- (c) Rs.200
- (d) Rs.212
- (e) Rs.252.

(1 mark)

[<Answer>](#)

61. If average cost function for a firm is $AC = 36 - 0.80Q + 0.020Q^2$, the minimum possible average cost is

- (a) Rs.16
- (b) Rs.20
- (c) Rs.28
- (d) Rs.32
- (e) Rs.64.

(2 marks)

[<Answer>](#)

62. Fancy Inc. is a manufacturer of water containers that sells in India.

The average cost function of Fancy Inc. is

$$AC = 450 +$$

If the price for one unit of output is Rs.500, the units of output Fancy Inc. must sell to break-even is

- (a) 95 units
- (b) 100 units
- (c) 190 units
- (d) 200 units
- (e) 250 units.

(2 marks)

[<Answer>](#)

63. In a perfectly competitive market, the equilibrium price is equal to Rs.100. A typical firm in this industry faces a total cost function as $TC = 1,500 + 20Q + 10Q^2$, the profit maximizing output of a firm is

- (a) 4 units
- (b) 10 units
- (c) 15 units
- (d) 20 units
- (e) 25 units.

(2 marks)

[<Answer>](#)

64. There are 100 firms, with identical cost functions, in a perfectly competitive industry. The demand function for the industry is estimated to be

$$Q_d = 2,500 - 140P$$

If the cost function of a firm is $TC = 400 - 100Q + 5Q^2$, equilibrium price of the product is

- (a) Rs. 5
- (b) Rs.10
- (c) Rs.15
- (d) Rs.20
- (e) Rs.25.

(2 marks)

[<Answer>](#)

65. The total cost function and demand function of a good are estimated to be

$TC = 200 - 5Q + 4Q^2$ and $Q = 200 - P$ respectively. If the current output is 8 units, the average profit is

- (a) Rs.100
- (b) Rs.125
- (c) Rs.140
- (d) Rs.200
- (e) Rs.250.

(2 marks)

[<Answer>](#)

66. There are two firms, ABC Ltd. and XYZ Ltd. in a market. The reaction functions of ABC Ltd. and XYZ Ltd. are as follows:

$$Q_A = 50 - 0.5Q_B$$

$$Q_B = 60 - Q_A$$

Where, Q_A is quantity produced by ABC Ltd. and Q_B is quantity produced by XYZ Ltd. If the market is transformed into a perfectly competitive market, the output for the industry would be

- (a) 40 units
- (b) 60 units
- (c) 70 units
- (d) 90 units
- (e) 100 units.

(2 marks)

[<Answer>](#)

67. In an oligopoly industry, market shares of four firms are 40%, 30%, 20% and 10% respectively. Four-firm concentration ratio for the industry is

- (a) 25
- (b) 31
- (c) 50
- (d) 71
- (e) 100.

(1 mark)

[<Answer>](#)

68. Jenit Pharma Ltd. (JPL) has enjoyed monopoly derived from patents covering a wide range of biotech products. The demand curve faced by JPL is estimated as $P = 250 - Q$. The cost function of JPL is given as $C = 100 + 20Q$.

The maximum possible profit earned by JPL is

- (a) Rs. 2,200
- (b) Rs.13,125
- (c) Rs.15,525
- (d) Rs.17,625
- (e) Rs.17,725.

(2 marks)

[<Answer>](#)

69. Herfindahl's index for a monopoly industry will be

- (a) 1
- (b) 10
- (c) 100
- (d) 10,000
- (e) 1,00,000.

(1 mark)

[<Answer>](#)

70. The demand function of a firm is estimated as follows:

$$Q = 100 - 5P$$

If the marginal revenue is Rs.4, what is the price elasticity of demand for the good?

- (a) 0.67
- (b) 1.00
- (c) 1.50
- (d) 2.00
- (e) 2.50.

(2 marks)

[<Answer>](#)

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

$$\text{Cost function: } C = 200 + 10Q$$

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>](#)

72. 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
 (e) Rs.4,250.00.

(2 marks)

[<Answer>](#)

73. The degree of monopoly power given by the Lerner's Index of monopoly power is

- (a) e^{-1}
 (b) e^{1+e}
 (c) $\frac{1}{e}$
 (d) $\frac{1}{e-1}$
 (e) $e - 1$.

(1 mark)

[<Answer>](#)

74. Alpha Multimedia, a multimedia firm enters a monopolistically competitive market. The demand and cost function faced by Alpha Multimedia are given as

$$P = 10,000 - 20Q$$

$$TC = 3,00,000 + 2,197Q - 20Q^2 + Q^3$$

The short run equilibrium output of the firm is

- (a) 21 units
 (b) 51 units
 (c) 61 units
 (d) 71 units
 (e) 81 units.

(2 marks)

[<Answer>](#)

75. Arista, a cable TV service provider, finds that it has to incur advertising outlays in a monopolistic market. The total revenue function for Arista is given as follows:

$$TR = 500 + 20R - R^2, R \text{ is the unit of advertising.}$$

If the cost of each additional unit of advertising is Rs.5, the optimal budget for advertising is

- (a) Rs. 37.50
 (b) Rs. 50.00
 (c) Rs. 65.00
 (d) Rs. 75.00
 (e) Rs.100.00.

(2 marks)

END OF QUESTION PAPER

Suggested Answers

Economics - I (MSF1A3): January 2008

Answer

Reason

1. B The problem of choice arises because limited resources have unlimited uses

[<TOP](#)
[≥](#)

2. E All the given statements are true viz.

[<TOP](#)
[≥](#)

- In a command economy the decisions pertaining to production and distribution are determined by using a hierarchical organization structure in which people carry out the instructions given to them.
- Government enterprises and government ownership of

		resources are the rule rather than the exception in a command economy.	
		In a command economy, authoritarian methods are used to determine resource use and prices.	
3.	C	The following factors will cause a decrease in the demand	< TOP
		- A decrease in price of substitute. - An increase in the price of complement. - Expectations of future decrease in the price of good.	≥
4.	E	If the price of a product remains constant at a particular point then the demand curve will assume shape of a horizontal straight line parallel to x-axis.	< TOP
			≥
5.	E	A good whose income elasticity is more than one is considered as luxury good. Often it is observed that income elasticity always greater than one in case of luxury.	< TOP
			≥
6.	D	There exist a difference between slope and elasticity.	< TOP
			≥
7.	D	When price elasticity of demand is equal to two MR is half of AR.	< 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.	A	Indifference curve shows different combinations of goods that give same level of satisfaction.	< TOP
		I. It is appropriate because the slope of the indifference curve represents the marginal rate of substitution.	≥
		II. It is not appropriate in this instance because in case of substitutes the indifference curve is a negatively sloped straight line.	
		III. It is not appropriate in this instance because indifference curves will never intercept each other.	
		IV. It is not appropriate in this instance because indifference curves represent higher level of satisfaction and not the higher level of output. Hence, the correct answer is (a).	
10.	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
			≥
11.	A	If the indifference curve were concave to the origin, it would imply that marginal rate of substitution of X and Y increased as more and more of X was substituted for Y. In this case, the marginal rate of substitution increases.	< TOP
			≥
12.	E	(a) is true. Utility is defined as the extent of satisfaction obtained from the consumption of goods and services.	< TOP
		(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.

- | | | | |
|-----|---|--|---|
| 13. | D | When marginal utility is zero the total utility will be maximum and the slope of total utility curve will be zero at this point. Beyond this point the total utility starts declining. Hence at the quantity of good where marginal utility is zero the quantity is called as satiation quantity. | < TOP
≥ |
| 14. | E | The reason why a consumer pay zero or a very low amount of money for certain items with high benefits is explained by the value paradox. | < TOP
≥ |
| 15. | B | According to Malthus starvation occurs when diminishing returns are accompanied with population growth. | < TOP
≥ |
| 16. | E | When two inputs are used in fixed proportion increase in one input keeping the other input constant will not increase the output. Hence the Isoquant is L-shaped for two inputs, which are used in a fixed proportion | < TOP
≥ |
| 17. | A | If the production function is homogeneous then the expansion path will be a straight line through origin and its slope will be decided by the ratio of the factor prices. | < TOP
≥ |
| 18. | D | The perfect complementary factors are those that are jointly used for production in a fixed proportion. An increase in one factor with out the required proportional increase in the other factor will yield no additional output whatsoever. In this case, $MRTS_{XY}$ and $MRTS_{YX}$ both will be zero. | < TOP
≥ |
| 19. | C | Total product reaches maximum position when marginal product is zero. When $AP = MP$, AP will be at maximum. When $AC = MC$, AC will be at minimum. Hence the correct answer is (c). | < TOP
≥ |
| 20. | 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
≥ |
| 21. | A | Expansion path is the locus of different points where the firm's expenditure increases without any change in the price of inputs. | < TOP
≥ |
| 22. | E | The average variable cost is equal to $150 - 25Q + 30Q^2$
The average fixed cost is equal to $1200/Q$. | < TOP
≥ |
| 23. | D | As the fixed cost is fixed at all points of the shape of the curve is horizontal straight line. | < TOP
≥ |
| 24. | D | Time value is the implicit cost in the opportunity cost. So the cost of time is considered | < TOP
≥ |
| 25. | C | Average fixed cost is calculated as total fixed cost divided by the number of output produced. It always declines as output increases. Even if the firm produces zero output, the average fixed cost will be positive because total fixed cost is constant.

(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.
(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. | < TOP
≥ |
| 26. | C | In absence of fixed cost, if the variable cost increases at a constant rate then the marginal cost will be equal to average variable cost. | < TOP
≥ |
| 27. | C | Inventory economies are also called as stochastic economies because the role of the inventories is to meet the random changes in the input and output sides of the operation of the firm. | < TOP
≥ |
| 28. | E | a. In long run, all costs are variable, which means there will be no | < TOP |

		fixed costs.	≥
	b.	Fixed costs remain constant, i.e. are independent to the firm's level of output.	
	c.	The difference between average total cost and average variable costs signifies the amount of average fixed cost of a firm.	
	d.	Marginal cost is the increment in total cost for producing one more unit of output	
	e.	When the firm is not producing anything, its variable cost will be zero. Hence, the total cost of the firm will be just equal to its fixed costs.	
29.	E	A price taking firms is a firm which is operating in a perfect competitive market. Option (e) is not true because the in perfect competition the $MR = AR$	< TOP ≥
30.	A	In perfect competition if the industry is a constant cost industry then the long run supply curve will be a horizontal straight line.	< TOP ≥
31.	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 ≥
32.	E	If the market supply curve is more elastic then the burden of specific tax will be less on seller and more on buyer.	< TOP ≥
33.	C	The fall in the price of product will cause some companies to go out of business until the price of product rises to the minimum possible average cost of producing it.	< TOP ≥
34.	E	The sources of imperfection of markets • Cost structure of the industry. • Barriers to entry. • Legal restrictions. • Production Differentiation.	< TOP ≥
35.	D	Except in perfect competition, in all the given market structure the marginal revenue curve of the firm will be different from its demand curve (AR curve).	< TOP ≥
36.	D	The monopolist must decrease the price of every unit in order to sell additional units, that is why the marginal revenue curve of the monopolists slopes downwards from left to right.	< TOP ≥
37.	D	Monoposony is a market with one buyer of a good and many competitive sellers.	< TOP ≥
38.	E	The firms after forming a cartel appoints a central agency. The central agency is delegated the authority to decide: - Total quantity of the product to be produced. - Price of the product. - Allocation of production among the members of the cartel. - Distribution of the maximum joint profits among the members. Hence option (e) is the correct answer.	< TOP ≥
39.	B	In a monopolistically competitive market, the products are differentiated, but they are close substitutes of each other.	< TOP ≥
40.	E	The Marginal Productivity Theory of Distribution assumes that perfect competition prevails in all the goods and factor markets. This means that the firms takes the goods and the factor prices as given.	< TOP ≥
41.	C	When tax is imposed, $Q_s = 80 + 15(P-4) = 80 + 15P - 60$	< TOP ≥

$$\text{Or, } Q_s = 20 + 15P$$

$$\text{At equilibrium, } 20 + 15P = 200 - 3P$$

$$\text{Or, } 18P = 180$$

$$P = 10$$

$$\text{Earlier equilibrium price, } 200 - 3P = 80 + 15P$$

$$\text{Or, } 120 = 18P$$

$$\text{Or, } P = 120/18 = 6.67$$

$$\text{Increase in price} = 10 - 6.67 = \text{Rs. } 3.33$$

$$\text{Thus, the burden borne by the consumer is } 3.33/4 = 0.8325 = 83.25\%.$$

42. B The cross price elasticity of demand for Fountain pen is given by [< TOP](#)
 $\partial Q_x / \partial P_y \times P_y / Q_x = 300 / 2.5 \times 22.5 / 5500 = 0.49.$ [≥](#)

43. B For all straight line demand is elastic in the upper left portion than in the [< TOP](#)
lower right portion. This is consequence of the arithmetic properties of the [≥](#)
elasticity measure. The demand becomes inelastic once the elasticity is
unitary elastic. The demand is unit elastic when $MR = 0$.

$$TR = 80Q - 2Q^2$$

$$MR = 80 - 4Q$$

$$\text{When } MR = 0, 80 - 4Q = 0$$

$$\text{Or, } Q = 20$$

$$\text{When } Q = 20, P = 80 - 2(20) = 40.$$

Thus, the range of prices where the demand is inelastic is zero to Rs.40.

Note: price cannot be negative.

44. D The demand function : $Q_d = 4,50,000 - 35P$ [< TOP](#)
When price is Rs. 3000 per unit [≥](#)

$$Q_1 = 4,50,000 - 35(3000)$$

$$= 4,50,000 - 1,05,000$$

$$= 4,45,000$$

When price is Rs. 5000 per unit

$$Q_2 = 4,50,000 - 35(5000)$$

$$= 4,50,000 - 1,75,000$$

$$= 2,75,000$$

Arc price elasticity of demand is $\frac{Q_2 - Q_1}{(Q_2 + Q_1)/2} \times \frac{P_1 + P_2}{P_2 - P_1}$

$$E_p = \frac{2,75,000 - 4,45,000}{(2,75,000 + 4,45,000)/2} \times \frac{3000 + 5000}{5000 - 3000} = -0.45$$

45. A The supply function can be represented by [< TOP](#)
 $Q_s = a + bP$: differentiating w.r.t P we get [≥](#)

$$\partial Q / \partial P = b$$

When price changes from 100 – 200, $\partial P = 100$ and ∂Q is 25 (from the question)

$$\text{So } b = 25/100 = 0.25$$

When P is 100, Q is 25

$$\text{So, we get } 25 = a + (0.25 \times 100)$$

$$\text{Or } a = 0$$

Therefore the supply function is $Q_s = 0.25P$.

46. D When the demand curve is a rectangular hyperbola, the numerical value [< TOP](#)
of elasticity of demand equals unity. [≥](#)

47. B Price effect = Income effect + Substitution effect [< TOP](#)
 $500 = 300 + \text{Substitution effect}$ [≥](#)
Thus, substitution effect = 200.

48. C Slope of the budget line is equal to the relative price of goods. Therefore, the slope of the budget line can be calculated as follows: slope = Price of lemon tea/Price of coffee = $4/6 = 0.67$. [< TOP](#)
≥
49. C At equilibrium $MU_x = MU_y$
 $20 = 100$
 $\therefore MU_y = 20 \times 10 = 140$ [< TOP](#)
≥
50. C $Q_d = 1000$ [< TOP](#)
 $e_p = -1.25$ ≥
 $e_y = 2.00$
 $e_d =$
 $-1.25 =$
 $\% \text{ change in } Q = -12.5\%$
 $e_y =$
 $\therefore \% \text{ change in } Q = 14.00\%$
 $\therefore \text{Net effect is} = 14.00 - 12.5 = 1.5\%$
 $1000 \times 1.5\% = 15$
 $\therefore \text{Demand for apple is expected to be} = 1000 + 15 = 1015 \text{ boxes per week.}$
51. C The consumer would consume the good up to a point where $MU = P$. [< TOP](#)
≥
 $TU = 12X^{1.5}$
 $MU = 18X^{0.5} = 108$
 $X^{0.5} = 6$
Or, $X = 36$ units.
52. B $MP_L = 0.5L (36)^{0.5} = 3L$ [< TOP](#)
≥
 $W = MP_L \times P$
 $120 = 3L \times 2$
Or, $L = 20$ units.
53. E Production function = $Q = 50 K^{0.4} L^{0.4}$ [< TOP](#)
≥
Budget constraint $1100 = 40L + 50K$
Expansion Path $L = 1.50K$
Putting the values of $L = 1.50K$ in the budget constraint, we can get
 $1100 = 40 (1.50K) + 50K$
or, $60K + 50K = 1100$
or, $110K = 1100$
or, $K = 10$.
When $K = 10$, $L = 15$
 $\therefore$ The maximum possible output for the firm is
 $Q = 50 (10)^{0.4} \times (15)^{0.4} = 50 \times 7.4205 = 371 \text{ units.}$
54. D The production function for a firm $Q = 200L - 0.2L^2$ [< TOP](#)
≥
 $APL = 200 - 0.2L$
When $L = 5$, $AP_L = 200 - 0.2(5) = 200 - 1 = 199 \text{ units.}$
55. B I. $Q = K^{1/2} + L^{1/2}$ [< TOP](#)
≥
When $K = 1$ and $L = 1$, $Q = (1)^{1/2} + (1)^{1/2} = 2$
When $K = 2$ and $L = 2$, $Q = (2)^{1/2} + (2)^{1/2} = 2.82$

When inputs are doubled, output are less than doubled. It is a case for decreasing returns to scale.

II. $Q = 3K + 4L$

When $K = 1$ and $L = 1$, $Q = 3 + 4 = 7$

When $K = 2$ and $L = 2$, $Q = 6 + 8 = 14$

When inputs are doubled, output are also doubled.

∴ It is a case of constant return to scale.

III. $Q = 4K^{1/2} L^{1/2}$

When $K = 1$ and $L = 1$, $Q = 4(1)^{1/2} (1)^{1/2} = 4$

When $K = 2$ and $L = 2$, $Q = 4(2)^{1/2} (2)^{1/2} = 8$

∴ It is a constant return to scale.

IV. $Q = K^{1/2} L^{2/3}$

When $K = 1$ and $L = 1$, $Q = (1)^{1/2} (1)^{2/3} = 1 \times 1 = 1$

When $K = 2$ and $L = 2$, $Q = (2)^{1/2} (2)^{2/3} = 1.41 \times 1.58 = 2.23$

∴ It is an increasing return to scale.

56. A The MRTS is equal to the ratio of the marginal productivities of the two products – MP_L/MP_K

$$\frac{3K^{0.3}L^{-0.7}}{3K^{-0.7}L^{0.3}}$$

$$\frac{K^{0.3}L^{-0.7}}{K^{-0.7}L^{0.3}}$$

$$K/L$$

[< TOP](#)
≥

57. D $AC = \frac{200}{Q} + 30 + 6Q$

$$TC = 200 + 30Q + 6Q^2$$

$$TVC = 30Q + 6Q^2$$

$$\text{At output 12, } TVC = 30(12) + 6(12)^2 = 360 + 864 = \text{Rs. 1224.}$$

[< TOP](#)
≥

58. E $MC = \partial TC / \partial Q$

$$\text{Where, } TC = TFC + TVC$$

$$TVC = AVC \times Q = (50 - 30Q + 0.25Q^2) Q = 50Q - 30Q^2 + 0.25Q^3$$

$$\text{Thus, } TC = 500 + 50Q - 30Q^2 + 0.25Q^3$$

$$\text{Then, } MC = \partial TC / \partial Q = 50 - 60Q + 0.75Q^2$$

$$MC \text{ will be minimum when } \partial MC / \partial Q = 0$$

$$\partial MC / \partial Q = -60 + 1.5Q = 0$$

$$\text{Or, } 1.5Q = 60$$

$$\text{Or, } Q = 60/1.5$$

$$Q = 40 \text{ units.}$$

[< TOP](#)
≥

59. B The minimum price below which the firm is shut down its operation is the minimum average variable cost.

The average variable cost will be equal to price or marginal revenue at the minimum point on average variable cost curve.

$$\therefore MC = AVC.$$

$$75 - 20Q + 1.5Q^2 = 75 - 10Q + 0.5Q^2$$

$$1.5Q^2 - 0.5Q^2 - 20Q + 10Q = 0.$$

$$Q^2 - 10Q = 0$$

$$Q(Q - 10) = 0$$

$$Q = 10.$$

$$\text{At } Q = 10, AVC = 75 - 10(10) + 0.5(10)^2$$

$$= 75 - 100 + 50 = \text{Rs. 25.}$$

[< TOP](#)
≥

60. E $TC = TFC + TVC = 200 + 1,060 = 1260$

[< TOP](#)

- Average Fixed Cost of Producing 5th units ≥
 $= 1260/5 = \text{Rs.}252$
61. D AC is minimum when $\frac{d}{dQ} AC = 0$ [< TOP](#)
 $= -0.80 + 0.040Q = 0$ ≥
 $0.040Q = 0.80$
 $Q = 20$
 At $Q = 20$, $AC = 36 - 0.60(20) + 0.020(20)^2 = 36 - 12 + 8 = \text{Rs.}32$
62. C $AC = 450 + 9,500/Q$. At the break-even point, average revenue or price (P) is equal to average cost, thus $P = 500 = 450 + 9,500/Q = AC$. [< TOP](#)
≥
 Or, $50Q = 9,500$
 Or, $Q = 9500/50 = 190$ units.
63. A Equilibrium price = Rs.100 [< TOP](#)
≥
 Being a perfectly competitive market, $MR = \text{price} = 100$
 $MC = 20 + 20Q$;
 Equating MC and MR, we get $100 = 20 + 20Q$ or $Q = 4$ units.
64. B For a perfectly competitive firm, the marginal cost curve above the AVC curve is the [< TOP](#)
≥
 Supply curve of the firm
 $-100 + 10Q = P$
 $10Q = P + 100$
 $Q = 0.1P + 10$
 Since there are 100 firms, $Q_s = 10P + 1000$
 Equilibrium price is determined where $Q_s = Q_d$
 $10P + 1000 = 2500 - 140P$
 $150P = 1500$
 $P = 10$
 $P = \text{Rs. } 10$
65. C Profit = $TR - TC$ [< TOP](#)
≥
 $TR = P \times Q$
 $P = 200 - Q$
 Hence, $TR = (200 - Q)Q = 200Q - Q^2$
 Hence, profit = $200Q - Q^2 - (200 - 5Q + 4Q^2)$
 Average profit function: $205 - 5Q^2 - 200/Q$
 Thus, if current output is 8 units, average profit will be $205 - 40 - 25 = \text{Rs.}140$
66. D Given, $Q_a = 50 - 0.5Q_B$ and $Q_B = 60 - Q_A$ [< TOP](#)
≥
 Thus, $Q_B = 60 - (50 - 0.5Q_B)$
 $Q_B = 60 - 50 + 0.5Q_B = 10$
 $Q_B = 20$
 When $Q_B = 20$, $Q_A = 50 - 0.5(20) = 40$
 Thus, $Q_n = 40 + 20 = 60$
 $Q_n = Q_p (n/n+1)$
 Where, Q_p = Total output in perfect competition
 n = Number of competitive firms in the market
 Thus, $60 = Q_p (2/3)$
 $Q_p = 60 \times 3/2 = 90$ units.

67. E The concentration ratio is the percentage of total industry sales made by the four largest firms of an industry. [< TOP](#)
 $\therefore$ Four-firm concentration ratio = $40 + 30 + 20 + 10 = 100\%$. [>](#)
68. E Demand function $P = 250 - Q$. [< TOP](#)
 $TR = PQ$ [>](#)
 $= 250Q - Q^2$
 $MR = 250 - 2Q$
 $= 250 - 2Q$
Cost function $TC = 100 + 20Q$
 $MC = 20$
To maximize profit $MR = MC$
 $250 - 2Q = 20$
Or, $230 = 2Q$
Or, $Q = 115$
 $P = 250 - 115 = 135$
Profit of the non-discriminating monopolist = $TR - TC$
 $= (250Q - Q^2) - (100 + 20Q)$
 $= 28750 - 13225 - 100 + 2300$
 $= \text{Rs. } 17,725$
69. D H-index is sum of (market shares)² of all the firms in the industry. Since in monopoly there is only one firm, the market share is 100%. [< TOP](#)
 $\therefore$ H-index = $100^2 = 10,000$ [>](#)
70. C $Q = 100 - 5P$ [< TOP](#)
and $MR = 4$; Differentiating $\partial q / \partial p = -5$ [>](#)
And rearranging, we have $5P = 100 - 0.2Q$
or $P = 20 - 0.2Q$
 $MR = P$
 $TR = 20Q - 0.2Q^2$;
Given $MR = 4$, $20 - 0.4Q = 4$
or $Q = 40$
When $Q = 40$, we get $P = 20 - 0.2Q = 12$
Elasticity = $-5 (12/40) = -1.5$
71. C $MR_A = MC$; [< TOP](#)
 $TR_A = 80Q_A - Q_A^2$ [>](#)
 $MR_A = 80 - 2Q_A$
 $80 - 2Q_A = 10$
 $Q_A = 35$
 $TR_B = 50Q_B - 0.5Q_B^2$
 $MR_B = 50 - Q_B$
 $MR_B = MC$
 $50 - Q_B = 10$
 $Q_B = 40$
Total output, $Q = 35 + 40 = 75$ units.
72. D Profit is maximum when $MC = MR$. [< TOP](#)
[>](#)

Or when $50 - 20Q + 3Q^2 = 50 - 5Q$

$$3Q^2 = 15Q; Q = 5.$$

Total cost when $Q = 5$ is $2,000 + 50Q - 10Q^2 + Q^3 =$

Rs. 2,125

73. D The learners index of monopoly power, the tool used to measure the extent of monopoly power is given by
 $(P - MC) / P = (P - MR) / P = 1 - \frac{MR}{P}$
 $= 1 - \frac{1}{2} = 1 - 0.5 = 0.5$

[< TOP](#)
[≥](#)

74. B Given, $P = 10,000 - 20Q$
 $TC = 300,000 + 2197Q - 20Q^2 + Q^3$
 $TR = P \cdot Q = 10,000Q - 20Q^2$
 $MR = 10,000 - 40Q$
 $MC = 2,197 - 40Q + 3Q^2$
 $MR = MC$ gives
 $10,000 - 40Q = 2,197 - 40Q + 3Q^2$
or $7803 = 3Q^2$
 $Q^2 = 2601$ which gives $Q = \sqrt{2601} = 51$
Hence the correct answer is 51 units

[< TOP](#)
[≥](#)

75. A Marginal revenue from advertising is
 $20 - 2R$.
The MC of advertising is given as Rs 5
Equating both
 $20 - 2R = 5 \Rightarrow R = 7.5$
Optimal budget for advertising is $7.5 \times 5 = \text{Rs } 37.5$

[< TOP](#)
[≥](#)

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