Question Paper
Business Economics – I (MB1B3): October 2008

- **Answer all 70 questions.**
- **Marks are indicated against each question.**

Total Marks : 100

<Answer>

1. Which of the following are **not** the assumptions made in constructing a Production Possibility Curve (PPC)?

I. The economic resources available for use in the year are variable.
II. The economic resources can be used to produce two broad classes of goods.
III. Some inputs are better used in producing one of these classes of goods, rather than other.
IV. Technology changes during the year.

(a) Both (I) and (II) above
(b) Both (I) and (III) above
(c) Both (I) and (IV) above
(d) Both (II) and (III) above
(e) Both (III) and (IV) above. **(1 mark)**

<Answer>

2. According to general equilibrium analysis, who among the following is/are considered as decision making agent(s)?

I. Consumers.
II. Producers.
III. Resource owners.

(a) Only (I) above
(b) Only (II) above
(c) Only (III) above
(d) Both (II) and (III) above
(e) All (I), (II) and (III) above. **(1 mark)**

<Answer>

3. An educational institution is considering an increase in course fees of a particular course to enhance its revenue. If the institute expects that raising course fees would enhance revenue, then

(a) It is ignoring the law of demand
(b) It is assuming that the demand for the course is elastic
(c) It is assuming that the supply of the course is elastic
(d) It is assuming that the demand for the course is inelastic
(e) It is assuming that the supply of the course is inelastic. **(1 mark)**

<Answer>

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

(a) A change in demand, due to factors other than price is described as shift in demand curve
(b) Demand tends to be more inelastic for those products that account for a small proportion of consumer's total spending
(c) Demand is more elastic in the long run than in the short run
(d) Inferior goods have negative income elasticity
(e) The value of cross-price elasticity for two complementary products is positive. **(1 mark)**

<Answer>

5. When the value of elasticity of supply is less than one but greater than zero, it is known as

(a) Perfectly elastic supply
(b) Relatively elastic supply
(c) Unitary elastic supply
(d) Perfectly inelastic supply
(e) Relatively inelastic supply. **(1 mark)**

<Answer>

6. When a unit tax is imposed, this will cause

(a) The supply curve to shift rightward
(b) The supply curve to shift leftward
(c) The demand curve to shift rightward
(d) The demand curve to shift leftward
(e) No change in the positions of demand and supply curves. **(1 mark)**

<Answer>

7. In which of the following situation(s) is the entire tax borne by the consumer?

I. If the demand curve is perfectly inelastic, the price rises by the full amount of the tax and the supply remains unchanged.
II. If the supply curve is perfectly inelastic, there will be no increase in the price or decrease in supply.
III. If the demand curve is perfectly elastic, the price does not rise at all.

(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>

8. The supply and demand functions of a commodity are estimated as

$Q_d = 2{,}000 - 450P$
$Q_s = 800P - 3{,}000.$
At equilibrium, the elasticity of supply for the commodity is

(a) 2
(b) 4
(c) 6
(d) 8
(e) 16. **(2marks)**

<Answer>

9. The demand function for a product is estimated as $P = 40 - 4Q$. If the current market price is Rs.8, what is the price elasticity of demand?

(a) – 0.333
(b) – 0.250
(c) – 1.321
(d) 1.321
(e) 1.891. **(2marks)**

<Answer>

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

$Q_s = 500P - 500$
$Q_d = 1{,}150 - 50P.$
The equilibrium output for the product is
(a) 750 units
(b) 1,000 units
(c) 1,250 units
(d) 1,400 units
(e) 1,500 units. **(2marks)**

<Answer>

11. The demand function for a commodity is estimated to be $Q_d = 12{,}00{,}000 - 40P$. The theoretical highest price that can prevail in the market is

(a) Rs.90,000
(b) Rs.30,000
(c) Rs.10,000
(d) Rs.20,000
(e) Rs.40,000. **(2marks)**

<Answer>

12. The demand schedule of a perishable good is given below:

Price (Rs.)	Quantity demanded (Units)
8	40
10	60

What is the arc price elasticity of demand?
(a) 0.72
(b) 0.62
(c) 0.52
(d) 0.42
(e) 1.80. **(2marks)**

<Answer>

13. Demand and supply functions for a product are given as follows:

$Q_d = 10,000 - 4P$
$Q_S = 3,000 + 6P.$
If the government imposes a sales tax of Rs.200 per unit, the price of the product per unit increases by

(a) Rs.100
(b) Rs.110
(c) Rs.120
(d) Rs.130
(e) Rs.140. **(2marks)**

<Answer>

14. Which of the following is/are **true** about 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.
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) (I), (II) and (IV) above. **(1 mark)**

<Answer>

15. The income effect of decrease in price of a good is the extent to which

(a) The purchasing power of the consumer has decreased
(b) The incomes of the suppliers increases
(c) The real income of the consumer increases
(d) The consumers of substitute goods are better off
(e) The demand for the product decreases. **(1 mark)**

<Answer>

16. A consumer with a given income will obtain maximum utility when

(a) The marginal utility of each commodity is equal
(b) The ratio of marginal utility of each commodity is same to its price ratio
(c) The utility derived for the first unit of each commodity is equal
(d) The marginal utility of each commodity is in the same ratio to its cost of production
(e) The marginal utility of one commodity is higher than others. **(1 mark)**

<Answer>

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

(a) Indifference curve describes all the possible combinations of two goods which give equal satisfaction to the consumer
(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 increases
(d) Utility is a psychological concept and therefore cannot be precisely measured
(e) Consumer surplus of a good and its economic value are different. **(1 mark)**

<Answer>

18. The indifference curves are convex to the origin. This is due to

(a) Diminishing marginal rate of substitution
(b) Increasing marginal rate of substitution
(c) Constant marginal rate of substitution
(d) Increasing marginal rate of technical substitution
(e) Constant marginal rate of technical substitution. **(1 mark)**

<Answer>

19. 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

(a) 28 utils
(b) 93 utils
(c) 140 utils
(d) 280 utils
(e) 310 utils. **(2marks)**

20. 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

(a) 9 units
(b) 18 units
(c) 36 units
(d) 108 units
(e) 144 units. **(2marks)**

<Answer>

21. Mr. Rammohan consumes two goods, A and B. At equilibrium, marginal utility of A is 250 utils and the price of A is Rs. 50. If the marginal utility of good B at equilibrium is 350 utils, the price of B is

(a) Rs.45
(b) Rs.50
(c) Rs.55
(d) Rs.60
(e) Rs.70. **(2marks)**

<Answer>

22. The total utility function of Mr. Rama Rao is given as follows:

$U = 40XY$

where, X and Y represent the quantities of two goods consumed.The price of goods X and Y are Rs.2 and Rs.4 respectively. If Mr. Rama Rao attains equilibrium by consuming 40 units of commodity X, the number of units of good Y consumed by Mr. Rama Rao is

(a) 10 units
(b) 20 units
(c) 30 units
(d) 35 units
(e) 40 units. **(2marks)**

<Answer>

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

(a) Average product cannot be zero
(b) Average product will always be greater than marginal product
(c) Marginal product can be negative
(d) For the first unit of variable input, the marginal product is the same as total product
(e) Marginal product increases only when the total product is increasing at an increasing rate. **(1 mark)**

<Answer>

24. The shape of Isocost line is

(a) Convex to origin
(b) Concave to origin
(c) U-shaped
(d) Downward sloping straight line from left to right
(e) L-shaped. **(1 mark)**

<Answer>

25. 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>

26. 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>

27. 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 some 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>

28. 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

(a) 10 units
(b) 20 units
(c) 30 units
(d) 40 units
(e) 120 units. **(2marks)**

<Answer>

29. 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. **(2marks)**

<Answer>

30. 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. **(2marks)**

<Answer>

31. 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)

(b)

(c)
0.3

(d)
0.3
(e) K – L. **(2marks)**

<Answer>

32. Consider the following total cost function.

$TC = 1,200 + 150Q - 25Q^2 + 30Q^3$

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

I. Fixed cost is Rs.1,200.

II. Average variable cost function is $+ 150 - 25Q + 30Q^2$.
III. Marginal cost function is $1,200 + 150 - 25Q + 90Q^2$.
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>

33. 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>

34. 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>

35. Which of the following can be considered as long run cost function(s)?

I. $C = 20 + 3Q + 0.25Q^2$.
II. $C = 200Q + 0.5Q^2$.
III. $C = 100 + Q - 2Q^2$.
IV. $C = 10Q + 150Q^2$.

(a) Only (I) above
(b) Only (III) above
(c) Both (II) and (III) above
(d) Both (II) and (IV) above
(e) Both (I) and (III) above. **(1 mark)**

<Answer>

36. The total cost is a function of

(a) The price of input
(b) The number of different inputs used
(c) The output to be produced
(d) The demand of the product
(e) The nature of the product. **(1 mark)**

<Answer>

37. Which of the following statements is **true** with regard to cost curves in the short run?

(a) The marginal cost curve intersects the average variable cost curve at its lowest point and the average total cost curve at its highest point
(b) The marginal cost curve intersects the average variable cost curve at its highest point and the average total cost curve at its lowest point
(c) The marginal cost curve intersects both the average variable cost curve and the average total cost curve at their lowest points
(d) The marginal cost curve intersects both the average variable cost curve and the average total cost curve at their highest points
(e) The marginal cost curve never intersects the average variable cost curve and the average total cost curve.

(1 mark)

<Answer>

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

(a) The long run average cost is determined by economies of scales
(b) When increase in production of one product leads to decrease in cost of production of another product, it is termed as economies of scope
(c) Pecuniary economies of scale accrue to a firm when the firm gets discount due to large scale operation
(d) Economies of scales are classified into internal and external economies of scales
(e) Real economies of scale can be achieved through the increase in the quantity of inputs.

(1 mark)

<Answer>

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

AC = + 30 + 6Q

What is total variable cost for the firm at an output of 10 units?

(a) Rs. 102
(b) Rs. 864
(c) Rs. 900
(d) Rs.1,224
(e) Rs.1,400.

(2marks)

<Answer>

40. A firm's marginal cost function is estimated as follows:

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

The output at which the marginal cost will be minimum is

(a) 10 units
(b) 15 units
(c) 20 units
(d) 30 units
(e) 60 units.

(2marks)

<Answer>

41. 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.

(2marks)

<Answer>

42. 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 total cost of producing 5^{th} units is

(a) Rs.140
(b) Rs.150
(c) Rs.200
(d) Rs.212
(e) Rs.252. **(2marks)**

<Answer>

43. 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. **(2marks)**

<Answer>

44. The average cost function of a firm is given as follows:

AC = 450 +

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

(a) 95 units
(b) 100 units
(c) 190 units
(d) 200 units
(e) 250 units. **(2marks)**

<Answer>

45. The total cost function of a firm is given as $TC = 500 – 2Q + 3Q^2$. If the current output is 5 units, average cost is

(a) Rs.110
(b) Rs.111
(c) Rs.112
(d) Rs.113
(e) Rs.114. **(2marks)**

<Answer>

46. A producer produces 200 units of a commodity by spending Rs.1,50,000. He expects an increase in demand and produces 100 more units. If his total expenditure for producing 300 units is Rs.3,80,000, what is the marginal cost per unit?

(a) Rs.2,300
(b) Rs.3,800
(c) Rs.1,500
(d) Rs. 500
(e) Rs.2,800. **(2marks)**

<Answer>

47. 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>

48. The industry demand curve in perfect competition is

(a) A horizontal straight line
(b) A vertical straight line
(c) U-Shaped
(d) A downward sloping straight line
(e) An upward rising straight line. **(1 mark)**

<Answer>

49. 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>

50. 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>

51. In perfect competition, the shape of total revenue curve of a firm is

(a) Straight line starting from origin
(b) U-shaped
(c) L-shaped
(d) Rectangular hyperbola
(e) Horizontal straight line. **(1 mark)**

<Answer>

52. Refer to the following table:

(Rs. in thousands)

Output (units)	Marginal Revenue/Price	Average Total Cost
1	20	68.00
2	20	37.00
3	20	26.00
4	20	20.76
5	20	17.80
6	20	17.60
7	20	15.72
8	20	16.24
9	20	18.00
10	20	21.00

The above table shows the marginal approach of profit calculation in a perfectly competitive market. What is the total profit at 6^{th} unit of output?

(a) Rs.14.4 thousand
(b) Rs.13.2 thousand
(c) Rs.15.6 thousand
(d) Rs.16.4 thousand
(e) Rs.17.6 thousand. **(2marks)**

<Answer>

53. A firm operating under perfect competition has the long run average cost function given as:

$LAC = 150 – 1,250Q + 25Q^{2.}$

If the existing market price of the commodity produced by the firm is Rs.150, what is the total revenue of the firm at optimum level of output?

(a) Rs.3,050
(b) Rs.3,550
(c) Rs.3,750
(d) Rs.3,820
(e) Rs.3,980. **(2marks)**

<Answer>

54. There are 100 firms with identical cost functions operating in a perfectly competitive industry with total cost function estimated as:

$TC = 100 – 100Q + 5Q^2$.

The demand function for the industry is estimated to be:

$Q_d = 6,000 – 490P$.

What is equilibrium price of the product?

(a) Rs. 9.00
(b) Rs. 9.50
(c) Rs.10.00
(d) Rs.11.50
(e) Rs. 9.75. **(2marks)**

<Answer>

55. The Average Variable Cost (AVC) function of a firm operating in a perfectly competitive market is estimated as:

$AVC = 2,800 – 240Q + 8Q^2$.

What is the price below which the firm has to shut-down its operations in the short run?

(a) Rs.1,100
(b) Rs.1,000
(c) Rs.1,200
(d) Rs.1,300
(e) Rs. 900. **(2marks)**

<Answer>

56. The industry supply function of a perfectly competitive industry is estimated as

$Qs = 200 + 4P$.

An individual firm operating in that industry has total cost function given as follows:

$TC = 1,200 + 600Q – 50Q^2 + Q^3$.

The profit maximizing output for the firm is 150 units. What is the total supply for the industry?

(a) 2,11,600 units
(b) 2,12,000 units
(c) 2,12,600 units
(d) 2,11,000 units
(e) 2,10,000 units. **(2marks)**

<Answer>

57. Which of the following is **false** regarding Monopoly?

(a) The firm operating in monopoly can either fix the price or control the supply of product
(b) The demand curve of the market is represented by demand curve of the firm
(c) The demand for and supply of the product produced by the firm are same when marginal revenue of the firm is equal to its marginal cost
(d) There are no barriers to entry
(e) There are no advertising costs. **(1 mark)**

<Answer>

58. In the short run, the demand function of a firm having monopoly market structure is $P = 440 – 15Q$. The total cost is constant at $TC = 200 + 50Q$. What will be the profit maximizing price?

(a) Rs.215
(b) Rs.235
(c) Rs.245
(d) Rs.265
(e) Rs.285. **(2marks)**

<Answer>

59. Alpha Ltd., has a monopoly in producing a product X. The demand function for this product is estimated as Q = 75 – P. The total cost function is TC = 25Q. What is the profit?

(a) Rs.400
(b) Rs.625
(c) Rs.725
(d) Rs.600
(e) Rs.450. **(2marks)**

<Answer>

60. Which of the following factor(s) make price discrimination possible under monopoly?

I. Consumer's preference.
II. The nature of the good.
III. Distance and frontier barrier.

(a) Only (I) 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)**

<Answer>

61. In the short run, a monopolistically competitive firm has the following cost and revenue functions:

$TC = 15{,}000 + 30Q - 20Q^2 + Q^3$
$TR = 30Q - 2Q^2$.

If the firm is maximizing profits, what would be the total cost of the firm?

(a) Rs. 14,208
(b) Rs. 14,218
(c) Rs. 14,209
(d) Rs. 14,228
(e) Rs. 14,108. **(2marks)**

<Answer>

62. Which of the following is **not true** regarding an oligopoly market?

(a) In this type of market, the firms produce either homogenous products or close substitutes
(b) The firms are independent in their decision making
(c) Economies of scale is one of the factors that limits the market to few sellers
(d) Pricing decision of the firm depends on demand conditions, cost conditions and the pricing strategies of the rivals
(e) Barriers to entry in oligopoly are much high. **(1 mark)**

<Answer>

63. 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>

64. 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 then at what point will its profit be maximized?

(a) A
(b) B
(c) C
(d) D
(e) E. **(1 mark)**

<Answer>

65. 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) P_1
(b) P
(c) N
(d) M
(e) P_2. **(1 mark)**

<Answer>

66. The modern economists, in their theory of rent, mentioned that the supply of land as a factor of production can be classified into three types. They are perfectly elastic supply, perfectly inelastic supply and elastic supply. In this regard, which of the following statements is/are **true**?

I. If the supply of land is perfectly inelastic, then there will be no transfer earnings and the actual earning of land is rent.
II. If the supply of land is perfectly elastic, then there will be no difference between transfer earnings and the actual earning of land and no rent is earned.
III. If the supply of land is elastic, then the actual earnings of land is greater than transfer earnings and the difference is rent.

(a) Only (I) 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)**

<Answer>

67. The wages which are paid depending on the quantity of output are termed as

(a) Time wages
(b) Piece wages
(c) Task wages
(d) Kind wages
(e) Service wages. **(1 mark)**

<Answer>

68. What differentiates market rate of interest from real rate of interest?

(a) Demand for capital
(b) Supply of capital
(c) Price level
(d) Savings
(e) Investment. **(1 mark)**

<Answer>

69. Frank H. Knight, in his Uncertainty bearing theory of profit, differentiated risk and uncertainty. Further, he divided risk into insurable risk and non-insurable risk. According him which of the following are non-insurable risks?

I. Risk of competition.
II. Risk arising out of changes in technology.
III. Market conditions risk.
IV. Government policy risk.

(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) All (I), (II), (III) and (IV) above. **(1 mark)**

<Answer>

70. There are several techniques of demand forecasting. These are divided broadly into quantitative and qualitative techniques. Qualitative technique includes

I. Expert opinion.
II. Surveys.
III. Time series analysis.
IV. Market experiments.
V. Barometric methods.

(a) Both (I) and (II) above
(b) Both (II) and (III) above
(c) (I), (II) and (III) above
(d) (I), (II) and (IV) above
(e) (I), (II) and (V) above. **(1 mark)**

END OF QUESTION PAPER

Suggested Answers
Business Economics – I (MB1B3): October 2008

	Answer	Reason	
1.	C	I. Is not an assumption because the economic resources available for use in the year are fixed. II. Is an assumption of PPC. III. Is an assumption of PPC. IV. Is not an assumption because technology is fixed during the year.	< TOP >
2.	E	According to general equilibrium analysis Decision making agents are Consumers. Producers. Resource owners.	< TOP >

	Answer	Reason	
3.	D	If the institute believes that raising course fees will enhance revenue, it can happen only if the demand for the course is inelastic. This implies that as a result of an increase in price, the demand for the course do not fall, which helps in increasing revenue.	< TOP >
4.	E	The value of cross-price elasticity for two complementary products is negative, because change in price of one product causes opposite change in the quantity demanded of the other product.	< TOP >
5.	E	When the value of elasticity of supply is less than one but greater than zero, it is known as relatively inelastic supply.	< TOP >
6.	B	When a unit tax is imposed this will cause the supply curve to shift left ward.	< TOP >
7.	A	If the demand curve is perfectly inelastic, the price rises by the full amount of the tax and the supply remains unchanged. The entire tax is borne by the customers.	< TOP >
8.	E	At equilibrium, $Q_s = Q_d$ $2000 – 450P = 800P – 3000$ $5000 = 1250P$ $P = 4$. When $P = 4$, $Q_s = (800 \times 4) – 3000$ $Q_s = 200$ Elasticity of supply =	< TOP >
9.	B	Price elasticity of demand = $\partial Q/\partial P \times P/Q$ Given $P = 8$ Demand function: $P = 40 – 4Q$ Or, $4Q = 40 – P$ Or, $Q = 10 – 0.25P$ Or $Q = 10 – 0.25(8) = 10 – 2 = 8$ Thus, $\partial Q/\partial P \times P/Q = -0.25 \times 8/8 = -0.250$.	< TOP >
10.	B	$Q_s = 500P – 500$ $Q_d = 1150 – 50P$ Equilibrium price is determined when $Q_s = Q_d$. $\therefore 500P – 500 = 1150 – 50P$ or, $550P = 1650$ or, $P = 3$ When $P = 3$, $Q_s = 500(3) –500 = 1500 – 500 = 1{,}000$ units.	< TOP >
11.	B	The theoretical highest price that can prevail in the market is when the quantity demanded is zero. $12{,}00{,}000 – 40\,P = 0$ $12{,}00{,}000 = 40\,P$ $P =$ $= Rs. 30{,}000.$	< TOP >
12.	E	$P_1 = 8$ $Q_1 = 40$ $P_2 = 10$ $Q_2 = 60$ $\Delta P = 2$ $\Delta Q = 20$ $E_{Pd} = 1.80$	< TOP >

	Answer	Reason

13. C

$Q_d = 10,000 - 4P$

$Q_s = 3,000 + 6P$

Equilibrium price is determined where,

$Q_s = Q_d$

$3,000 + 6P = 10,000 - 4P$

$6P + 4P = 10,000 - 3,000$

$10P = 7000$

$P = 700.$

If the govt. imposes a sales tax of Rs.200 per unit

$Q_s = 3,000 + 6 (P - 200)$

$= 3,000 + 6P - 1200$

$= 1800 + 6P.$

$\therefore$ Equilibrium price is determined, when $Q_s = Q_d$

$\therefore 1800 + 6P = 10,000 - 4P$

$6P + 4P = 10,000 - 1800$

$10P = 8200$

$P = 820$

$\therefore$ Change in Price $= 820 - 700 =$ Rs.120

(Hence the price will increase by Rs. 120)

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14. E

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 vise versa. A negative consumer surplus indicates that the economy is not functioning efficiently.

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15. C

The income effect refers to the effect of a change in the price of a product on the consumer's purchasing power. If the price of a product decreases, the consumer is left with some money that can be used for purchasing additional units of the same product or a different product. This means that his real income has increased. The income effect rule says that a decrease in price of a commodity leads to an increase in quantity demanded.

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16. B

A consumer with a given income will obtain maximum utility when the marginal utility of each commodity is in the same ratio to its price. Suppose there are two products x and y. MUx represents the marginal utility of x and MUy that of product y. Now if the value of MUx/Px is more than MUy/Py, the consumer will substitute product x for product, this substitution will continue till the marginal utility of both the product in ratio to their respective prices are equal.

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	Answer	Reason	
17.	C	(a) True. Indifference curve is various combinations of two goods which give the same level of total utility (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.	< TOP >
18.	A	The indifference curve is convex to the origin. It follows from the assumption that the marginal rate of substitution of X for Y (MRSxy) diminishes as more and more of X is substituted for Y. Only a convex indifference curve can mean a diminishing marginal rate of substitution of X for Y.	< TOP >
19.	C	At equilibrium = = $\therefore MU_y =$ $\times 10 = 140$ utils.	< TOP >
20.	C	The consumer would consume the good up to a point where MU = P. $TU = 12X^{1.5}$ $MU = 18X^{0.5} = 108$ $X^{0.5} = 6$ Or, X = 36 units.	< TOP >
21.	E	$MU_A/P_A = MU_B/P_B$ That gives $250/50 = 350/ P_B$ or $P_B =$ = Rs.70.	< TOP >
22.	B	Total utility = U = 40XY $MU_X =$ U/ X = 40Y $MU_Y =$ U/ Y = 40X At equilibrium, $MU_X/P_X = MU_Y/P_Y$ 40Y/2 = 40X/4 Or, 20Y = 10X Or, 2Y = X Thus, if X = 40, Y = X/2 = 40/2 = 20 units.	< TOP >
23.	B	Option (b) is false because the average product will be greater than marginal product only after the point when both of them are equal. Before this point the marginal product will greater than average product.	< TOP >
24.	D	An isocost line is a straight line sloping downward from left to right.	< TOP >
25.	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 >
26.	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 >

	Answer	Reason	
27.	A	Expansion path is the locus of different points where the firm's expenditure increases without any change in the price of inputs.	< TOP >
28.	B	$MP_L = 0.5L\ (36)^{0.5} = 3L$ $W = MP_L \times P$ (W is the market wage rate). $120 = 3L \times 2$ Or, $L = 20$ units.	< TOP >
29.	D	The production function for a firm $Q = 200L - 0.2L^2$ $AP_L =$ $= 200 - 0.2L.$ When $L = 5$, $AP_L = 200 - 0.2(5) = 200 - 1 = 199$ units.	< TOP >
30.	B	I. $Q = K^{1/2} + L^{1/2}$ 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. $\therefore$ It is a case of constant return to scale. III. $Q = 5K^{1/2} L^{1/2}$ When $K = 1$ and $L = 1$, $Q = 5(1)^{1/2} (1)^{1/2} = 5$ When $K = 2$ and $L = 2$, $Q = 5\ (2)^{1/2} (2)^{1/2} = 10$ $\therefore$ 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 $L = 2$, $Q = (2)^{1/2} (2)^{2/3} = 1.41 \times 1.58 = 2.23$ $\therefore$ It is an increasing return to scale.	< TOP >
31.	A	The MRTS is equal to the ratio of the marginal productivities of the two products that is MP_K/MP_L $3K^{-0.7}L^{0.3}/3K^{0.3}L^{-0.7}$ $K^{-0.7}L^{0.3}/K^{0.3}L^{-0.7}$ L/K.	< TOP >
32.	E	The average variable cost is equal to $150 - 25Q + 30Q^2$ The average fixed cost is equal to $1200/Q$.	< TOP >
33.	D	As the fixed cost is fixed at all points, the shape of the curve is horizontal straight line.	< TOP >
34.	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 >

	Answer	Reason	
35.	D	Since functions (I) and (III) have fixed cost components i.e. 20 and 100, they are relevant in the short run only. And function such as $C = 200Q + 0.5Q^2$ and $C = 10Q + 150Q^2$ are examples of long run cost function because there is no fixed cost components exist in these two functions.	< TOP >
36.	C	The cost function shows that the total cost is depended on the output to be produced.	< TOP >
37.	C	The marginal cost curve intersects both the average variable cost curve and the short run average total cost curve at their lowest points	< TOP >
38.	E	(a) is true hence it is not the correct answer (b) is true hence it is not the correct answer (c) is true hence it is not the correct answer (d) is true hence it is not the correct answer (e) is not true because real economies of scale can be achieved through the reduction in the quantity of inputs. Hence it is the correct answer.	< TOP >
39.	C	AC = + 30 + 6Q TC = $200 + 30Q + 6Q^2$ TVC = $30Q + 6Q^2$ At output 10, TVC = $30(10) + 6(10)^2 = 300 + 600 = Rs.900$.	< TOP >
40.	E	MC will be minimum when $\partial MC/\partial Q = 0$ $50 - 30Q + 0.25Q^2$ $\partial MC/\partial Q = -30 + 0.5Q$ Or, $0.5Q = 30$ Or, $Q = 30/0.5$ $Q = 60$ units.	< TOP >
41.	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. $\therefore MC = AVC.$ $75 - 20Q + 1.5Q^2 = 75 - 10Q + 0.5Q^2$ $1.5Q^2 - 0.5Q^2 - 20Q + 10Q = 0.$ $Q^2 - 10Q = 0$ $Q(Q-10) = 0$ $Q = 10.$ At Q = 10, AVC $= 75 - 10(10) + 0.5(10)^2$ $= 75 - 100 + 50 = Rs.25.$	< TOP >
42.	E	TC=TFC + TVC = 200 + 1, 060 = 1260 Average Fixed Cost of Producing 5^{th} units = 1260/5 = Rs.252	< TOP >
43.	C	AC is minimum when AC/ Q = 0 $AC = 36 - 0.80Q + 0.020Q^2$ $=> -0.80 + 0.040Q = 0$ $=> 0.040Q = 0.80$ $=> Q = 20$ At Q = 20, AC = $36 - 0.80(20) + 0.020(20)^2 = 36 - 16 + 8 = Rs.28$	< TOP >

	Answer	Reason	
44.	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. Or, 50Q = 9,500 Or, Q = 9500/50 = 190 units.	< TOP >
45.	D	TC = $500 – 2Q + 3Q^2$ AC = $500/Q – 2 + 3Q$ = $500/5 – 2 + 15$ = Rs.113.	< TOP >
46.	A	The marginal cost of producing 100 additional units is 3,80,000 – 1,50,000 = 2,30,000 Per unit marginal cost = 2,30,000/100 = Rs.2,300	< TOP >
47.	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 >
48.	D	The industry demand curve in perfect competition is a downward sloping straight line.	< TOP >
49.	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 >
50.	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 >
51.	A	In perfect competition, since the firm is a price taker, the total revenue curve is a straight line starting from orgin.	< TOP >
52.	A	In a perfectly competitive market a firm is price taker hence it's MR will be equal to it's AR and price. Total profit = TR – TC Here TR = 20 × 6 = 120 TC = 17.6 × 6 = 105.6 Total profit of 6^{th} unit is = 120 – 105.6 = Rs.14.4. thousand	< TOP >
53.	C	The firm operating in a perfectly competitive industry earns only normal profits in the long run because of free entry and exit of the firms. The firm operating at its minimum average cost can only prevail in the market. Thus, the equilibrium condition in the long run is when the firm is operating at Min. LAC. If AC = $150 – 1250Q + 25Q^2$ LTC = $150Q – 1250Q^2 + 25Q^3$ LMC = = $150 – 2500Q + 75Q^2$ LAC is minimum, when LMC = LAC Thus, $150 – 2500Q + 75Q^2 = 150 – 1250Q + 25Q^2$ Or, $1250Q = 50Q^2$ Or, 50Q = 1250 Or, Q = 25 units. TR = P × Q = 150 × 25 = Rs.3,750.	< TOP >

	Answer	Reason	
54.	C	For a firm operating in a perfectly competitive industry, the part of MC curve which is above the AVC curve is the supply curve of the firm. MC = ∂TC/∂Q = - 100 + 10Q = P (because at equilibrium MC = MR and in perfect competition MR = AR = P = Demand) Or, 10Q = P + 100 Or, Q = 0.10P + 10 There are 100 firms, hence Qs = 100x Q = 10P + 1000 Equilibrium price is where, $Q_s = Q_d$ 6000 – 490P = 10P + 1000 Or, 500P = 5000 Or, P = Rs.10	< TOP >
55.	B	A firm will shut down its operations if the price is less than average variable cost. Since under perfect competition, price is also equal to marginal revenue, the firm will continue operations in the short run so long as price is at least equal to average variable cost. Thus the minimum price, at which the firm will shut down, is the minimum average variable cost. AVC = 2800 – 240Q + 8Q² Minimum average variable cost: AVC/ Q = 0 Thus, -240 + 16Q = 0 Or, Q = 15 When the firm is producing 15 units, then AVC = 2800 – 240(15) + 8(225) = Rs. 1,000. Thus, if price falls below Rs.1,000, the firm has to shut-down its operation in the short run.	< TOP >
56.	C	To maximize profits, a perfectly competitive firm produces an output where P = MC $TC = 1200 + 600Q – 50Q^2 + Q^3$ $MC = \partial TC/\partial Q = 600 – 100Q + 3Q^2$ $P = 600 – 100Q + 3Q^2$, where Q = 150 units (given) Hence, $P = 600 – 100(150) + 3(150)^2 = 53,100$ Thus, total industrial production is equal to (200 + 4 × 53,100) = 2,12,600 Units.	< TOP >
57.	D	There are strict barriers to entry. Due to this feature of monopoly the firm earns abnormal profits.	< TOP >
58.	C	In monopoly the profit maximizing price is obtained by equating MC and MR. TC = 200 + 50Q MC = 50 TR = P × Q = (440 – 15 Q) Q = 440Q – 15Q² MR = 440 – 30Q MR = MC = 440 – 30Q = 50 Q = 390/30 = 13. Profit maximizing price = 440 –195 = Rs.245	< TOP >

	Answer	Reason	
59.	B	Demand function of the firm is given as Q = 75 – P P = 75 – Q TR = P Q = 75Q – Q^2 MR = 75 – 2Q TC = 25Q MC = 25 Profit maximizing output is obtained when MR = MC = 75 - 2Q = 25 2Q = 50 Q = 25 P = 75 – Q = 75- 25 = 50 Profit = TR – TC TR = P Q = 50 25 = 1250 TC = 25Q = 25 25 = 625 ∴ profit = 1250 – 625 =Rs.625.	< TOP >
60.	E	The factors make price discrimination possible under monopoly are Consumer's preference. The nature of the good. Distance and frontier barrier.	< TOP >
61.	A	The profit maximizing output is where MC = MR $30 – 40Q + 3Q^2 = 30 – 4Q$ Or, $3Q^2 = 36Q$ Or, Q = 12 At output of 12 units, Total cost = $15000 + 30(12) – 20(12)^2 + (12)^3$ = 15000 + 360 – 2880 + 1728 = Rs.14,208.	< TOP >
62.	B	The firms are interdependent in their decision making. They strictly follow the reactions pricing strategies. In fact because of this interdependency it becomes very difficult to determine equilibrium level of price and output in an oligopoly market.	< TOP >
63.	E	The firms after forming a cartel appoint a central agency. The central agency is delegated the authority to decide: I. Total quantity of the product to be produced. II. Price of the product. III. Allocation of production among the members of the cartel. IV. Distribution of the maximum joint profits among the members. Hence option (e) is the correct answer.	< TOP >
64.	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 $MC_2 = MR_2$. Therefore, the firm will get maximum profit at point A.	< TOP >

	Answer	Reason	
65.	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 >
66.	E	All the given statements are true. I. When we consider the supply of land for a particular economy or society the supply is fixed and cannot be altered. Hence there is no transferring earning and the actual earning is rent. II. The supply of land is perfectly elastic for certain use. It implies that as much of land can be obtained as required for use of that purpose. It is possible only when the transferring of all the units of land is same. Then the actual earnings and transfer earnings are one and the same and no rent is earned. III. If we consider from the point of view of an individual then land is neither elastic nor inelastic. Here, actual earnings are greater than the transfer earning and the difference between them is rent.	< TOP >
67.	B	The wages which are paid depending on the quantity of output are termed as piece wages	< TOP >
68.	C	Price level differentiate market rate of interest with real rate of interest	< TOP >
69.	E	Non-insurable risks are those risks which cannot be covered through insurance. Knight identified the following non insurable risks: Risk of competition. Risk arising out of changes in technology. Market conditions risk. Government policy risk.	< TOP >
70.	D	Qualitative technique of demand forecasting includes: Expert opinion. Surveys. Market experiments.	< TOP >

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