Indian Institute of Technology, Guwahati

Mid-Semester Examination

International Economics (HS 126)

QUESTION SET D

Maximum Marks: 45 **Date & Time: 22-09-2024 (02:00 PM – 03:10 PM)**

Please write the question set code at the top of your answer booklet

Part A: Write the correct option and the corresponding answer to each question in your answer booklet.

$1 \times 36 = 36$

1. The marginal rate of substitution between two goods tea and milk is zero regardless of the amount of tea or milk consumed. Then the two goods tea and milk can be considered as,

A. Substitutes

B. Complements

C. Inferior goods

D. None of the options

2. Which of the following is NOT a determinant of the demand for good X

A. The cost of labor used to produce good X.

B. The price of good X.

C. The income of consumers who buy good X.

D. The price of good Y, which is a substitute for good X.

3. At equilibrium, a consumer's marginal rate of substitution between two goods X and Y equals 3 [MRS_XY=3]. If the price of a unit of X equals 6, what is the price of a unit of Y

A. 2

B. 1

C. 6

D. 18

4. Economic profits are:

A. Total revenue minus total cost

B. Marginal revenue minus marginal cost

C. Total revenue minus total opportunity cost

D. Total profits of the economy as a whole

5. A new study finds that drinking tea improves immunity. Predict the impact of this event on the equilibrium prices of tea.

A. The price of tea would rise

B. The price of tea would fall

C. The price of tea would remain unchanged

D. None of the options

6. Which of the following will not cause a shift in the demand curve for DVDs?

A. a change in income

B. a change in wealth

C. a change in the price of Blu-ray discs

D. a change in the price of DVDs

7. The consumer's utility function for the goods X and Y can be represented by the function U=X+Y. Which of the following statements is TRUE.

A. X and Y are substitute goods

B. The indifference curve for X and Y is a straight line

C. The indifference curve for X and Y display constant marginal rate of substitution.

D. All of the options

8. Consider the general demand function Q_d = 3200 - 10P + 0.05Y - 24R, where Q_d represents quantity demanded, P represents price, Y represents income and R represents prices of related goods. Which of the following represents the direct demand function when Y = 64000 and R = 200,

A. Q_d = 1400 - 20P

B. Q_d = 1600 - 10P

C. Q_d = 1400 - 10P

D. Q_d = 1600 - 20P

9. What is the impact on equilibrium price and quantity when there is a rightward shift in the supply curve, demand remaining unchanged

A. Equilibrium price increases and equilibrium quantity decreases

B. Equilibrium price and equilibrium quantity both increases

C. Equilibrium price decreases and equilibrium quantity increases

D. Equilibrium price and equilibrium quantity both decreases

10. The marginal rate of substitution between two goods tea and coffee is constant regardless of the amount of tea or coffee consumed. Then the two goods tea and coffee can be considered as,

A. Substitutes

B. Complements

C. Inferior goods

D. None of the options

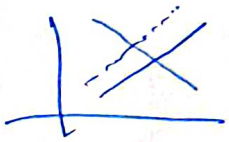
11. What is the impact on equilibrium price and quantity when there is a leftward shift in the supply curve, demand remaining unchanged

A. Equilibrium price increases and equilibrium quantity decreases

B. Equilibrium price and equilibrium quantity both increases

C. Equilibrium price decreases and equilibrium quantity increases

D. Equilibrium price and equilibrium quantity both decreases



12. Suppose the government decides to increase state subsidies to public colleges in a state resulting in lower fees in public colleges. How does it influence the demand for seats and enrolment in public colleges?

A. The demand curve remains unchanged and enrolment falls

B. The demand curve shifts to the left and enrolment rises

C. The demand curve shifts to the right and enrolment rises

D. The demand curve shifts to the right and enrolment falls

13. Which of the following CANNOT result in a shift of the demand curve for a good

A. A change in consumers' incomes.

B. A change in the price of the good.

C. A change in the price of a complement to the good.

D. All of the options.

14. If coffee and milk are complements, then which of the following will occur if the price of coffee increases

A. The quantity of coffee demanded will increase.

B. The quantity of coffee supplied will decrease.

C. The demand for milk will increase.

D. The demand for milk will decrease.

15. Which of the following will not cause a shift in the demand curve for DVDs?

A. a change in income

B. a change in wealth

C. a change in the price of Blu-ray discs

D. a change in the price of DVDs

16. Consider the general supply function $Q_s = 100 + 20P - 10N + 20F$, where Q_s represents quantity supplied, P represents price, N represents input prices and F represents number of sellers. Which of the following represents the direct supply function when N = 100 and F = 25,

A. $Q_s = -400 + 20P$

B. $Q_s = -700 + 20P$

C. $Q_s = 20P$

D. $Q_s = 1600 + 10P$

$100 + 20P - 1000 + 500$

$20P - 400$

17. If Eric prefers to consume tea and sugar in a fixed proportion, what should be the shape of the indifference curve for tea and sugar?

A. L-shaped

B. Straight line

C. Convex to the origin

D. Concave to the origin

18. What is the impact on demand and supply curve when there is an increase in the number of firms

A. Demand curve shifts towards right and supply curve does not change

B. Supply curve shifts towards right and demand curve does not change

C. Supply curve shifts towards left and demand curve does not change

D. Supply curve shifts towards left and demand curve towards right

19. Fixed costs exist only in:

A. The long run

B. Capital intensive markets ✗

C. The short run

D. Labor intensive markets ✗

20. In perfect competition, a firm maximizes profit in the short run by deciding

A. how much output to produce.

B. whether or not to enter a market.

C. what price to charge.

D. how much capital to use.

21. Although the U. S. airline industry has only a relatively small number of sellers, the market is nevertheless highly competitive. The reason is that:

A. the number of buyers is very large.

B. due to fierce competition, no firm has significant control over prices.

C. due to fierce competition, no firm has significant control over the quantity supplied.

D. most airline routes are served by relatively many sellers.

22. Suppose the firm in a perfectly competitive industry is earning a revenue of $20,000 per month. Its variable costs of production increased from $15,000 to $25,000. What are the implications of the rise in total variable costs of production?

A. Equilibrium output would remain the same.

B. Equilibrium output should increase.

C. Equilibrium output would decrease.

D. The firm should shut-down its operations.

23. A production isoquant is a concept related to the

A. Long-run

B. Short-run

C. All of the options

D. None of the options

24. A price-taking firm

A. cannot influence the price of the product it sells.

B. talks to rival firms to determine the best price for all of them to charge.

C. sets the product's price to whatever level the owner decides upon.

D. asks the government to set the price of its product.

25. The larger the diameter of a natural gas pipeline, the lower is the average total cost of transmitting 1,000 cubic feet of gas 1,000 miles. This is an example of

A. economies of scale.

B. normative economies.

C. diminishing marginal returns.

D. an increasing marginal product of labor.

26. Suppose a firm in a perfectly competitive market is incurring a losses amounting to $60,000 per month. Its fixed costs are $68,000 per month. What should the firm do in the short-run?

A. Shut-down its opertations temporarily

B. Continue its operations

C. Exit from the industry

D. None of the options

27. Which of the following is NOT one of the features of the perfectly competetive market?

A. Large number of buyers

B. Single seller

C. Free entry

D. No control over price

28. A monopoly is characterised by,

A. Single buyer

B. Barriers to entry of new firms

C. All of the options

D. None of the options

29. Which of the following are avoidable costs?

A. Expenses on Research & Development (R&D) which cannot be recouped

B. Cost of raw materials

C. None of the options

D. All of the options

30. Which of the following is a reason of decreasing returns to scale

A. Labour specialisation

B. Managerial specialisation

C. Efficient capital

D. Coordination problems

31. If the doubling of inputs doubles the level of output, then it represents,

A. Increasing returns to scale

B. Decreasing returns to scale

C. Constant returns to scale

D. None of the options

32. Suppose the short-run production function is Q=-25L+8LK. The firm operate in the short run with 5 units of capital. What is the average product of labour?

$Q = -25L + 40L$

15

A. 15

B. 5

C. All of the options

D. None of the options

33. In the short-run under monopolistic competition, the firm is in equilibrium when,

A. Marginal cost curve intersects the marginal revenue curve from below

B. Marginal cost curve intersects the marginal revenue curve from above

C. Marginal cost curve intersects the average revenue curve from below

D. Average cost curve intersects the marginal cost curve from below

34. Higher isoquants represents

A. Higher level of output

B. Lower levels of output

C. Same level of output

D. None of the options

35. Suppose the short-run total cost function is TC=20+4Q. Find the average fixed cost at Q=4.

A. 5

B. 4

C. 20

D. None of the options

36. A production isoquant shows:

A. Combinations of labour and capital that yields the same level of expenditure

B. Combinations of labour and capital yielding the same level of output

C. All of the options

D. None of the options

Part B: Answer all the three questions below outlining the steps used in the calculations.

$3 \times 3 = 9$

1. Given the short-run total cost function: $TC = 2Q^3 - 15Q^2 + 30Q + 16$.

   Find the level of output where AVC is minimum and show that $MC = AVC$ at that point.

2. Find the optimal combination of L and K to maximize the production function $Q = 5L^{\frac{1}{2}}K^{\frac{1}{2}}$ subject to the cost of production $C = 4L + 16K$ and a cost level of 128.

3. The demand function facing a firm under monopolistic competition is $P = 180 - 0.5Q$ and the corresponding total cost function can be expressed as,

   $TC = 7Q^2 + 120$.

   Find the profit maximising price and output, and the level of maximum profit.