Code: 237

PART 1: MULTIPLE CHOICE QUESTIONS (30 points)

Answer all questions by choosing **ONE** correct option (A, B, C, or D).

Q1

The rental price of capital is:

A. the price paid to use capital for a limited time period
B. always more than the purchase price
C. determined outside the realm of factor markets
D. the price paid for ownership of the capital

Q2

Writing total output as Q, change in output as ΔQ, employment as L, and change in labor as ΔL, the marginal product of labor is:

A. $\Delta L/\Delta Q$
B. Q/L
C. $\Delta Q/\Delta L$
D. ΔQL

Q3

A monopoly is an inefficient way to produce a product because:

A. it produces a smaller output than in a competitive market
B. it faces a downward-sloping demand curve
C. it can earn both short-run and long-run profits
D. the cost of producing one more unit exceeds its value to buyers

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Q4

Average total cost equals:

A. average variable cost + total fixed cost
B. total cost − total quantity of output
C. total cost / output
D. output / total cost

Q5

Which formula correctly calculates a monopolist's profit?

A. profit = price − marginal cost
B. profit = (price − marginal cost) × quantity
C. profit = price − average total cost
D. profit = (price − average total cost) × quantity

Q6

An optimal tax on pollution would be one in which:

A. producers internalize the cost of pollution
B. a planner maximizes production
C. consumer value exceeds production cost including tax
D. producers create no pollution

Q7

A function showing maximum output from given inputs is called:

A. production possibility curve
B. isoquant
C. production function
D. isocost function

Q8

Which statement is NOT correct?

A. Variable costs change as output changes
B. Fixed costs are constant
C. Average fixed costs are constant
D. Average total costs are typically U-shaped

Q9

In perfect competition, a firm maximizes profit by choosing:

A. output where price equals marginal cost
B. output where AVC is minimized
C. output where AFC is minimized
D. price where MC equals ATC

Q10

If wheat price decreases, what happens to flour supply?

A. supply of flour increases
B. demand for flour decreases
C. supply of flour decreases
D. demand for flour increases

Q11

Which is an implicit cost?

A. foregone rent on owned office space
B. cash paid for raw materials
C. salaries to owners
D. interest on loans

Q12

Oligopolists earn highest profit if they:

A. charge monopoly price
B. follow self-interest
C. produce competitive quantity
D. produce more than competitive quantity

Q13

In perfect competition, price equals:

A. total revenue
B. efficient scale
C. average revenue
D. marginal revenue

Q14

The monopolist's supply curve:

A. is vertical
B. does not exist
C. is horizontal
D. is upward sloping

Q15

Monopolistic competition firms charge higher prices because:

A. decreasing returns to scale
B. increasing costs
C. MR = MC
D. downward-sloping demand

Q16

Price elasticity of demand is:

A. %ΔQ / %ΔP
B. %ΔIncome / %ΔQ

C. %ΔP / %ΔQ
D. %ΔQ / %ΔIncome

Q17

A firm shuts down short run when:

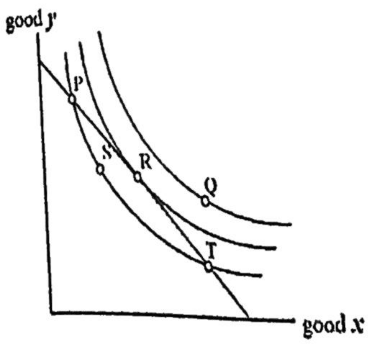
A. P < ATC
B. AR > AFC
C. P < AVC
D. AR > MC

Q18

Law of demand says:

A. lower price increases demand
B. lower price increases quantity demanded
C. higher price increases quantity demanded
D. higher price decreases demand

Q19



Optimal affordable bundle is point:

A. S
B. Q
C. P
D. R

Q20

Impact of one person on another is called:

A. economic dilemma
B. externality
C. deadweight loss
D. third-party problem

Q21

If goods are substitutes, cross-price elasticity is:

A. one
B. negative
C. zero
D. positive

Q22

A firm hires labor until value of marginal product equals:

A. AVC
B. price
C. wage
D. ATC

Q23

Duopoly statements:

A. collusion equals monopoly output
B. self-interest lowers price below monopoly
C. self-interest raises output above monopoly
D. all are correct

Q24

At profit-maximizing output:

A. MR = MC
B. MR = ATC
C. AR = ATC
D. MR = AVC

Q25

A dominant strategy is:

A. best regardless of others
B. best if others cooperate
C. dominates others
D. in every game

Q26

Most likely monopoly:

A. online bookstore
B. local electric cooperative
C. local restaurant
D. national florist

Q27

Highest income elasticity:

A. water
B. diamonds
C. hamburgers
D. housing

Q28

Higher concentration ratio means:

A. more firm control
B. more competitive
C. less competitive
D. A and C

Q29

Not competitive market feature:

A. identical products
B. limited entry
C. price takers
D. profit maximization

Q30

If monopolistic firms earn profit, long run:

A. profits stay
B. consumers leave
C. new firms enter, profits fall
D. government regulates

Part 2: Problem Solving (10 points)

Problem 1

Given the demand and supply functions for the product as follows:

$$Q_d = 200 - 3P$$

$$Q_s = 10P - 20$$

a. Determine the market equilibrium price and quantity. Illustrate by a demand-supply diagram.

b. Calculate the price elasticity of demand at the market equilibrium price. State the meaning of the result.

c. If the government sets the product's price at **$6**, will the market experience a **surplus** or a **shortage**? By how many units?

d. The government imposes a tax of **$1 per unit** on sellers. Determine the new equilibrium price and quantity.

Problem 2

The demand and total cost functions for a company are given as follows:

$P = 190 - 0.5Q$

$TC = 4000 + 10Q + 0.5Q^2$

a. Write the following cost functions: **ATC, VC, AVC, MC**.

b. What price should the company charge if it wants to maximize its profit in the short run? Calculate the company's total profit.

c. What price should it charge if it wants to maximize its revenue in the short run? Calculate the company's total revenue.

d. Find the firm's break-even output and price (where profit equals zero).

Code: 348

Part 1: Multiple Choice Questions (30 points)

Choose the correct answer (A, B, C, or D) for each question.

Q1

In a game, a dominant strategy is:

A. the best strategy for a player to follow, regardless of the strategies followed by other players
B. the best strategy for a player to follow only if other players are cooperative

C. a strategy that leads to one player's interests dominating the interests of other players
D. a strategy that must appear in every game

Q2

If two goods are substitutes, their cross-price elasticity of demand is:

A. one
B. negative
C. zero
D. positive

Q3

The impact of one person's actions on the well-being of a bystander is called:

A. an economic dilemma
B. an externality
C. deadweight loss
D. the third-party problem

Q4

At the profit-maximizing level of output:

A. marginal revenue equals marginal cost
B. marginal revenue equals average total cost
C. average revenue equals average total cost
D. marginal revenue equals average variable cost

Q5

For a firm in a perfectly competitive market, the price of the good is always:

A. equal to marginal revenue
B. equal to the firm's efficient scale of output
C. equal to total revenue
D. greater than average revenue

Q6

Which of the following would be most likely to have monopoly power?

A. an online bookstore
B. a local electrical cooperative
C. a local restaurant
D. a national florist

Q7

A firm under monopolistic competition produces less and charges a higher price than under perfect competition because:

A. the firm faces decreasing returns to scale
B. the firm operates where MR = MC
C. the firm faces increasing costs
D. the firm faces a downward-sloping demand curve

Q8

The law of demand states that, other things equal:

A. when price falls, demand rises
B. when price falls, quantity demanded rises
C. when price rises, demand falls
D. when price rises, quantity demanded rises

Q9

Wheat is the main input in flour production. If wheat price decreases, we expect:

A. supply of flour to increase
B. demand for flour to decrease
C. supply of flour to decrease
D. demand for flour to increase

Q10

Average total cost equals:

A. total cost − total output
B. average variable cost + total fixed cost
C. total cost / output
D. output / total cost

Q11

Which formula correctly calculates a monopolist’s profit?

A. profit = (price − ATC) × quantity
B. profit = price − ATC
C. profit = price − MC
D. profit = (price − MC) × quantity

Q12

A function showing maximum output from given inputs is called:

A. isoquant
B. production possibility curve
C. production function
D. isocost function

Q13

The monopolist’s supply curve:

A. is vertical
B. does not exist
C. is horizontal
D. is upward sloping

Q14

Which statement is correct about duopoly?

A. Collusion gives monopoly output
B. Self-interest lowers price below monopoly
C. Self-interest raises output above monopoly
D. All are correct

Q15

Oligopolists earn highest profit if they:

A. produce competitive quantity
B. produce more than competitive quantity
C. follow self-interest
D. charge monopoly price

Q16

A firm shuts down in the short run when:

A. $P < ATC$
B. $AR > AFC$
C. $P < AVC$
D. $AR > MC$

Q17

The rental price of capital is:

A. always more than purchase price
B. price paid to use capital for a limited time
C. outside factor markets
D. price paid for ownership

Q18

In a competitive market, profit is maximized when:

A. P = MC
B. AFC is minimized
C. MC = ATC
D. AVC is minimized

Q19

Not a characteristic of perfect competition:

A. identical products
B. price takers
C. limited entry
D. profit maximization

Q20

Marginal product of labor is:

A. $\Delta L / \Delta Q$
B. Q / L
C. $\Delta Q / \Delta L$
D. $\Delta L / Q$

Q21

A firm hires labor until value of marginal product equals:

A. AVC
B. price
C. wage
D. ATC

Q22

A monopoly is inefficient because:

A. earns long-run profit
B. produces less than competitive output

C. MC > value to buyers
D. faces downward demand

Q23

Highest income elasticity:

A. water
B. diamonds
C. hamburgers
D. housing

Q24

Price elasticity of demand is:

A. $\%\Delta P / \%\Delta Q$
B. $\%\Delta Q / \%\Delta P$
C. $\%\Delta \text{Income} / \%\Delta Q$
D. $\%\Delta Q / \%\Delta \text{Income}$

Q25

Optimal pollution tax makes:

A. planner maximize output
B. no pollution
C. producers internalize cost
D. value exceed cost

Q26

If monopolistic competitors earn profit, long run:

A. consumers stop buying
B. profits stay
C. new firms enter, profits fall
D. government regulates

Q27

Higher concentration ratio means:

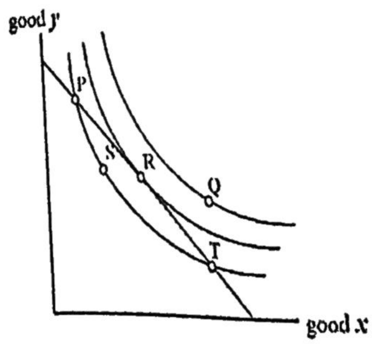
A. more firm power
B. more competition
C. less competition
D. A and C

Q28

Which is NOT correct?

A. AFC is constant
B. FC is constant
C. VC changes with output
D. ATC is U-shaped

Q29



Optimal affordable bundle is:

A. S
B. Q
C. P
D. R

Q30

Which is an implicit cost?

A. salary to owners
B. foregone rent on owned office
C. cash for materials
D. interest on loans

Part 2: Problem Solving (10 points)

Problem 1

Given the demand and supply functions for the product as follows:

$$Q_d = 140 - 20P$$

$$Q_s = 15P - 35$$

a. Determine the market equilibrium price and quantity. Illustrate by a demand–supply diagram.

b. Calculate the price elasticity of demand at the market equilibrium price. State the meaning of the result.

c. If the government sets the product's price at **$4**, will the market experience a **surplus** or a **shortage**? By how many units? Additionally, does this policy represent a **price ceiling** or a **price floor**?

d. The government imposes a tax of **$1 per unit** on sellers. Determine the new equilibrium price and quantity.

Problem 2

The demand and total cost functions for King Star company are given as follows:

$$P = 45 - 0.5Q$$

$$TC = 3 + 57Q - 8Q^2 + Q^3$$

a. Write the following cost functions: **ATC, VC, AVC, MC**.

b. What price and output should the company choose to maximize its profit in the short run? Calculate the company's total profit.

c. Find the firm's output and total profit when the government sets a ceiling price of **$30 per unit**.

d. What price should the company charge to maximize its revenue in the short run? Calculate the company's total revenue.