Midterm Exam

1.
Consider the market for private tutors for Physics, where the quantity is measured in tutor hours and the price in Rupees per hour. You have the following information about this market:

1. Market demand and supply curves are linear

2. Market demand curve is given by $P = 90 - \frac{Q}{10}$

3. The current equilibrium market price and quantity are Rs. 40 per hour and 500 hours respectively.

4. No tutor hours are supplied when the price falls to Rs 15 per hour.

Suppose the government imposes a price floor at Rs. 50 then what will be the producer's surplus

Marks: 2
Type: FLOAT_TYPE

Answer: [{ "min_val": "10000", "max_val": "10000" }]

2.
Alex and Bob are working together on a project, which involves the solving of multiple math and physics problems. It takes Alex 10 minutes to solve a math problem and 20 minutes to solve a physics problem, while Bob can solve a math problem in 15 minutes and a physics problem in 20 minutes. The boys have only **4 hours** to complete their project.

Assuming Alex and Bob works efficiently, and they combine their effort to finish the project by dividing their work according to their respective comparative advantage. Alex and Bob jointly solves 28 math problems. What is the maximum number of physics problems they can solve given their time constraint?

Marks: 2
Type: FLOAT_TYPE

Answer: [{ "min_val": "9", "max_val": "9" }]

3.
Suppose the market for fish in Mumbai is operating under perfect competition characterized by market demand of $Q^d = 1000 - 10P$. If each individual fish seller faces a total cost function given by $TC = 5 + 5q^2$. Find the market clearing quantity when there is free entry and exit of both consumers and producers in the fish market. (Q^d is the market demand and q is the firm output).

Marks: 2
Type: FLOAT_TYPE

Answer: [{ "min_val": "900", "max_val": "900" }]

4.
Suppose the market for fish in Mumbai is operating under perfect competition characterized by market demand of $Q^d = 1000 - 20P$If each individual fish seller faces a total cost function given by $TC = 5 + 5q^2$. The total cosumer surplus in the market is _____. (Q^d is the market demand and q is the firm output)

Marks: 2
Type: FLOAT_TYPE

Answer: [{ "min_val": "16000", "max_val": "16000" }]

5.
Suppose in the city of Mumbai only three people– Pippi, Happi, and Sippi, are interested in purchasing widget. The demand curves for the three consumers, where Q is widgets and P is its price per unit of is given by:

Pippi: $Q = 2 - 2P$

Happi: $Q = 4 - 3P$

Sippi: $Q = 5 - 2P$

(Where negative market price and negative market demand has no meaning). The elasticity of the market demand curve at $P = 1$ and $Q = 4$ is _____.

Marks: 2
Type: FLOAT_TYPE

Answer: [{ "min_val": "1.7", "max_val": "1.8" }]

6.
Miller Technologies has average variable costs of Rs.1 and average total costs of Rs. 3 when it produces 500 units of output. The firm's total fixed costs equal

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) Rs. 1000

1) Rs. 500

2) Rs. 1500

3) Rs. 2000

Answer: [0]

7.
A firm will shut down in the short run if the total revenue that it would get from producing and selling its output is less than its

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) variable costs.

1) opportunity costs.

2) opportunity costs.

3) total costs.

Answer: [0]

8.
Harry's Hotdogs is a small street vendor business owned by Harry Huggins. Harry is trying to get a better understanding of his costs by categorizing them as fixed or variable. Which of the following costs are most likely to be considered fixed costs?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) The cost of bookkeeping services

1) The cost of mustard

2) The cost of hotdog buns

3) Wages paid to workers that sell hotdogs

Answer: [0]

9.
When, in a particular market where the law of demand and the law of supply both apply, the imposition of a binding price ceiling in that market causes quantity demanded to be

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) greater than quantity supplied.

1) less than quantity supplied.

2) equal to quantity supplied.

3) can be either greater than or less than quanity supplied

Answer: [0]

10.
When the demand for a good increase (the demand curve **shifts** to the right) and the supply of the good remains unchanged, the change in the consumer surplus

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) ambiguous

1) decreases

2) increases

3) unchanged

Answer: [0]

11.
Alex and Bob are working together on a project, which involves the solving of multiple math and physics problems. It takes Alex 10 minutes to solve a math problem and 20 minutes to solve a physics problem, while Bob can solve a math problem in 15 minutes and a physics problem in 20 minutes. The boys have only 4 hours left before their project is due.

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. 1. 1. 1. 1. Bob has the comparative advantage in doing physics problems.

1) Bob has the comparative advantage in doing math problems.

2) Neither boy has the comparative advantage in doing physics problems.

3) 1. 1. 1. 1. 1. Neither boy has the comparative advantage in doing math problems.

Answer: [0]

12.
Consider the market for private tutors for Physics, where the quantity is measured in tutor hours and the price in Rupees per hour. You have the following information about this market:

1. Market demand and supply curves are linear

2. Market demand curve is given by $P = 90 - \frac{Q}{10}$

3. The current equilibrium market price and quantity are Rs. 40 per hour and 500 hours respectively.

4. No tutor hours are supplied when the price falls to Rs 15 per hour.

Which of the following statement is true

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. 1. If the government imposes a price floor of Rs 50, there would be a surplus of tutor hours in the market.

1) 1. 1. If the government imposes a price floor of Rs 50, there would be a shortage of tutor hours in the market.

2) 1. 1. There would be no effect on the equilibrium price and quantity if the government imposes a price floor higher than Rs 40.

3) If the government imposes a price floor of Rs35, there would be a shortage of tutor hours in the market

Answer: [0]

13.
Suppose Tyrion Lannister has a fixed income to spend on beer and bread. When both beer and bread cost Rs 150 each, Tyrion buys five beers. When the price of beer rises to Rs 300 and the price of bread rises to Rs 500, Tyrion still buys five beers. You also know that Tyrion's demand for beer and bread is downward sloping. Holding everything else constant, which of the following statements is true? (Assume that the demand curve of Bread does not shifts)

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. 1. For Tyrion, beer and bread are gross substitutes.

1) 1. 1. For Tyrion, beer and bread are gross complements.

2) 1. 1. For Tyrion, beer and bread are normal goods.

3) 1. 1. For Tyrion, bread and beer are inferior goods.

Answer: [0]

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14. Which of the following statements is a normative statement?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) Rather than targeting for 5 trillion-dollar economy, the government should strive to eradicate inequality instead

1) 1. 1. Inflation and unemployment in India are positively correlated.

2) 1. 1. Building additional irrigation infrastructure will increase the quantity of crops harvested.

3) The moon is made of white marble.

Answer: [0]

15.
Consider a market that is initially in equilibrium and the equilibrium price and quantity are P and Q respectively. Then, the government decides to impose a price ceiling at a price of P* that is less than P. Which of the following statements is correct?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) After the price ceiling is imposed, the quantity actually sold in the market is lower than it was before the price ceiling was imposed.

1) After the price ceiling is imposed, the quantity demanded is less than the quantity supplied on the market.

2) 1. 1. Producer surplus in the market increased after the price ceiling was imposed.

3) 1. 1. Since P* is less than P, the price ceiling is effective and therefore, there is no deadweight loss in the market.

Answer: [0]

16.
Suppose in the city of Mumbai only three people– Pippi, Happi, and Sippi, are interested in purchasing widget. The demand curves for the three consumers, where Q is widgets and P is its price per unit of is given by:

Pippi: $Q = 2 - 2P$

Happi: $Q = 4 - 3P$

Sippi: $Q = 5 - 2P$

(Where negative market price and negative market demand has no meaning). Which of the following statements is true for the widget demand in Mumbai?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. At a price of 2, total widget demanded in the market is 1.

1) 1. At a price of 1, the total widget demanded in the market is 7.

2) 1. If widget was free, the three consumers would demand an infinite number of widgets.

3) 1. At a price of 2, total widget demanded in the market is 0.

Answer: [0]

17.
Suppose the market for fish in Mumbai is operating under perfect competition characterized by market demand of $Q^d = 1000 - 20P$If each individual fish seller faces a total cost function given by $TC = 5 + 5q^2$.The firms supply function is

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. 1. $S(p) = \frac{p}{10}$ for all $q \geq 1$

1) 1. 1. $S(p) = \frac{p}{10}$ for all $q \geq 0$

2) 1. 1. $S(p) = \frac{p}{10}$ for all $q \geq 2$

3) 1. 1. $S(p) = \frac{p}{10}$ for all $q \geq -1$

Answer: [1]

18.
The price of flour, an ingredient used in making baguettes, increases. At the same time, the price of croissants, a substitute for baguettes, decreases. What is the impact on the price of baguettes?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) Ambiguous, not enough information to determine

1) The price of baguettes increases

2) The price of baguettes decreases

3) The price of baguettes stays the same

Answer: [0]

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19. Which characteristic of perfect competition ensures that economic profit will be zero in the long run?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) there is freedom of entry and exit in the market

1) each firm’s output is small in relation to total market supply

2) the product is homogeneous

3) each consumer in perfectly competitive market is a price taker

Answer: [0]

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20. Which is true with regard to the shutdown point and the break-even point for a perfectly competitive firm?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) the shutdown point is minimum average variable cost and the break-even point is minimum average total cost

1) they are two names for the same point

2) the shutdown point is minimum average total cost and the break-even point is minimum average variable cost

3) the shutdown point is minimum average variable cost and the break-even point is minimum average fixed cost

Answer: [0]

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21. A perfectly competitive firm producing 100 units of output and at the production point it faces the following facts:

Average total cost is Rs. 20

Average variable cost is Rs. 12

Marginal cost is Rs. 18

Price of the product is Rs. 18

The firm should

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) stays open

1) raises the price of its product

2) shut down

3) reduce the cost of operation

Answer: [0]

22.
A perfectly competitive firm will produce at a point that minimizes the economic loss (negative profit) in the short run rather than discontinue production if there is a rate of output at which price

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) exceeds average variable cost

1) exceeds average fixed cost

2) exceeds average total cost

3) equals marginal cost

Answer: [0]

23.
For a firm operating in perfectly competitive market structure the relationship between market price (P), average revenue (AR), and marginal revenue (MR)?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) P = AR = MR

1) P > AR = MR

2) P = AR > MR

3) P = AR < MR

Answer: [0]

24.
If a consumer’s income and number of sellers of a good in the market both fall, then the equilibrium quantity in the market

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) will either rise or fall (ambiguous)

1) will rise

2) will fall

3) will remain constant

Answer: [0]

25.
The minimum amount Rhea needs to sell her guitar is Rs. 15,500. She finds a buyer for the guitar who is willing to pay Rs. 22,400 which Rhea is not aware of. After haggling for price both Rhea and the buyer decided to finalize the deal for Rs. 20.000, but this buyer insists that Rhea pays for delivery of the guitar. The cost of delivery is Rs. 700. The producer's surplus for Rhea is

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 3800

1) 4800

2) 4500

3) 2800

Answer: [0]

26. Which one of the following relationships is true?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. Economic Profit= Accounting Profit - Opportunity Cost

1) 1. Economic Profit= Accounting Profit + Opportunity Cost

2) 1. Economic Profit= Accounting Profit – Explicit Cost

3) 1. Economic Profit= Accounting Profit + Explicit Cost

Answer: [0]

27. Which of the following statements holds true about the concept of supply?

Marks: 1
Type: MULTIPLE_CHOICE

Options:

0)
If the marginal cost of producing a good is higher at high levels of output than at low levels of output and the marginal cost is above the average variable cost, then the supply curve for that good is the part of the marginal cost curve which is above the average variable cost in perfectly competitive market structure.

1) The "law of supply" states that as price rises, quantity supplied also rises, other things remaining constant.

2)
If the marginal cost of producing a good is higher at high levels of output than at low levels of output and the marginal cost is below the average variable cost, then the supply curve for that good is the part of the marginal cost curve which below the average variable cost in perfectly competitive market structure.

3) A change in quantity supplied leads to a shift in the supply curve

Answer: [[0, 1]]

28. In a perfectly competitive market structure, firms will continue to enter the market until the

Marks: 1
Type: MULTIPLE_CHOICE

Options:

0) 1. 1. Firms have zero economic profit

1) 1. 1. P=MC=ATC; marginal cost is rising

2) 1. 1. Accounting profit is equal to the opportunity cost of the firms

3) P=MC=AVC; marginal cost is rising

Answer: [[0, 1, 2]]

29. Profit maximizing condition for firms in perfectly competitive markets is that

Marks: 1

Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. Marginal cost equals price and marginal cost curve is rising

1) Minimum point of the short run average total cost curve

2) 1. Marginal cost equals price and marginal cost curve is falling

3) 1. Price is equal to the marginal revenue curve

Answer: [0]

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30. In a perfectly competitive market:

Marks: 1
Type: MULTIPLE_CHOICE

Options:

0) 1. 1. Firms will sell identical products

1) 1. 1. Consumers will have information on all prices

2) 1. 1. Firms will sell at different prices

3) 1. 1. Consumer are price setters

Answer: [[0, 1]]

31.
If a production function of positive amount of output, Q, is given by $Q = AL^{\alpha}K^{\beta}$, then the marginal productivity of labor for a given amount of capital will be increasing at a increasing rate at all the levels of inputs if

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) $\alpha > 1 : 0 < \beta < 1$

1) $\alpha \geq 1; \beta > 1$

2) $0 < \alpha < 1; \beta > 1$

3) $0 < \alpha \leq 1; \beta \geq 1$

Answer: [0]

32.
The short run production function of a firm is $Q = -0.1L^3 + 6L^2 + 12L$, where the notations have their usual meanings. What are the values of L that would maximize AP_L and MP_L is _____ and _____ respectively?

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. 30; 20

1) 1. 3; 20

2) 3; 2

3) 20; 30

Answer: [0]

33.
The cost function of the firm producing non-negative amount of output, q, is $C(q) = \frac{q^3}{3} - 3q^2 + 9q$. The average cost is minimized when the output q is

Marks: 1
Type: SINGLE_CORRECT_ANSWER

Options:

0) q=4.5

1) q=0

2) q=2.5

3) q=4.25

Answer: [0]

34.

A short run production function of a production process producing positive amount of output, the average product of a variable factor of production is given by a smooth, inverted 'U' shaped average product curve, if the average product curve is rising then

Marks: 1

Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. Marginal product will be above the average product and the marginal product curve is also rising

1) 1. Marginal product will be above the average product and the marginal product curve is falling

2) 1. Marginal product will be below the average product and the marginal product curve is rising

3) Marginal product will be below the average product and the marginal product curve will falling

Answer: [0]

35.

Suppose the production function is a CES production function given as follows:

$$Q = A[\alpha L^{-\rho} + (1-\alpha)K^{-\rho}]^{-\frac{1}{\rho}}$$

where $0 < \alpha < 1,\ \rho \neq 0,\ A > 0,\ L \geq 0,\ K \geq 0,\ K + L \neq 0.$ Then the production function exhibits _____.

Marks: 1

Type: SINGLE_CORRECT_ANSWER

Options:

0) 1. Constant return to scale

1) 1. Increasing return to scale

2) 1. Decreasing return to scale

3) 1. Variable return to scale

Answer: [0]
