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Economic Studies & Planning 865

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PART A

Section Id : 12820651
Section Number : 1
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Mandatory or Optional: Mandatory
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Number of Questions to be attempted: 25
Section Marks: 100
Display Number Panel: Yes
Group All Questions: No

Sub-Section Number: 1
Sub-Section Id: 12820673
Question Shuffling Allowed : Yes

Question Number : 1 **Question Id : 1282061662** **Question Type : MCQ** **Option Shuffling : No** **Display Question Number : Yes**
Single Line Question Option : No **Option Orientation : Vertical**
Correct Marks : 4 **Wrong Marks : 0**

Consider a single input and single output production technology formed by only one firm whose input and output are 3 assembly workers and 10 garden benches. What is the efficiency score of this firm?

- a. 3/10
- b. 10/3
- c. 1
- d. Can't be determined

Options :

1282066573. A
1282066574. B
1282066575. C
1282066576. D

Question Number : 2 Question Id : 1282061663 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 0

Consider a production technology that comprises of four firms labeled as A, B, C, and D who all exhibit constant returns to scale. Each firm uses one input, staff (L) to produce one output, sales (Q). Their input and outputs are A(5L,4Q), B(8L,6Q), C(2L,1Q) and D(3L,6Q). The efficiency score of firm C is:

- a. 1/4
- b. 1/3
- c. 1/2
- d. 1

Options :

1282066577. A
1282066578. B
1282066579. C
1282066580. D

Question Number : 3 Question Id : 1282061664 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 0

Assume that the consumption basket of a utility maximizing consumer consists of only two goods: x and y. Assume further that she spends a quarter of her income on good x and the income elasticity of demand for good x is 0.5. What is the income elasticity of demand for good y?

- a. 1.17
- b. 1.19
- c. 1.15
- d. 1.21

Options :

1282066581. A
1282066582. B
1282066583. C
1282066584. D

Question Number : 4 Question Id : 1282061665 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Consider the following production function: $Q = 1/[1 + (1/K)(1/L)]$ where Q , K , and L represent, respectively, output, capital, and labor. This production function exhibits decreasing returns to scale for

- a. $Q > 0.0$
- b. $Q > 0.5$
- c. $Q > 1.0$
- d. $Q > 1.5$

Options :

1282066585. A

1282066586. B

1282066587. C

1282066588. D

Question Number : 5 Question Id : 1282061666 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Suppose that a monopoly producer of widget has a constant marginal cost of 6 and sells its produce (x) in two separated markets whose inverse demand curves are $p(x_1) = 24 - x_1$, and $p(x_2) = 12 - 0.5x_2$, where $x = x_1 + x_2$. How much is the deadweight loss created in the market?

- a. 48.5
- b. 49.5
- c. 50.5
- d. 51.5

Options :

1282066589. A

1282066590. B

1282066591. C

1282066592. D

Question Number : 6 Question Id : 1282061667 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Suppose a restaurant earns \$4000 per week in revenues from hamburger sales (product x) and \$2000 per week from soda sales (product y). The price elasticity of demand for x is -1.5 and the cross-price elasticity of demand between soda and hamburger is -4.0. If the restaurant decides to reduce the price of hamburger by 1%, by how much the firm's total revenue will increase?

- a. \$100
- b. \$ 120
- c. \$ 150
- d. \$90

Options :

1282066593. A

1282066594. B

1282066595. C

Question Number : 7 Question Id : 1282061668 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Assume that the technology of a firm exhibits constant returns to scale. If the firm experiences both technical efficiency change (TEFFCH) and technical change (TECHCH) of 1.5 each, then the firm can experience the total factor productivity change (TFPCH) of

- a. 1.5
- b. 1
- c. 3
- d. 2.25

Options :

1282066597. A
1282066598. B
1282066599. C
1282066600. D

Question Number : 8 Question Id : 1282061669 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Assume that a firm's technology is depicted by the following production function: $Q = 10 + L^{0.5}K^{0.7}$. Returns to scale are decreasing for

- a. $Q < 70$
- b. $Q < 50$
- c. $Q < 60$
- d. $Q < 40$

Options :

1282066601. A
1282066602. B
1282066603. C
1282066604. D

Question Number : 9 Question Id : 1282061670 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

The buying propensity of customers of a retail apparel store is 0.40. What is the probability that at least 50 customers initiate a transaction, given that the total daily footfall is 100?

- a. 0.20
- b. 0.40
- c. $1 - P(z < 2.04)$
- d. $P(z > 2.04)$

Options :

1282066605. A

Question Number : 10 Question Id : 1282061671 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

The market analyst estimates that the probability of a product being popular after launch is 0.60. He also believes that for a popular product, it is 80% likely that the sales of that product will surpass the estimated demand. But if the product is not popular, he believes that it is 30% likely that the sales will surpass the estimates. Find the probability that the product's sales will surpass the estimated demand.

- a. 0.80
- b. 0.30
- c. 0.48
- d. 0.60

Options :

- 1282066609. A
- 1282066610. B
- 1282066611. C
- 1282066612. D

Question Number : 11 Question Id : 1282061672 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology consisting of only one firm, which produces 4 units of bad output and 5 units of good output from only 1 unit of input. What is the (good) output efficiency of this firm?

- a. $4/5$
- b. $5/4$
- c. 1
- d. All of the above

Options :

- 1282066613. A
- 1282066614. B
- 1282066615. C
- 1282066616. D

Question Number : 12 Question Id : 1282061673 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology consisting of only two firms, A and B. From the same 1 unit of input, A produces 4 units of bad output and 5 units of good output and B produces 5 units of bad output and 4 units of good output each.

What is the (good) output efficiency of B?

- a. 0.7
- b. 0.8
- c. 0.9
- d. 1

Options :

1282066617. A

1282066618. B

1282066619. C

1282066620. D

Question Number : 13 Question Id : 1282061674 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a manufacturing industry characterized by the following Cobb-Douglas production function: $Q = 10L^{0.5}K^{0.5}$ where Q, L and K represent, respectively, the units of output (Q), labor (L) and capital (K). Assume that a firm operating in this industry is producing 100 units of Q from 4 units of L and 40 units of K. What is the capital efficiency of this firm?

- a. 4/40
- b. 25/100
- c. 40/100
- d. 25/40

Options :

1282066621. A

1282066622. B

1282066623. C

1282066624. D

Question Number : 14 Question Id : 1282061675 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a manufacturing firm characterized by the following cost function: $C = 0.5Q^2 - 10Q$ where C and Q represent, respectively, the cost of output and the units of output. For returns to scale of this firm to be increasing, the output should be:

- a. positive
- b. zero
- c. negative
- d. Cannot be said

Options :

1282066625. A

1282066626. B

1282066627. C

1282066628. D

Consider a manufacturing firm characterized by the following cost function: $C = 100 - 0.5Q_1Q_2 + (Q_1)^2 + (Q_2)^2$ where C represents the cost of producing outputs Q_1 and Q_2 . The firm wishes to produce 5 units of Q_1 and 4 units of Q_2 . What are the returns to scale of this firm?

- a. Increasing
- b. Decreasing
- c. Constant
- d. Cannot be said

Options :

- 1282066629. A
- 1282066630. B
- 1282066631. C
- 1282066632. D

Question Number : 16 Question Id : 1282061677 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 0

Consider a manufacturing firm characterized by the following cost function: $C = 100 - 0.5Q_1Q_2 + (Q_1)^2 + (Q_2)^2$ where C represents the cost of producing outputs Q_1 and Q_2 . The firm wishes to produce 5 units of Q_1 and 4 units of Q_2 . What is the scale elasticity of Q_2 of this firm?

- a. 131/40
- b. 131/22
- c. 131/62
- d. Cannot be determined

Options :

- 1282066633. A
- 1282066634. B
- 1282066635. C
- 1282066636. D

Question Number : 17 Question Id : 1282061678 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 4 Wrong Marks : 0

Consider the short-run production function for wheat industry: $Q = f(X_v, X_f)$ where Q represents wheat production in tons per hectare, the variable input X_v represents fertilizer in kgs per hectare, and the fixed input X_f represents area in hectares. Assume that $X_f = 1$. There are two firms A and B operating in this industry. The efficient firm A uses 40 kgs of fertilizers to produce 3 tons of wheat and the inefficient firm B uses the same 40 kgs of fertilizers to produce 2 tons of wheat. Assume that unit price of wheat (p) is 100 dollars per ton, and the unit price of fertilizer (w_v) is 2 dollars per kg. Let us assume that the profit maximizing level of wheat production is at 5 tons from 80 kgs of fertilizers and the capacity level of wheat production is at 6 tons from 200 kgs of fertilizers. What is the optimal capacity idleness of firm B?

- a. 1/3
- b. 2/3
- c. 3/5
- d. 5/6

Options :

Question Number : 18 Question Id : 1282061679 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Assume that, for a utility maximizing consumer, the income elasticity of demand for good x is 2, the price elasticity of *Hicksian compensated demand* is -1, and the price elasticity of Marshallian demand is -2. What is the consumer's expenditure share on good x?

- a. 20 per cent
- b. 30 per cent
- c. 50 percent
- d. 40 percent

Options :

- 1282066641. A
- 1282066642. B
- 1282066643. C
- 1282066644. D

Question Number : 19 Question Id : 1282061680 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Assume that the consumption basket of a utility maximizing consumer consists of only two goods: x and y. Assume further that she spends 60 per cent of her income on good x and the price elasticity of demand for good x is -0.5. What is the cross-price elasticity of demand for good y?

- a. 6.5
- b. -6.5
- c. 7.5
- d. -7.5

Options :

- 1282066645. A
- 1282066646. B
- 1282066647. C
- 1282066648. D

Question Number : 20 Question Id : 1282061681 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology characterized by five firms – A, B, C, D and E. Each firm uses different combinations of two inputs – labor (L) and capital (K) to produce 1 unit of output. The input data are as follows: A (2L,12K), B (6L,4K), C (14L,2K), D (5L,10K) and E (12L,5K). What is the input technical efficiency of firm C?

- a. 14/2
- b. 1
- c. 14/16
- d. 2/16

Options :

Question Number : 21 Question Id : 1282061682 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology characterized by five firms – A, B, C, D and E. Each firm uses different combinations of two inputs – labor (L) and capital (K) to produce 1 unit of output. The input data are as follows: A (2L,12K), B (6L,4K), C (14L,2K), D (5L,10K) and E (12L,5K). What are the accounting prices of labor (w) and capital (r) for firm B?

- a. $w = 1/16$ and $r = 1/8$
- b. $w = 1/8$ and $r = 1/16$
- c. $w = 1/5$ and $r = 1/5$
- d. $w = 1/5$ and $r = 4/5$

Options :

- 1282066653. A
- 1282066654. B
- 1282066655. C
- 1282066656. D

Question Number : 22 Question Id : 1282061683 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology characterized by five firms – A, B, C, D and E. Each firm produces various combinations of two outputs – Q_1 and Q_2 from the same 1 unit of input. The output data are as follows: A (2 Q_1 ,16 Q_2), B (8 Q_1 ,12 Q_2), C (12 Q_1 ,4 Q_2), D (3 Q_1 ,9 Q_2) and E (7 Q_1 ,5 Q_2). What is the efficiency of firm A?

- a. $2/16$
- b. $2/18$
- c. $16/18$
- d. 1

Options :

- 1282066657. A
- 1282066658. B
- 1282066659. C
- 1282066660. D

Question Number : 23 Question Id : 1282061684 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology characterized by five firms – A, B, C, D and E. Each firm produces various combinations of two outputs Q_1 and Q_2 from the same 1 unit of input. The output data are as follows: A ($2Q_1, 16Q_2$), B ($8Q_1, 12Q_2$), C ($12Q_1, 4Q_2$), D ($3Q_1, 9Q_2$) and E ($7Q_1, 5Q_2$). What is the efficiency of firm E?

- a. $19/28$
- b. $21/28$
- c. $23/28$
- d. $17/28$

Options :

- 1282066661. A
- 1282066662. B
- 1282066663. C
- 1282066664. D

Question Number : 24 Question Id : 1282061685 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a production technology characterized by five firms – A, B, C, D and E. Each firm produces various combinations of two outputs – Q_1 and Q_2 from the same 1 unit of input. The output data are as follows: A ($2Q_1, 16Q_2$), B ($8Q_1, 12Q_2$), C ($12Q_1, 4Q_2$), D ($3Q_1, 9Q_2$) and E ($7Q_1, 5Q_2$). Compute the accounting prices p_1 and p_2 of Q_1 and Q_2 respectively for firm D.

- a. $p_1 = 2/52$ and $p_2 = 50/52$
- b. $p_1 = 1/52$ and $p_2 = 49/52$
- c. $p_1 = 2/52$ and $p_2 = 3/52$
- d. $p_1 = 50/52$ and $p_2 = 1/52$

Options :

- 1282066665. A
- 1282066666. B
- 1282066667. C
- 1282066668. D

Question Number : 25 Question Id : 1282061686 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 0

Consider a manufacturing firm characterized by the following cost function: $C = Q + Q^{0.5}$. Compute the output level at which the minimum efficient scale occurs to this firm.

- a. $Q = 1$
- b. $Q = 0$
- c. $Q = 100$
- d. Cannot be determined.

Options :

- 1282066669. A
- 1282066670. B
- 1282066671. C
- 1282066672. D