

NEW  
EDITION



# UGC-NET ECONOMICS

11 Year PYQs  
2014 - June 2025

Latest  
June 2025  
session paper  
covered

Chapter-wise and Year-wise  
Previous Years Solved Papers

Beneficial for PhD Entrance, SET, GATE, CUET (UG & PG)

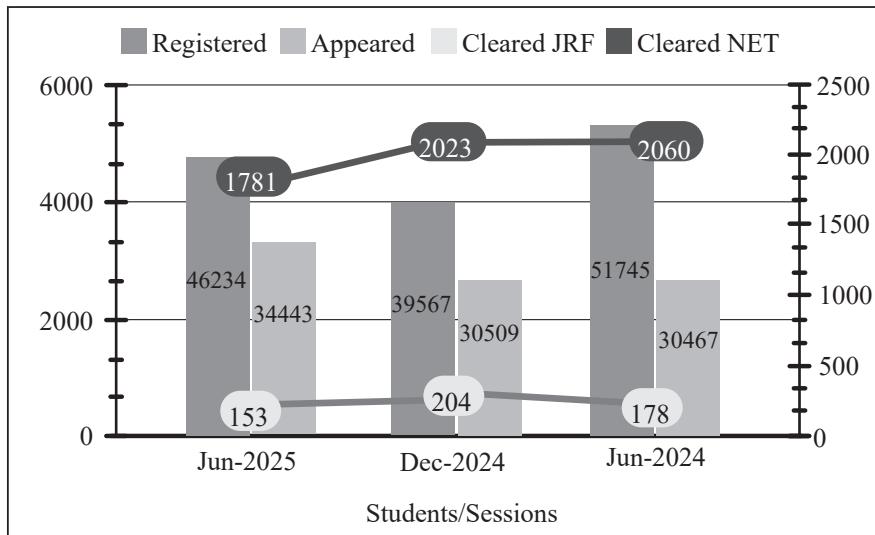
# CHAPTERWISE ANALYSIS

Session	Environmental Economics and Demography	Growth and Development Economics	Indian Economy	International Economics	Macro Economics	Mathematical Economics	Micro Economics	Money and Banking	Public Economics	Statistics and Econometrics
June 2025	9	7	10	9	13	5	13	10	6	18
December 2024	11	12	5	10	18	4	21	2	5	12
June 2024 (Re-exam)	14	5	10	11	12	5	18	5	10	10
June 2024 (Cancelled Exam)	4	11	21	10	17	1	13	3	8	12
December 2023	3	8	8	8	18	7	24	6	2	16
June 2023	8	9	12	9	21	3	11	4	13	10
June 2022	6	8	23	13	14	4	13	5	5	9
December 2022 Shift 1	9	4	19	13	16	0	15	0	11	13
December 2022 Shift 2	5	11	12	14	10	1	17	11	5	14
June 2020	11	10	11	9	14	5	12	7	11	10
December 2019	10	14	10	10	12	4	14	9	8	9
June 2019	10	10	6	11	17	4	15	7	9	11
December 2018	7	14	8	12	17	3	13	4	13	9
June 2018	11	16	9	10	14	2	16	3	11	8
January 2017 (Paper 2)	0	6	5	4	10	0	9	1	7	8
January 2017 (Paper 3)	4	11	8	6	14	2	13	4	8	5
November 2017 (Paper 2)	0	9	5	8	7	0	9	0	7	5
November 2017 (Paper 3)	7	12	10	7	11	3	12	1	7	5
September 2016 (Paper 2)	0	4	7	8	6	0	9	3	8	5
September 2016 (Paper 3)	6	15	7	8	12	2	10	4	6	5
July 2016 (Paper 2)	3	5	4	5	5	0	9	4	10	5
July 2016 (Paper 3)	6	10	9	9	9	3	10	5	9	5
December 2015 (Paper 2)	1	5	6	5	9	0	9	2	5	8
December 2015 (Paper 3)	5	10	9	6	11	1	18	2	7	6
June 2015 (Paper 2)	1	5	4	6	15	0	7	1	3	8
June 2015 (Paper 3)	4	9	11	6	17	2	10	2	7	7
December 2014 (Paper 2)	1	4	14	7	7	0	6	0	5	6
December 2014 (Paper 3)	8	7	14	8	8	2	11	5	6	6
June 2014 (Paper 2)	0	9	4	6	10	0	7	2	6	6
June 2014 (Paper 3)	6	9	18	6	8	1	15	1	6	5

# UGC NET ECONOMICS BLUEPRINT: ANALYZING FOR EXAM MASTERY

## Registered Candidate Comparison

Students/Sessions	Registered	Appeared	Cleared JRF	Cleared NET
June 2025	46234	34443	153	1781
December 2025	39567	30509	204	2023
June 2024	51745	30467	178	2060



## Question Type Analysis of the Last 2 Sessions

Qtype/Sessions	Direct Questions	Multi-Statement based Questions	Match The Following Questions	Chronological Order	Comprehension
June 2025	27	19	15	9	10
December 2024	35	19	15	11	10
June 2024 (Re-Exam)	34	23	15	11	10
June 2024 (Cancelled)	27	16	15	8	10
December 2023	36	25	10	7	10
June 2023	34	26	10	4	10

# CONTENTS

<b>June 2025 Paper .....</b>	<b>1-25</b>
<b>1. Micro Economics .....</b>	<b>26-96</b>
<b>2. Macro Economics .....</b>	<b>97-160</b>
<b>3. Statistics and Econometrics .....</b>	<b>161-203</b>
<b>4. Mathematical Economics.....</b>	<b>204-219</b>
<b>5. International Economics .....</b>	<b>220-264</b>
<b>6. Public Economics.....</b>	<b>265-298</b>
<b>7. Money and Banking.....</b>	<b>299-317</b>
<b>8. Growth and Development Economics .....</b>	<b>318-359</b>
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<b>10. Indian Economy .....</b>	<b>386-434</b>

# JUNE 2025 PAPER

### 1. Match List - I with List - II:

List-I (Concepts)	List-II (their expression)
	(where, $g_m$ = manufacturing output growth, $g_{GDP}$ = $GDP$ growth, $P_{nm}$ = 1 productivity in outside manufacturing, $P_m$ = Productivity in manufacturing)
A. Kaldor's first law of growth	I. $P_m = f(g_m) f' > 0$
B. Kaldor's second law of growth	II. $y^* = - \in (u - u^*)$
C. Kaldor's third law of growth	III. $g_{GDP} = f(g_m) f' > 0$
D. Okun's law	IV. $P_{nm} = f(g_m) f' > 0$

Choose the correct answer from the options given below:

(a) A-IV, B-III, C-I, D-II      (b) A-III, B-IV, C-I, D-I  
 (c) A-III, B-I, C-IV, D-II      (d) A-IV, B-III, C-II, D-I

2. Which of the followings are true regarding the outcome of a consumer's optimization process.

- A. The marginal utility per rupee spent on each good is the same.
- B. The marginal rate of substitution between goods is equal to the ratio of the prices between the goods.
- C. The consumer reaches the highest indifference curve in the indifference map.
- D. The consumer indifference curve is tangent to his/her budget line.
- E. From utility point of view, consumer is indifferent between any two points on his/her budget line.

Choose the correct answer from the options given below:

(a) A, C & E Only      (b) A, D & E Only  
(c) A, B & D Only      (d) A, B, D & E Only

3. Lexicographic preference violates which of the following axioms of utility theory?

(a) Transitivity Axiom      (b) Convexity Axiom  
 (c) Continuity Axiom      (d) Independence Axiom

4. The management of a manufacturing firm wishes to determine the average time required to complete a certain manual operation. There should be 0.95 confidence that error in the estimate will not exceed 2 minutes. What sample size is estimated by a time and motion study expert as 16 minutes?

5. According to Coase theorem, which of the following are possible outcomes of assigning property rights?

- A. The polluter pays the victim to continue polluting.
- B. The victim pays the polluter to reduce pollution.
- C. The government must set pollution taxes to ensure efficiency.
- D. Market outcomes can achieve efficiency even if externalities exist.
- E. The polluter and victim always have equal bargaining power.

Choose the most appropriate answer from the options given below:

(a) A, B & C Only      (b) A, B & D Only  
 (c) B, C & D Only      (d) C, D & E Only

6. Which of the followings are true in case of externality?

- A. In case of externality, all costs and benefits associated with the goods are not internalized by households and firms involved in buying and production.
- B. Presence of externality results either under production or over production of the good.
- C. Market based decision making yields an efficient outcome in the presence of externality.
- D. In case of negative externality, the marginal social cost is higher than marginal cost.
- E. Well defined property right can solve the problem of externality.

Choose the most appropriate answer from the options given below:

(a) A, B, & D Only      (b) B, D & E Only  
(c) A, B, D & E Only      (d) B, C, D & E Only

7. Which of the followings is true in case of a good i.e., “Crowded City side Walk”?

- (a) It is non-excludable and non-rivalry in nature.
- (b) It is excludable but non-rivalry in nature.
- (c) It is non-excludable but rivalry in nature.
- (d) It is excludable and rivalry in nature.

8.	Player 1	Player 2	
		L	R
		T	1, 5
		M	2, 6
		B	3, 7
			2, 2

Which of the following statements are true about the above payoff matrix?

- A. Player-1 has two strictly dominated strategies.
- B. None of the strategies of player-2 are weakly dominated.
- C. Strategy T weakly dominates strategy B.
- D. Strategy M of Player-1 will never be used in Nash-equilibrium.
- E. Strategy M strictly dominates strategy T.

Choose the correct answer from the options given below:

(a) A, B, C & E Only	(b) A, D & E Only
(c) B, C & D Only	(d) C, D & E Only

9. Arrange the following works of J. M. Keynes in chronological order (Starting from the oldest to latest).

- A. A Treatise on Money
- B. General Theory of Employment, Interest and Money
- C. Indian Currency and Finance
- D. A Monetary Theory of Production
- E. A Tract on Monetary Reform

Choose the correct answer from the options given below:

(a) E, C, A, D, B	(b) C, E, A, D, B
(c) C, E, A, B, D	(d) A, C, E, B, D

10. Match List-I with List-II:

List-I (Criteria of finance commission)		List-II (Weights as per the recommendation of 15 <sup>th</sup> finance commission for horizontal devolution)	
A.	Income distance	I:	15%
B.	Population	II.	12.5%
C.	Demographic performance	III.	45%
D.	Forest and Ecology	IV.	10%

Choose the correct answer from the options given below:

(a) A-III, B-IV, C-I, D-II	(b) A-II, B-I, C-III, D-IV
(c) A-III, B-I, C-II, D-IV	(d) A-I, B-IV, C-II, D-III

11. Which of the following is likely to lead to a rise in the output cost of disinflation?

- (a) Inflation expectations become more accurate.
- (b) Sluggish response of wages and prices to monetary contraction.
- (c) Gradual policy response.
- (d) Rational expectations.

12. Match List-I with List-II:

List-I		List-II	
A.	$\int_0^{\infty} \frac{1}{1+x^2} dx$	I.	does not exist

B.	$\int_1^{\infty} \frac{1}{\sqrt{x}} dx$	II.	1/3
C.	$\int_{-\infty}^{-1} \frac{1}{x^4} dx$	III.	$\pi/2$
D.	$\int_{-\infty}^{+\infty} \frac{1}{1+x^2} dx$	IV.	$\pi$

Choose the correct answer from the options given below:

(a) A-I, B-II, C-IV, D-III	(b) A-IV, B-I, C-II, D-III
(c) A-III, B-I, C-II, D-IV	(d) A-II, B-III, C-IV, D-I

13. Which of the following is the operating target of monetary policy conducted by RBI?

- (a) Repo rate
- (b) Reverse Repo rate
- (c) Weighted Average Call Money rate
- (d) Marginal Standing Facility rate

14. Which of the following correctly state the formula to compute the rate of effective protection? Where,  $g$  = the rate of effective protection to producers of final commodities,  $t$  = the nominal tariff rate on consumers of the final commodity,  $t_i$  = the nominal tariff rate on the imported input and  $a_i$  = the ratio of the cost of the imported input to the price of the final commodity in the absence of tariffs.

(a) $g = \frac{t - a_i t_i}{1 - a_i}$	(b) $g = \frac{t + a_i t_i}{1 - a_i}$
(c) $g = \frac{t - a_i t_i}{1 + a_i}$	(d) $g = \frac{t + a_i t_i}{1 + a_i}$

15. Match List-I with List-II:

List-I		List-II	
A.	Income elasticity greater than one	I.	Substitute goods
B.	Positive cross-price elasticity	II.	Inferior goods
C.	Downward sloping price consumption curve (PCC)	III.	Luxurious goods
D.	Negative income effect	IV.	Relative elastic demand

Choose the correct answer from the options given below:

(a) A-IV, B-II, C-I, D-III	(b) A-III, B-II, C-I, D-IV
(c) A-IV, B-II, C-III, D-I	(d) A-III, B-I, C-IV, D-II

16. Which of the following are correct about the foreign trade policy (FTP) 2023 of India?

- A. India's FTP 2023 promotes cross border trade in digital economy.
- B. FTP 2023 emphasized on creation of E-commerce export hubs (ECEH).
- C. It prohibits export and import of arms and related material from /to Iraq.

## Answer Key

1. (c)	2. (c)	3. (c)	4. (d)	5. (b)	6. (c)	7. (c)	8. (b)	9. (b)	10. (c)
11. (b)	12. (c)	13. (c)	14. (a)	15. (d)	16. (d)	17. (d)	18. (b)	19. (c)	20. (c)
21. (c)	22. (c)	23. (a)	24. (c)	25. (c)	26. (c)	27. (a)	28. (a)	29. (c)	30. (d)
31. (b)	32. (b)	33. (b)	34. (a)	35. (b)	36. (b)	37. (c)	38. (b)	39. (c)	40. (c)
41. (c)	42. (d)	43. (c)	44. (a)	45. (c)	46. (d)	47. (a)	48. (d)	49. (d)	50. (a)
51. (c)	52. (b)	53. (d)	54. (b)	55. (b)	56. (b)	57. (c)	58. (d)	59. (c)	60. (c)
61. (a)	62. (c)	63. (a)	64. (b)	65. (a)	66. (d)	67. (b)	68. (b)	69. (c)	70. (d)
71. (d)	72. (b)	73. (b)	74. (b)	75. (a)	76. (b)	77. (d)	78. (b)	79. (d)	80. (d)
81. (c)	82. (a)	83. (b)	84. (a)	85. (b)	86. (d)	87. (c)	88. (d)	89. (b)	90. (b)
91. (c)	92. (d)	93. (a)	94. (d)	95. (b)	96. (b)	97. (c)	98. (c)	99. (b)	100. (b)

## Solutions

### 1. (c) Explanation:

Kaldor's first law of growth is described by the equation  $g_{GDP} = f'(g_m) f' > 0$

The equation describes Kaldor's second law of growth  $P_m = f(g_m) f' > 0$

Kaldor's third law of growth is reflected by  $P_{nm} = f(g_m) f' > 0$

Okun's law is  $y^* = -(u - u^*)$

### 2. (c) Explanation:

**Let us analyse the statements individually**

**Statement A is correct.** It reflects the **equimarginal principle**, which states that a consumer allocates their income in such a way that the marginal utility per rupee spent on each good is equal. Mathematically, this is expressed as  $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ .

This ensures maximum utility from the given income.

**Statement B is correct.** It states that the **marginal rate of substitution (MRS)** between two goods equals the **price ratio**. This is the condition for consumer equilibrium:

$MRS_{xy} = \frac{P_x}{P_y}$ . It means the rate at which the consumer is

willing to trade one good for another equals the market's rate of exchange.

**Statement C is incorrect.** The consumer does not reach the highest indifference curve in the entire indifference map, but rather the **highest indifference curve that is tangent to the budget line**. Due to income constraints, higher indifference curves may be unaffordable.

**Statement D is correct.** At the optimal consumption point, the **indifference curve is tangent to the budget line**. This tangency implies that the marginal rate of substitution equals the price ratio, and no further reallocation of spending can increase utility.

**Statement E is incorrect.** While all points on the budget line are affordable, the consumer is not indifferent between them. They will prefer the combination that lies on the highest possible indifference curve. Indifference applies only to points on the same indifference curve, not the entire budget line.

### 3. (c) Explanation:

Lexicographic preferences refer to a type of preference where a consumer always prefers more of one good (say good X), regardless of how much of the other good (say good Y) is available. For example, the consumer compares bundles first by the amount of X, and only considers Y if the amount of X is equal.

**This type of preference violates the Continuity Axiom of utility theory.**

### 4. (d) Explanation:

To solve this problem, we use the formula for determining the sample size when estimating a population mean with a specified confidence level and margin of error:

$$n = \left( \frac{Z \cdot \sigma}{E} \right)^2$$

Where:

- $n$  = required sample size
- $Z$  =  $z$ -value corresponding to the desired confidence level (for 95% confidence  $Z = 1.96$ )
- $\sigma$  = estimated standard deviation (here, given as 16 minutes)
- $E$  = desired margin of error (here, 2 minutes)

**Thus, we can get:**

$$n = \left( \frac{1.96 \cdot 16}{2} \right)^2$$

$$n = \left( \frac{31.36}{2} \right)^2 = (15.68)^2 = 245.86$$

Rounding up, since sample size must be an integer:

$$n = 246$$

### 5. (b) Explanation:

**Let's analyze each statement in the context of the Coase Theorem:**

Statement (A) The polluter pays the victim to continue polluting is correct.

According to the Coase Theorem, if property rights are assigned to the victim (e.g., clean air rights), the polluter may compensate the victim to continue polluting. This is a voluntary negotiation outcome.

Statement (B) The victim pays the polluter to reduce pollution is correct.

If the polluter has the right to pollute, the victim (e.g., a community affected by pollution) may pay the polluter to reduce emissions. Coase's insight is that efficiency can be achieved regardless of who holds the property rights, as long as bargaining is possible and there are no transaction costs.

Statement (C). The government must set pollution taxes to ensure efficiency is incorrect.

This describes Pigouvian taxation, not the Coase Theorem. Coase explicitly argued that government intervention may not be necessary if property rights are well-defined and transaction costs are negligible.

Statement (D) Market outcomes can achieve efficiency even if externalities exist is correct.

This is the core idea of the Coase Theorem: efficient outcomes are possible through private bargaining, despite externalities, under ideal conditions (i.e., clearly defined property rights and zero transaction costs).

Statement (E) The polluter and victim always have equal bargaining power is incorrect.

The Coase Theorem does not assume equal bargaining power. It assumes only that bargaining can occur and that transaction costs are negligible. In reality, bargaining power can affect distribution, but not efficiency under Coase's ideal conditions.

### 6. (c) Explanation:

Statement A is correct. Externalities occur when the full costs or benefits of production and consumption are not borne by the producers or consumers involved. This means that some costs or benefits are imposed on or enjoyed by third parties, and thus are not internalized in market transactions.

Statement B is correct. The presence of an externality causes a divergence between private and social outcomes. A negative externality, like pollution, results in overproduction of a good, while a positive externality, like education, leads to underproduction. Therefore, market output will not be socially optimal.

Statement C is incorrect. Market-based decision-making without intervention does not yield efficient outcomes in the presence of externalities. This is because markets fail to

account for the external costs or benefits, leading to market failure. Efficiency is only achieved if the externality is internalized.

Statement D is correct. In the case of a negative externality, the marginal social cost (MSC) includes both the private marginal cost and the external cost. Hence, MSC is greater than the private marginal cost, leading to overproduction from a societal perspective.

Statement E is correct. According to the Coase Theorem, if property rights are clearly defined and transaction costs are negligible, then private bargaining between parties can lead to an efficient allocation of resources and resolve the externality problem.

### 7. (c) Explanation:

A crowded city sidewalk is an example of a common good (also called a common-pool resource). Let's analyze its characteristics:

**Non-excludable:** It is difficult to prevent people from using the sidewalk. Anyone can generally walk on it without paying or requiring permission, so it is non-excludable.

**Rivalrous:** When the sidewalk becomes crowded, one person's use of the sidewalk reduces the convenience or space available for others. This makes it rivalrous in consumption.

Therefore, a crowded city sidewalk is non-excludable (people can't easily be kept from using it) and rivalrous (one person's use affects others).

### 8. (b) Explanation:

**First, let us analyse the strategies of Player 1:**

We compare Player 1's strategies **T**, **M**, and **B** across both columns (L and R):

- Compare **T vs M**:

- L: T = 1, M = 2 → M better
- R: T = 0, M = 1 → M better

⇒ M strictly dominates T

- Compare **T vs B**:

- L: T = 1, B = 3 → B better
- R: T = 0, B = 2 → B better

⇒ B strictly dominates T

So, T is strictly dominated by both M and B → T is the weakest.

Now compare **M vs B**:

- L: M = 2, B = 3 → B better
- R: M = 1, B = 2 → B better

⇒ B strictly dominates M

So now:

- T is strictly dominated by both M and B
- M is strictly dominated by B
- B is not strictly dominated

Thus, **Player 1 has two strictly dominated strategies: T and M**

**Now, let us also analyse the strategies of Player 2:**

Player 2's payoffs in each strategy:

## December 2024

1. Given the CES production function an  $y = [a_1 x_1 p + a_2 x_2 p]^p$ , the elasticity of substitution between factors is

(a) 1 (b) P  
 (c)  $\frac{1}{P}$  (d)  $\frac{1}{1-P}$

2. The basis of consumer surplus in Marshallian utility analysis is-

(a) Law of equi-marginal utility  
 (b) Law of proportions  
 (c) Law of diminishing marginal utility  
 (d) Law of demand

3. For the production function,  $Q = AK^\alpha L^\beta$ , where  $A, \alpha, \beta > 0$ , which of the following statement(s) are correct?

A. Degree of homogeneity is 1  
 B. Output elasticity with respect to capital is  $\infty$   
 C. It exhibits constant returns to scale  
 D. Marginal product of a factor = Average product of the factor

Choose the correct answer from the options given below:

(a) A & B Only (b) B & C Only  
 (c) B & D Only (d) B Only

4. Match List-I with List-II

List-I		List-II	
A.	Perfectly Competitive Model	I.	The producers first set the price of the product and then produce the output demanded at that price.
B.	Bertrand Model	II.	It recognises the concept of interdependence among firms
C.	Stackelberg Model	III.	Large number of buyers and sellers
D.	Oligopoly Model	IV.	Few competing firms in the market

Choose the correct answer from the options given below:

(a) A-III, B-I, C-II, D-IV (b) A-I, B-II, C-III, D-IV  
 (c) A-II, B-I, C-III, D-IV (d) A-III, B-II, C-IV, D-I

5. Asymmetric information in the Lemons Market results in:

A. Gradual fall of average price.  
 B. Gradual withdrawal of better quality products.  
 C. Adverse selection by one of the parties  
 D. Gradual withdrawal of inferior quality products.

Choose the **correct** answer from the options given below:

(a) A Only (b) A, C Only  
 (c) A, B, D Only (d) A, B, C Only

6. Walras law states that if  $N-1$  markets are in equilibrium, then we can get equilibrium price/prices in:

(a)  $N^{\text{th}}$  market (b)  $2N$  markets  
 (c)  $N-3$  markets (d)  $N-4$  markets

7. Consider the following statements:

A. Price leadership equilibrium strategy is a Nash equilibrium strategy  
 B. Bertrand equilibrium strategy is a Nash equilibrium strategy  
 C. Stackelberg equilibrium strategy is a Nash equilibrium strategy  
 D. Monopoly equilibrium strategy is a Nash equilibrium strategy  
 E. Cournot's equilibrium strategy is a Nash equilibrium strategy

Choose the correct answer from the options given below:

(a) A Only (b) B Only  
 (c) A, B, C, E Only (d) D & E Only

8. Arrange the following from earlier to present

A. John F. Nash  
 B. Von Neumann and Oscar Morgenstern  
 C. Robert Axelrod  
 D. Paul Milgrom  
 E. John Maynard Smith

Choose the correct answer from the options given below:

(a) A, B, C, D, E (b) A, C, B, D, E  
 (c) A, D, B, C, E (d) B, A, C, E, D

9. The marginal revenue of a firm is Rs. 10 and the price it charges per unit is Rs. 30. Assuring that the firm is a profit maximiser, what is the own price elasticity of demand for the firm at that point of profit maximisation?

(a) 1.5 (b) -1.5  
 (c) -0.66 (d) 0.66

10. In a market model with a 'lagged' supply function, lagging by one time period, the convergence of the time path of price towards the equilibrium price depends on

- Whether slope of supply function > slope of demand function
- Whether slope of supply function < slope of demand function
- Whether slope of supply function = slope of demand function
- Has nothing to do with the slopes of demand and/or supply functions.

11. Find out the correct alternative - Scitovsky double criterion

- does not require the fulfilment of Kaldor - Hicks Welfare criterion test.
- requires only the fulfilment of reversal test
- does not require the fulfilment of reversal test
- requires the fulfilment of Kaldor - Hicks test and reversal test

12. Read the example given below and find out the correct choice compatible from among the alternatives:

If a professor assigns only letter grades to an exam, we know that a student who receives a grade of 'A' did better than a student who receives a 'B', but we cannot say how much better from that ordinal scale. Nor can we tell whether the difference in preference between an 'A' student and a 'B' student and a 'C' student.

- Marshallian utility analysis
- Revealed preference analysis
- Slutsky equation
- Indifference curve analysis

13. Match List-I with List-II

List-I		List-II	
A.	von Neumann and Oscar Morgenstern	I.	Tit - for-tat strategy
B.	Axelrod	II.	Theory of Games, and Economic Behaviour
C.	Stackelberg leadership model	III.	Nash equilibrium
D.	Single - shot game	IV.	Cheating

Choose the correct answer from the options given below:

- A-I, B-II, C-III, D-IV
- A-II, B-I, C-IV, D-III
- A-IV, B-III, C-II, D-I
- A-II, B-I, C-III, D-IV

14. A tangency point between non-linear isoquant and an isocost line identifies-

- the point of production efficiency where a firm can produce a derived output at the minimum possible cost.
- the various levels of output that can be produced using a given level of inputs.
- the various combinations of inputs that can be used to produce a given level of output.
- the least costly combination of inputs required to produce various levels of output.

15. Choose the feature which does not fit with the features of monopolistic competition.

- Firms have little control over price
- Perfect mobility of factors of production
- Products are differentiated
- Factor prices and technology are given

**Directions (16-20) Read the following passage and answer the given questions.**

**Comprehension:** Consider the following Prisoners' Dilemma Game

Table: Safety Investment Game

		Firm-2	
		No Investment	Investment
Firm-1	No Investment	\$200	\$100
	Investment	\$250	\$225
		\$100	\$225

Read the above payoff matrix and answer the following:

16. Find the correct alternative

Safety investment by one firm in the industry

- increases safety of both the firms
- increases safety of the firm which has made investment
- Cannot ensure safety to the industry as a whole
- Increases safety to the firm which has not invested

17. Find the correct alternative

Safety investment by one firm of the two firm industry

- increases workers' wages in the firm which has not invested
- increases workers' wages in the firm which has made invested
- decreases workers' wages in the firm which has made investment
- decreases wages of workers in both the firms

18. Find out the correct alternative: Nash equilibrium occurs when both firms earn-

- (\$200, \$200)
- (\$225, \$225)
- (\$100, \$250)
- (\$225, \$100)

19. Find the correct alternative Investment by both firms

- is an equilibrium
- is a partial equilibrium
- is not an equilibrium
- is a Nash equilibrium

20. Find the correct alternative

In this game, the underinvestment problem can be avoided if -

- One firm invests and the other firm does not
- the government sets safety standards that will force both the firms to invest
- both invest
- none invests

## Answer Key

1. (d)	2. (c)	3. (d)	4. (a)	5. (d)	6. (a)	7. (c)	8. (d)	9. (b)	10. (b)
11. (d)	12. (d)	13. (d)	14. (a)	15. (b)	16. (b)	17. (d)	18. (a)	19. (c)	20. (b)
21. (a)	22. (b)	23. (a)	24. (a)	25. (b)	26. (a)	27. (b)	28. (a)	29. (b)	30. (d)
31. (c)	32. (a)	33. (a)	34. (c)	35. (a)	36. (b)	37. (b)	38. (d)	39. (c)	40. (c)
41. (c)	42. (c)	43. (d)	44. (d)	45. (b)	46. (a)	47. (d)	48. (b)	49. (c)	50. (c)
51. (c)	52. (b)	53. (b)	54. (b)	55. (a)	56. (b)	57. (c)	58. (b)	59. (d)	60. (d)
61. (d)	62. (c)	63. (b)	64. (a)	65. (b)	66. (d)	67. (b)	68. (b)	69. (c)	70. (c)
71. (a)	72. (c)	73. (d)	74. (d)	75. (c)	76. (d)	77. (c)	78. (c)	79. (c)	80. (b)
81. (d)	82. (d)	83. (d)	84. (c)	85. (a)	86. (d)	87. (d)	88. (d)	89. (b)	90. (b)
91. (d)	92. (a)	93. (c)	94. (b)	95. (b)	96. (a)	97. (c)	98. (d)	99. (c)	100. (d)
101. (c)	102. (c)	103. (b)	104. (c)	105. (a)	106. (c)	107. (c)	108. (b)	109. (c)	110. (c)
111. (a)	112. (a)	113. (a)	114. (d)	115. (d)	116. (b)	117. (c)	118. (a)	119. (b)	120. (c)
121. (d)	122. (d)	123. (b)	124. (a)	125. (b)	126. (c)	127. (b)	128. (b)	129. (c)	130. (a)
131. (d)	132. (a)	133. (d)	134. (b)	135. (a)	136. (c)	137. (d)	138. (b)	139. (a)	140. (a)
141. (b)	142. (b)	143. (d)	144. (c)	145. (b)	146. (a)	147. (d)	148. (b)	149. (d)	150. (c)
151. (d)	152. (b)	153. (b)	154. (c)	155. (c)	156. (d)	157. (b)	158. (c)	159. (d)	160. (c)
161. (a)	162. (b)	163. (d)	164. (b)	165. (b)	166. (c)	167. (b)	168. (d)	169. (a)	170. (b)
171. (d)	172. (a)	173. (a)	174. (d)	175. (c)	176. (b)	177. (c)	178. (c)	179. (b)	180. (c)
181. (a)	182. (d)	183. (c)	184. (a)	185. (c)	186. (c)	187. (c)	188. (a)	189. (a)	190. (a)
191. (b)	192. (b)	193. (a)	194. (b)	195. (c)	196. (c)	197. (b)	198. (a)	199. (d)	200. (c)
201. (b)	202. (a)	203. (a)	204. (d)	205. (b)	206. (b)	207. (d)	208. (d)	209. (b)	210. (a)
211. (c)	212. (c)	213. (a)	214. (d)	215. (b)	216. (a)	217. (c)	218. (a)	219. (a)	220. (d)
221. (b)	222. (b)	223. (b)	224. (b)	225. (d)	226. (b)	227. (c)	228. (c)	229. (d)	230. (d)
231. (d)	232. (c)	233. (c)	234. (c)	235. (d)	236. (b)	237. (b)	238. (d)	239. (d)	240. (c)
241. (b)	242. (b)	243. (b)	244. (c)	245. (d)	246. (b)	247. (a)	248. (c)	249. (d)	250. (c)
251. (d)	252. (a)	253. (a)	254. (a)	255. (a)	256. (c)	257. (a)	258. (b)	259. (b)	260. (b)
261. (c)	262. (b)	263. (d)	264. (d)	265. (a)	266. (a)	267. (b)	268. (b)	269. (d)	270. (a)
271. (a)	272. (a)	273. (d)	274. (b)	275. (a)	276. (b)	277. (c)	278. (a)	279. (d)	280. (d)
281. (a)	282. (b)	283. (a)	284. (d)	285. (d)	286. (b)	287. (b)	288. (b)	289. (a)	290. (b)
291. (c)	292. (b)	293. (a)	294. (a)	295. (c)	296. (b)	297. (b)	298. (c)	299. (c)	300. (b)
301. (b)	302. (d)	303. (a)	304. (b)	305. (a)	306. (d)	307. (c)	308. (a)	309. (d)	310. (a)
311. (b)	312. (b)	313. (d)	314. (b)	315. (c)	316. (c)	317. (c)	318. (a)	319. (a)	320. (b)
321. (d)	322. (c)	323. (a)	324. (b)	325. (a)	326. (c)	327. (d)	328. (a)	329. (a)	330. (c)
331. (a)	332. (c)	333. (d)	334. (c)	335. (b)	336. (d)	337. (c)	338. (b)	339. (a)	340. (d)
341. (b)	342. (a)	343. (a)	344. (d)	345. (a)	346. (c)	347. (c)	348. (a)	349. (a)	350. (a)
351. (a)	352. (d)	353. (d)	354. (b)	355. (a)	356. (b)	357. (b)	358. (a)	359. (a)	360. (a)
361. (a)	362. (a)	363. (d)	364. (d)	365. (c)					

## Solutions

1. (d) Given the CES production function an  $y = [a_1 x_1 p_{+a_2} x_2^p]^p$ , the elasticity of substitution between factors is  $\frac{1}{1-p}$

2. (c) In Marshallian utility analysis, consumer surplus is based on the Law of Diminishing Marginal Utility. Marshall explained that consumers are willing to pay more for initial units of a good but pay less for additional units due to diminishing marginal utility. The difference between what a consumer is willing to pay (total utility) and what they actually pay (market price) is the consumer surplus.

3. (d) Let's analyse the statements carefully

**Statement A is incorrect** because the degree of homogeneity is determined by summing the exponents  $\alpha + \beta$ . Since it is not given that  $\alpha + \beta = 1$ , we cannot conclude that the function exhibits constant returns to scale.

**Statement B is correct** because the output elasticity with respect to capital is given by  $E_K = \frac{\partial Q}{\partial K} \times \frac{K}{Q} = \alpha$ , which is a

standard result for Cobb-Douglas functions.

**Statement C is incorrect** because constant returns to scale hold only if  $\alpha + \beta = 1$ , which is not stated in the problem.

**Statement D is incorrect** because the marginal product of a factor is generally not equal to the average product of the factor in Cobb-Douglas functions unless the function is linear in factors, which is not the case here.

4. (a) Explanation:

- Perfectly Competitive Model has a Large number of buyers and sellers
- Bertrand Model reflects that the producers first set the price of the product and then produce the output demanded at that price.
- Stackelberg Model recognizes the concept of interdependence among firms
- Oligopoly Model reflects few competing firms in the market

5. (d) In the context of asymmetric information in the Lemons Market, which refers to situations where one party has more information than the other (typically in markets like used cars), the following occurs:

**Gradual fall of average price:** Asymmetric information leads to a reduction in the willingness of buyers to pay high prices for products when they cannot distinguish between high-quality and low-quality items. This drives the average price down.

**Gradual withdrawal of better quality products:** When sellers of high-quality products realize that they cannot get a fair price due to buyers' reluctance, they may withdraw from

the market, leaving only lower-quality products.

**Adverse selection by one of the parties:** This refers to the situation where one party (usually the seller) takes advantage of their superior information to make transactions that may be disadvantageous to the other party (buyers in the case of lemons).

**Gradual withdrawal of inferior quality products:** This is not the case in a lemon market. Instead, it is the higher-quality products that tend to withdraw from the market, not the inferior ones.

6. (a) Walras' Law is a fundamental principle in general equilibrium theory, which states that if there are  $N-1$  markets in equilibrium in an economy, then the  $N$ th market must also be in equilibrium. This is based on the idea that the sum of excess demands across all markets must be zero. If all markets except one are in equilibrium, the equilibrium condition must hold for the remaining market as well, ensuring overall market equilibrium.

7. (c) **Statement A is correct** as Price leadership can be a Nash equilibrium if the leader sets a price and other firms follow, and no firm has an incentive to deviate from this strategy.

**Statement B is correct** as, Bertrand equilibrium is indeed a Nash equilibrium, where firms set prices such that no firm can improve its profits by changing its own price given the price set by the competitors.

**Statement C is correct** as, The Stackelberg model involves a leader-follower scenario where the leader sets its quantity first, and the follower reacts optimally. This is a type of sequential game and results in a Nash equilibrium for both players.

**Statement D is incorrect** as, A monopoly doesn't typically involve competition with other firms, so it's not considered a Nash equilibrium strategy in the context of competitive markets. It's a monopolist's optimal strategy in the absence of competition, but it's not a Nash equilibrium in the traditional game-theoretic sense.

**Statement E is correct** as, Cournot's equilibrium strategy is a Nash equilibrium strategy: The Cournot equilibrium is a Nash equilibrium in oligopoly models, where firms choose quantities to maximize their own profit given the quantities chosen by other firms.

8. (d) Here is the correct chronological order,

- B. Von Neumann and Oscar Morgenstern: Their work, "Theory of Games and Economic Behavior" (1944), is foundational in game theory and comes first chronologically.
- A. John F. Nash: Nash developed his famous equilibrium concept, the Nash equilibrium, in the 1950s, following the work of Von Neumann and Morgenstern.
- C. Robert Axelrod: Axelrod is known for his work on the evolution of cooperation, particularly the "Tit for Tat" strategy in the 1980s.

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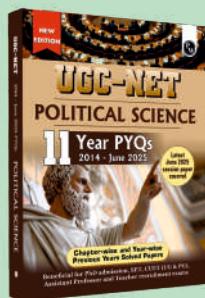
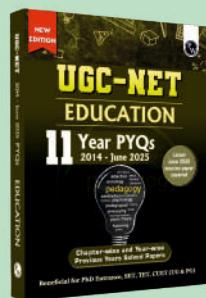
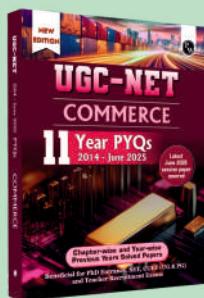
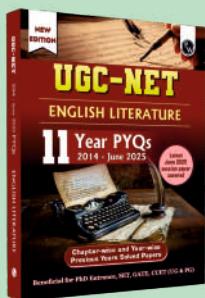
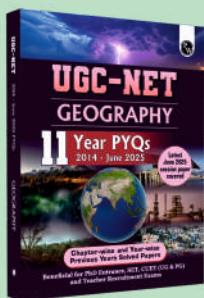
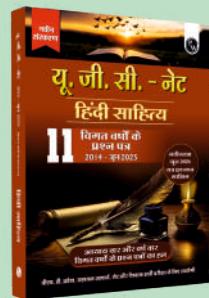
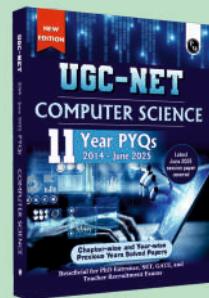
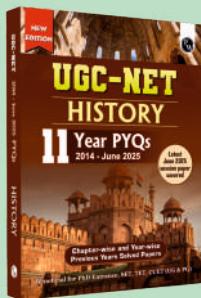
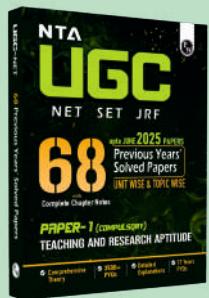
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