

## General Instructions:

- i) This question paper contains two sections:
  - a) Section A – STATISTICS FOR ECONOMICS
  - b) Section B – INTRODUCTORY MICROECONOMICS
- ii) Questions 1-10 and 18-27 are very short answer questions of 1 mark each. Answer them in one sentence each/write the correct option on your answer sheet.
- iii) Questions 11-12 and 28-29 are short answer questions of 3 marks each. Answer them in a maximum of 60 to 80 words each.
- iv) Questions 13-15 and 30-32 are short answer questions of 4 marks each. Answer them in a maximum of 80 to 100 words each.
- v) Questions 16-17 and 33-34 are long answer questions of 6 marks each. Answer them in a maximum of 100 to 150 words each.

**SECTION - A (STATISTICS FOR ECONOMICS)**

1. \_\_\_\_\_ method of random sampling is most useful in case the population has heterogenous characteristics. (Fill up the blank with the correct answer) 1
2. Which of the following is not true about Index Numbers? (Choose the correct alternative) 1
  - a) Index numbers are specialized averages.
  - b) Index numbers take into account qualitative changes.
  - c) Index numbers lack perfect accuracy.
  - d) Index numbers measure the changes in related variables with respect to time or place.
3. The marks of six students in a class are as follows: 40, 65, 70, 55, 60, X. If the mean marks are 60, find the value of X. 1
4. State any two guidelines to be kept in mind while selecting the base year for an index number. 1
5. In an asymmetrical distribution, if the value of mode is 50 and that of mean is 20, then the value of median will be \_\_\_\_\_. (Fill up the blank with the correct answer) 1
6. If all the points in a scatter diagram lie exactly on a downward sloping straight line, it represents: (Choose the correct alternative) 1
  - a) perfect positive correlation.
  - b) perfect negative correlation.
  - c) high degree of positive correlation.
  - d) low degree of negative correlation.
7. If the money wage of a person is ₹14,000 and the corresponding real wage is ₹10,000, calculate the Consumer Price Index. 1
8. Which of the following is a discrete variable? (Choose the correct alternative) 1
  - a) Number of students in a class
  - b) Weight of a student
  - c) Height of a student
  - d) Distance travelled by a car
9. Read the following statements carefully:  
Statement 1: Median is affected by a change in extreme values.  
Statement 2: Mode, as a measure of central tendency, is based on all observations.  
In light of the given statements, choose the correct alternative from the following: 1
  - a) Statement 1 is true and Statement 2 is false.
  - b) Statement 1 is false and Statement 2 is true.
  - c) Both Statements 1 and 2 are true.
  - d) Both Statements 1 and 2 are false.
10. Which of the following shows the lowest degree or strength of correlation between two variables X and Y? (Choose the correct alternative) 1
  - a) 0.01
  - b) (-) 0.50
  - c) (-) 1.0
  - d) 0
11. Explain any three characteristics of statistics in the plural sense. 3  
(OR)  
Discuss any three limitations of statistics. 3
12. Find the median marks of the following series: 3

Marks	10	15	30	20	25
Frequency	12	10	14	5	8

13. Calculate Karl Pearson’s coefficient of correlation between X and Y for the given data and comment on your answer: (Take Assumed Mean for X = 40 and that for Y = 45) 4

X:	30	20	50	40	60
Y:	75	90	45	60	30

(OR)

- Calculate Spearman’s coefficient of rank correlation between A and B for the given data and comment on your answer: 4

A:	29	22	29	34	26	29
B:	19	32	24	32	28	30

14. a) Calculate Paasche’s price index for the given data with 2020 as the base year and interpret it. 2+2

Commodities	Price in 2020 (₹)	Price in 2023 (₹)	Quantity in 2020	Quantity in 2023
A	5	6	120	100
B	2	4	100	50
C	4	5	200	150
D	2	3	150	100

- b) Explain any two uses of Wholesale Price Index.

15. a) Differentiate between census and sampling techniques of data collection. 3+1  
 b) State any two merits of Direct Personal Investigation method of primary data collection.

16. a) Find the arithmetic mean and median for the given data. 4+2

Marks (Less than)	100	120	140	160	180
No. of students	5	20	50	70	80

- b) Calculate mode for the series given above.

17. a) Draw a histogram and frequency polygon for the data given below: 3+3

Marks	50-60	60-70	70-80	80-90	90-100
No. of Students	12	24	18	15	6

- b) Present the following data in the form of a pie-chart:

Items of Expenditure	Amount in ₹
Food	10000
Clothing	5000
Rent	3000
Miscellaneous	2000

(OR)

- a) Draw a 'more than' ogive for the following data. 3+3

Age (in years)	40-50	50-60	60-70	70-80	80-90
No. of Persons	10	25	20	15	10

- b) Represent the following year-wise data on production of Rice, Wheat and Bajra using a multiple bar diagram:

Production in tonnes of	2020-21	2021-22	2022-23
Rice	350	400	450
Wheat	450	500	300
Bajra	150	200	250

**SECTION – B (INTRODUCTORY MICROECONOMICS)**

18. The PPC is concave to the origin because of: (Choose the correct alternative) 1  
 a) decreasing Marginal Rate of Transformation.  
 b) decreasing Marginal Rate of Exchange.  
 c) increasing Marginal Rate of Substitution.  
 d) increasing Marginal Rate of Transformation.

19. Choose the correct pair of statements given in Column 1 and Column 2: 1

Column 1	Column 2
1. Expenditure on raw material	A. Fixed Cost
2. Rent of hired factory building	B. Implicit Cost
3. Wages paid to factory worker	C. Variable Cost
4. Imputed interest on owner’s capital	D. Explicit Cost

Alternatives:

- a) 1-A                      b) 2-B                      c) 3-C                      d) 4-D
20. For a given good (X), a decrease in the price of the other good in production (Y), will lead to: (Choose the correct alternative) 1  
 a) a leftward shift of the supply curve of X.  
 b) an upward movement along the supply curve of X.  
 c) a downward movement along the supply curve of X.  
 d) a rightward shift of the supply curve of X.

21. When AP is maximum, MP is equal to \_\_\_\_\_. (Fill up the blank with the correct answer) 1

22. For a commodity, if there is a simultaneous shift of the demand and supply curves, there will be no change in equilibrium price when: (Choose the correct alternative) 1  
 a) Increase in demand < Decrease in supply  
 b) Decrease in demand = Decrease in supply  
 c) Increase in demand = Decrease in supply  
 d) Decrease in demand > Increase in supply

23. When marginal utility falls and but is positive, total utility \_\_\_\_\_. (Fill up the blank with the correct answer) 1

24. Read the following statements - Assertion (A) and Reason (R). Choose one of the correct alternatives given below: 1

Assertion (A): A decrease in price of complementary good leads to a leftward shift of the demand curve of the given good.  
 Reason (R): There is an inverse relation between price of complementary good and demand for a given good.

Alternatives:

- a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).  
 b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).  
 c) Assertion (A) is true but Reason (R) is false.  
 d) Assertion (A) is false but Reason (R) is true.

25. The price of good X is ₹2 and that of good Y is ₹5. If the income of the consumer is ₹50, the budget constraint will be stated as: \_\_\_\_\_ (Fill up the blank with the correct answer) 1

26. An indifference curve is related to which of the following? (Choose the correct alternative) 1  
 a) Prices of goods X and Y in the market.                      b) Budget of the consumer.  
 c) Choices and preferences of the consumer.                      d) Consumer’s income.

27. Read the following statements carefully:  
 Statement 1: Both AR and MR can be zero or negative at a non-zero output level.  
 Statement 2: When TR is maximum, MR is zero.  
 In light of the given statements, choose the correct alternative from the following: 1  
 a) Statement 1 is true and Statement 2 is false.  
 b) Statement 1 is false and Statement 2 is true.  
 c) Both Statements 1 and 2 are true.  
 d) Both Statements 1 and 2 are false.

28. Discuss the feature and implication of 'freedom of entry and exit' under perfect competition. (OR)  
Under perfect competition, there are large number of buyers and sellers in the market. Discuss its implications. 3
29. Differentiate between positive and normative economics. Give one example of each. 3
30. Market for good X is in equilibrium. With the help of a diagram, explain the effect of an increase in demand for good X on its equilibrium price and quantity. 4  
(OR)  
Explain the concept of price ceiling with the help of a diagram. When does the government fix a price ceiling and what are its consequences? 4
31. Giving reasons for your answer, locate producer's equilibrium using MR-MC approach for the data given below for a firm. Also, compute the maximum profit of the firm. 4

Output	1	2	3	4	5	6
TR	8	16	24	32	40	48
TC	10	18	22	24	32	44

32. A consumer consumes only two goods X and Y. Explain the conditions of consumer's equilibrium using utility approach. 4
33. Read the following text carefully:

The demand curve is a visual representation of how many units of a good or service will be bought at each possible price, assuming ceteris paribus or that no other economically relevant factors are changing. This gives a general overview of the relationship between price and demand, but in the real world, different goods show different degrees of responsiveness of demand to a given change in price. This produces different degrees of price elasticity of demand.

For example: Salt has no close substitute, therefore, despite an increase in the price of salt, its demand is hardly affected. However, demand for a particular brand of toothpaste is comparatively more elastic as there are many brands of toothpaste available in the market, so the consumers can switch over to any other brand in case of a hike in the price of a particular brand of toothpaste.

There are other factors that affect price elasticity of demand. The elasticity of demand tends to be low when spending on a good is a small proportion of the available income as a change in the price of a good exerts a very little impact on the consumer's budget and decision to consume the good.

Also, there may be more than one factor at play, at a time, when it comes to studying elasticity of demand of a good for a given change in its price.

On the basis of the given text and common understanding, answer the following questions: 2x3

- a) Compared to a matchbox, demand for cars will be more elastic. True/False. Give reason.
- b) With a 10% rise in the price of good X, there is no change in its quantity demanded. Giving reason, comment on the elasticity of demand and draw the demand curve for such a good.
- c) What do you mean by 'expansion of demand' for a commodity? Explain using a diagram.
34. a) Giving reasons, identify the different phases of Law of Variable Proportions in the schedule given below. 4+2

Variable Input	1	2	3	4	5	6	7
Total Product	4	10	17	22	24	24	22

- b) With the help of a diagram, explain the relation between TR and MR when all units of output can be sold at the same per unit price. (OR)
- a) Draw TC, TVC and TFC curves in a single diagram and discuss the relationship between them. Explain the reason behind the shape of the TVC curve. 4+2
- b) As a result of a 20% fall in the price of good X, its supply falls from 500 units to 450 units. Calculate and comment on the price elasticity of supply.