Worksheet No.1

Topic: Assertion and Reason

Assertion–Reason Questions (Statistics)

Directions:
Choose the correct option:
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

Chapter 1: Introduction to Statistics

Q1.
A: Statistics deals only with numerical data.
R: Statistical analysis requires data to be expressed in numbers.

Q2.
A: Statistics is useful in business decision-making.
R: It helps in forecasting future trends.

Q3.
A: Statistics does not study individual facts.
R: Statistics is concerned with aggregates of facts.

Chapter 2: Collection of Data

Q4.
A: Census method is suitable for small populations.
R: Census method involves complete enumeration.

Q5.
A: Sampling method saves time and cost.
R: It studies only a representative part of the population.

Q6.
A: Primary data are more reliable than secondary data.
R: Primary data are collected directly by the investigator.

Q7.
A: Random sampling avoids bias.
R: Every unit of population has equal chance of selection.

Chapter 3: Organisation of Data

Q8.
A: Classification simplifies raw data.
R: Classification arranges data into homogeneous groups.

Q9.
A: Frequency distribution helps in statistical analysis.
R: It shows the number of observations corresponding to each value.

Q10.
A: Class interval is the difference between upper and lower limits.
R: It shows the width of a class.

Chapter 4: Presentation of Data

Q11.
A: Histogram is used for continuous data.
R: In a histogram, rectangles are adjacent to each other.

Q12.
A: Bar diagrams are used to represent discrete data.
R: Bars in a bar diagram have equal width.

Q13.
A: Ogive curves help in finding median.
R: Ogives are cumulative frequency curves.

Q14.
A: Pie diagram shows relative importance of data.
R: The total angle of a pie diagram is 360°.

Chapter 5: Measures of Central Tendency

Q15.
A: Mean is influenced by extreme values.
R: Mean takes into account all observations.

Q16.
A: Median is suitable for open-end distributions.
R: Median can be calculated without knowing extreme values.

Q17.
A: Mode is the value with highest frequency.
R: Mode can be located graphically using histogram.

Chapter 7: Correlation

Q18.
A: Correlation studies the relationship between two variables.
R: It shows the degree and direction of relationship.

Q19.
A: Positive correlation means both variables move in the same direction.
R: Increase in one variable leads to increase in the other.

Q20.
A: Scatter diagram helps in studying correlation.
R: The pattern of dots indicates the nature of correlation.

Assertion–Reason Questions (Class XI – Micro Economics)

Directions:
Each question has an **Assertion (A)** and a **Reason (R)**. Choose the correct option:
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

Chapter 1: Introduction to Micro Economics

Q1.
A: Micro economics studies individual economic units.
R: It deals with the behaviour of individual consumers and firms.

Q2.
A: Micro economics is also called price theory.
R: It explains determination of prices of goods and factors.

Chapter 2: Consumer's Equilibrium

Q3.
A: A consumer is in equilibrium when marginal utility equals price.
R: Consumer maximises satisfaction at this point.

Q4.
A: Law of diminishing marginal utility explains downward slope of demand curve.
R: Marginal utility decreases as consumption increases.

Q5.
A: Consumer equilibrium under indifference curve analysis occurs at the point of tangency.
R: At this point, MRS equals the ratio of prices.

Chapter 3: Demand

Q6.
A: Demand refers to willingness and ability to buy a good.
R: Desire alone does not constitute demand.

Q7.
A: Law of demand shows inverse relationship between price and quantity demanded.
R: When price falls, quantity demanded increases due to substitution effect.

Q8.
A: Change in demand leads to shift of demand curve.
R: Change in price causes change in demand.

Chapter 4: Elasticity of Demand

Q9.
A: Price elasticity of demand is more than one for luxury goods.
R: Demand for luxury goods is highly responsive to price changes.

Q10.
A: Demand is perfectly inelastic when elasticity is zero.
R: Quantity demanded does not change with change in price.

Q11.
A: Elasticity of demand at a point on straight line demand curve is different at different points.
R: Elasticity depends on the slope of the demand curve.

Chapter 5: Production Function

Q12.
A: Production function shows relationship between inputs and output.
R: It assumes technology remains constant.

Q13.
A: Law of variable proportions applies in short run.
R: At least one factor of production is fixed.

Chapter 6: Cost

Q14.
A: Average cost falls when marginal cost is less than average cost.
R: Marginal cost pulls average cost downwards.

Q15.
A: Total fixed cost remains constant at all levels of output.
R: Fixed costs do not depend on output.

Chapter 7: Revenue

Q16.
A: Average revenue curve is the same as demand curve under perfect competition.
R: Price is equal to AR for a competitive firm.

Q17.
A: Marginal revenue is less than average revenue under monopoly.
R: Monopoly firm has to reduce price to sell additional units.

Chapter 8: Producer's Equilibrium

Q18.
A: A producer is in equilibrium when MR = MC.
R: Profit is maximum at this output level.

Q19.
A: Profit can exist only in short run.
R: In long run, firms earn normal profit.

Chapter 9: Perfect Competition

Q20.
A: A firm under perfect competition is a price taker.
R: A single firm cannot influence market price.

Worksheet No.2

A. STATISTICS – Competency-Based Questions

3-Mark Questions (Statistics)

1. A school wants to study the average study time of its students.
   Which method of data collection would you suggest—census or sampling?
   Give **two reasons** for your choice.
2. The marks obtained by students of Class XI are arranged into class intervals.
   Explain **any three advantages** of grouping data.
3. The following data is presented through a bar diagram:
   Sales of books in five months.
   State **three conclusions** that can be drawn from such a diagram.
4. A researcher chooses stratified sampling instead of simple random sampling.
   Explain **why stratified sampling gives more reliable results**.
5. Two distributions have the same mean but different medians.
   What does this indicate about the **nature of the distributions**? Explain.

4-Mark Questions (Statistics)

6. A company collected data on employee salaries and represented it using a histogram.
   (a) State **two conditions** necessary for drawing a histogram.
   (b) Explain **two advantages** of histogram over bar diagram.
7. The cumulative frequency curve of students' marks is drawn.
   Explain how **median** can be located from the ogive and state **two uses** of ogives.
8. The following data relates to daily wages of workers.
   Explain how **Arithmetic Mean** is calculated for grouped data and mention
   two limitations of mean.
9. Two variables show a close relationship when plotted on a scatter diagram.
   Explain how the **direction and degree of correlation** are identified from it.
10. Explain how **classification and tabulation** help in simplifying large data sets.
    Give one example from real life.

B. MICRO ECONOMICS – Competency-Based Questions

3-Mark Questions (Micro Economics)

1. A consumer continues to buy a commodity until marginal utility equals its price.
   Explain how this behaviour reflects **rational consumer choice**.
2. Price of a good falls but quantity demanded remains unchanged.
   What type of demand is this?
   Give **two reasons** for such behaviour.
3. A firm increases output by employing more labour while keeping capital fixed.
   Identify the law applicable and state **two reasons** for its operation.

4. A monopolist charges different prices for the same product in different markets.
   What condition of **elasticity of demand** makes this possible?
5. A firm is earning super-normal profits in the short run.
   Explain how **entry of firms** affects profits in the long run.

4-Mark Questions (Micro Economics)

6. Explain the **Law of Demand** using a real-life example.
   State **two exceptions** to the law.
7. A consumer's equilibrium is attained at the point of tangency between
   budget line and indifference curve.
   Explain this condition and state **two assumptions**.
8. With the help of a table, explain the relationship between
   Average Cost and Marginal Cost.
9. Explain the behaviour of **AR and MR curves under monopoly**.
   Why does MR lie below AR?
10. A firm decides its level of output using MR–MC approach.
    Explain **both conditions of producer's equilibrium** and their significance.

Worksheet No.3

A. STATISTICS – CASE STUDY BASED QUESTIONS

Case Study 1: Collection and Organisation of Data

A school administration wants to analyse the **academic performance of Class XI students**. Data regarding marks obtained by 200 students in Economics was collected. Instead of collecting data from all sections, the administration selected students from each section proportionately.

Questions:

a) Identify the **method of data collection** used in the above case. (1)
b) Why is this method considered more representative than simple random sampling? (2)
c) State **one advantage and one limitation** of this method. (2)

Case Study 2: Presentation of Data

The sales manager of a company presents monthly sales data using a **histogram**. The data relates to continuous variables and class intervals are of equal width.

Questions:

a) Why is a histogram suitable for this data? (2)
b) State **two conditions** necessary for constructing a histogram. (2)
c) Mention **one limitation** of histogram. (1)

Case Study 3: Measures of Central Tendency

Two companies A and B pay the same average salary to their workers. However, Company A has a few very high-paid executives, while Company B pays nearly equal salaries to all employees.

Questions:

a) Which measure of central tendency is being referred to here? (1)
b) Why may the average salary be misleading in Company A? (2)
c) Suggest a more suitable measure to compare salaries and justify. (2)

Case Study 4: Correlation

A researcher studies the relationship between **advertising expenditure and sales revenue** of a firm using a scatter diagram. The plotted points show an upward trend close to a straight line.

Questions:

a) What type of correlation is shown in the diagram? (1)
b) What does the closeness of points indicate? (2)
c) State **one limitation** of scatter diagram method. (2)

B. MICRO ECONOMICS – CASE STUDY BASED QUESTIONS

Case Study 5: Consumer's Equilibrium

Rohit spends his pocket money on chocolates. As he consumes more chocolates, the satisfaction derived from each additional chocolate keeps falling. He stops purchasing chocolates when the satisfaction from the last chocolate equals its price.

Questions:

a) Identify the law explained in the case. (1)
b) Why does Rohit stop consuming chocolates at this point? (2)
c) State **two assumptions** of this law. (2)

Case Study 6: Demand and Elasticity

The government increases the price of petrol, but the quantity demanded falls only slightly. In contrast, when the price of luxury cars rises, demand falls sharply.

Questions:

a) Identify the concept highlighted in the case. (1)
b) Why is demand for petrol less responsive to price changes? (2)
c) Classify demand for luxury cars based on elasticity. (2)

Case Study 7: Production Function

A firm increases its output by employing more labour while keeping machinery fixed. Initially, output increases at an increasing rate, but later the rate of increase slows down.

Questions:

a) Name the law illustrated in this case. (1)
b) Why does output initially increase at a faster rate? (2)
c) Why does diminishing return set in later? (2)

Case Study 8: Cost and Revenue

A firm observes that when its marginal cost is lower than average cost, the average cost keeps falling. Once marginal cost rises above average cost, average cost starts rising.

Questions:

a) Explain the relationship between MC and AC. (2)
b) At what point is AC minimum? (1)
c) State **one reason** for the U-shape of AC curve. (2)

Case Study 9: Producer's Equilibrium

A competitive firm decides its level of output by comparing marginal revenue and marginal cost. It produces that level of output where profits are maximised.

Questions:

a) State the condition for producer's equilibrium using MR–MC approach. (2)
b) Why is the second condition (MC rising) necessary? (2)
c) What happens if MR > MC? (1)

Case Study 10: Perfect Competition

In a market, there are a large number of buyers and sellers selling homogeneous products. No individual firm can influence the market price.

Questions:

a) Identify the market structure. (1)
b) Why is the firm called a price taker? (2)
c) Draw the shape of AR and MR curves under this market. (2)

Worksheet No.4

A. STATISTICS – SOURCE BASED QUESTIONS

Source-Based Question 1: Collection of Data

Source:
A municipal corporation wants to study the **average household water consumption** in a city. Instead of visiting every household, it selects households from different localities such as apartments, independent houses, and slum areas in proportion to their population size.

Questions:

a) Identify the **sampling technique** used in the above case. (1)
b) Why is this technique more appropriate than simple random sampling here? (2)
c) State **one advantage and one limitation** of this method. (2)

Source-Based Question 2: Presentation & Interpretation of Data

Source:
The following data shows the distribution of marks obtained by students in an Economics test:

Marks	Number of Students
0–10	4
10–20	6
20–30	10
30–40	20
40–50	10

Questions:

a) Name the most suitable **graphical presentation** for the above data. (1)
b) Give **two reasons** for choosing this method. (2)
c) State **one conclusion** that can be drawn from the data. (2)

B. MICRO ECONOMICS – SOURCE BASED QUESTIONS

Source-Based Question 3: Consumer Behaviour

Source:
A consumer purchases units of a commodity. The satisfaction derived from each additional unit goes on declining. The consumer continues consumption till the satisfaction from the last unit equals its price.

Questions:

a) Identify the **law** explained in the above source. (1)
b) Explain why satisfaction declines with additional consumption. (2)
c) State **two assumptions** of this law. (2)

Source-Based Question 4: Demand and Elasticity

Source:
During a price rise of petrol, its demand falls marginally. However, when the price of air conditioners increases, their demand falls sharply.

Questions:

a) Which **economic concept** is highlighted in the above situation? (1)
b) Why is demand for petrol relatively inelastic? Give two reasons. (2)
c) What type of elasticity is shown by air conditioners? Explain. (2)