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Unit 1 · Concept-Based MCQs

Statements and Assertion-Reason questions on data, classification and presentation

25 MCQs

1 Consider the following statements regarding types of data:
I. Discrete data can only take specific, isolated numerical values within a range.
II. Continuous data is always the result of a counting process.
III. The number of petals on a flower is an example of discrete data.
Which of the statements above are correct?

(A) I, II, and III
(B) I and II only
(C) I and III only
(D) II and III only

2 **Assertion (A):** Secondary data is generally more economical and time-saving than primary data.
Reason (R): Secondary data is collected by the investigator for the first time for a specific purpose.
Select the correct option:

(A) Assertion (A) is false but Reason (R) is true.
(B) Assertion (A) is true but Reason (R) is false.
(C) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(D) Both (A) and (R) are true and (R) is the correct explanation of (A).

3 **In the classification of data, which type of classification is based on variables like 'Intelligence', 'Honesty', or 'Religion'?**

(A) Qualitative Classification
(B) Chronological Classification
(C) Spatial Classification
(D) Quantitative Classification

4 **Regarding the 'Exclusive Method' of class intervals (e.g., 10-20, 20-30), which statement is true?**

(A) It creates gaps between classes such as 10-19 and 20-29.
(B) It is used primarily for discrete variables only.
(C) Both the upper and lower limits are included in the same class interval.
(D) The upper limit of one class is the lower limit of the next, and the upper limit value is excluded from that class.

5 **Which of the following is the most appropriate diagram for representing the components of a single total (e.g., the breakdown of a household budget)?**

(A) Pie Diagram
(B) Line Graph
(C) Simple Bar Diagram
(D) Histogram

6 **Assertion (A):** A frequency polygon can be drawn only after constructing a histogram.
Reason (R): A frequency polygon is obtained by joining the mid-points of the tops of the rectangles in a histogram.
Select the correct option:

(A) Assertion (A) is false but Reason (R) is true.
(B) Assertion (A) is true but Reason (R) is false.
(C) Both (A) and (R) are true and (R) is the correct explanation of (A).
(D) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).

7 **In a 'Less Than' Ogive, the cumulative frequencies are plotted against:**

(A) The upper limits of the class intervals.
(B) The mid-points of the class intervals.
(C) The frequency of each class.
(D) The lower limits of the class intervals.

8 **A 'Statistical Series' in which the variable is measured in exact units and frequencies are assigned to individual values (not intervals) is called:**

(A) Continuous Series
(B) Discrete Series
(C) Individual Series
(D) Time Series

9 **When constructing a table, the 'Stub' refers to:**

(A) The left-hand column containing row captions.
(B) The title explaining the content of the table.
(C) The headings of the columns.
(D) The main body of numerical information.

10 Consider these statements on Diagrammatic Representation:
I. Diagrams are more accurate than tables for detailed statistical analysis.
II. Diagrams help in identifying the hidden trends in data effectively.
III. Logarithmic charts are used when the relative rate of change is more important than absolute change.
Which are correct?

(A) I, II, and III
(B) I and II only
(C) II and III only
(D) I and III only

11 **Assertion (A):** In a continuous frequency distribution, the class marks are used to represent the entire class for further calculations.
Reason (R): The class mark is the arithmetic mean of the upper and lower limits of a class interval.
Select the correct option:

(A) Assertion (A) is false but Reason (R) is true.
(B) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(C) Both (A) and (R) are true and (R) is the correct explanation of (A).
(D) Assertion (A) is true but Reason (R) is false.

12 **Which of the following statements regarding 'Inclusive' class intervals (e.g., 10-19, 20-29) is INCORRECT?**

(A) To convert it to an exclusive series, 0.5 is subtracted from the lower limit and added to the upper limit.
(B) There is a gap between the upper limit of one class and the lower limit of the next.
(C) The inclusive method is preferred for continuous variables to ensure no data point is left out.
(D) The upper limit of a class is included in the frequency count of that specific class.

13 Consider these statements on Tabulation:
I. A table must always have a Source Note if the data is primary.
II. The 'Head-note' is a brief explanatory statement given just below the title to provide additional detail like units of measurement.
III. Tables are better than diagrams for presenting precise numerical values.
Which of the above are correct?

(A) I, II, and III
(B) II and III only
(C) I and III only
(D) I and II only

14 **An 'Open-end' class is one where:**

(A) The lower limit of the first class or the upper limit of the last class is not specified.
(B) The frequency of the class is zero.
(C) The class allows for both discrete and continuous data types.
(D) The class interval is varying throughout the distribution.

15 **Assertion (A):** A Histogram can be used to graphically determine the value of the Median.
Reason (R): The Median is the point where the 'Less than' and 'More than' ogives intersect.
Select the correct option:

(A) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(B) Assertion (A) is false but Reason (R) is true.
(C) Assertion (A) is true but Reason (R) is false.
(D) Both (A) and (R) are true and (R) is the correct explanation of (A).

16 **When class intervals are unequal, the heights of the rectangles in a histogram must be adjusted by calculating the:**

(A) Frequency Density
(B) Mid-point Frequency
(C) Relative Frequency
(D) Cumulative Frequency

17 **Which diagrammatic representation is most effective for comparing the growth rates of two different populations over 20 years?**

(A) Histogram
(B) Component Bar Diagram
(C) Circular Diagram
(D) Multiple Time Series Graph

18 **In a statistical table, what is the 'Field' or 'Body' of the table?**

(A) The space provided for footnotes.
(B) The description of the column categories.
(C) The entire area containing the actual numerical data.
(D) The description of the row categories.

19 **If a researcher organizes data on the 'Number of Workers' according to different 'Sectors of the Economy' (Agriculture, Industry, Services), this is an example of:**

(A) Chronological Classification
(B) Qualitative Classification
(C) Spatial Classification
(D) Quantitative Classification

20 **Assertion (A):** A pie diagram is also known as a component-part circle diagram.
Reason (R): The total area of the circle is divided into sectors proportional to the values of the components.
Select the correct option:

(A) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(B) Both (A) and (R) are true and (R) is the correct explanation of (A).
(C) Assertion (A) is true but Reason (R) is false.
(D) Assertion (A) is false but Reason (R) is true.

21 Identify the correct statements regarding a 'Continuous Series':
I. It is formed when the variable can take any fractional value within a range.
II. The data is grouped into class intervals.
III. It is also known as a 'Frequency Array'.
Which combination is correct?

(A) All are correct
(B) II and III are correct
(C) I and III are correct
(D) I and II are correct

22 Which of the following are prerequisites for a 'Good Table' in statistics?
1. A brief and self-explanatory Title.
2. Use of 'N.A.' for data that is not available.
3. The units of measurement must be clearly mentioned, usually in the Head-note.
Select the correct option:

(A) 1, 2, and 3 are correct
(B) 2 and 3 only
(C) 1 and 2 only

23 **Assertion (A):** A Histogram can never be drawn for an 'Open-End' distribution without making an assumption.
Reason (R): In a Histogram, the width of the rectangle represents the class interval, and open-end classes lack one limit.
Select the correct option:

(A) Assertion (A) is true but Reason (R) is false.
(B) Assertion (A) is false but Reason (R) is true.
(C) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(D) Both (A) and (R) are true and (R) is the correct explanation of (A).

24 Evaluate these statements on 'Spatial Classification':
I. Data is classified based on geographical areas like states or countries.
II. It is also known as Chorological classification.
III. Organizing data by 'Years' is a form of spatial classification.
Which of the following is correct?

(A) II and III are correct
(B) I and II are correct
(C) I and III are correct
(D) All are correct

25 **Which of the following diagrams can be used to locate the 'Mode' of a frequency distribution graphically?**

(A) Line Graph
(B) Histogram
(C) Ogive
(D) Pie Chart



Unit 2 · Statistics in General

Definitions, errors, populations, surveys and approximation of figures

40 MCQs

1 **The statement, "Statistics is both a science and an art", was given by:**

(A) R.A. Fisher **(B)** Tippet
(C) L.R. Connor **(D)** A.L. Bowley

2 **Who stated that statistics is a branch of applied mathematics which specialises in data?**

(A) Horace Secrist **(B)** R.A. Fisher
(C) Ya-lun-chou **(D)** L.R. Connor

3 **The word 'statistics' is used as:**

(A) Singular **(B)** Plural
(C) Singular and plural both **(D)** None of the above

4 **"Statistics provides tools and techniques for research workers", was stated by:**

(A) John I. Griffin **(B)** W.I. King
(C) A.M. Mood **(D)** A.L. Boddington

5 **Out of various definitions given by the following workers, which definition is considered to be most exact?**

(A) R.A. Fisher **(B)** A.L. Bowley
(C) M.G. Kendall **(D)** Cecil H. Meyers

6 **Who stated that there are three kinds of lies: lies, damned lies and statistics?**

(A) Mark Twain **(B)** Disraeli
(C) Darrell Huff **(D)** None of the above

7 **Who gave the statement, "A well wrapped statistics is better than Hitler's 'big lie', it misleads, yet it cannot be pinned on you."?**

(A) Mark Twain **(B)** W.A. Neiswanger
(C) Darrell Huff **(D)** G.W. Snedecor

8 **Which of the following represents data?**

(A) A single value **(B)** Only two values in a set
(C) A group of values in a set **(D)** None of the above

9 **Statistics deals with:**

(A) Qualitative information **(B)** Quantitative information
(C) Both (a) and (b) **(D)** None of (a) and (b)

10 **Statistical results are:**

(A) Cent per cent correct **(B)** Not absolutely correct
(C) Always incorrect **(D)** Misleading

11 **If 'a' is the actual value and 'e' is its estimated value, the absolute error is:**

(A) $a - e$ **(B)** $|a - e|$
(C) a/e **(D)** $(a - e)/e$

12 **If 'a' is the actual value and 'e' is its estimated value, the formula for relative error is:**

(A) a/e **(B)** $(a - e)/e$
(C) $|a - e|/e$ **(D)** $(a - e)/a$

13 **Data taken from the publication 'Agricultural Situation in India' will be considered as:**

(A) Primary data **(B)** Secondary data
(C) Primary and secondary data **(D)** Neither primary nor secondary data

14 **Mailed questionnaire method of enquiry can be adopted if respondents:**

(A) Live in cities **(B)** Have high income
(C) Are educated **(D)** Are known

15 **The statement, "Designing of an appropriate questionnaire itself wins half the battle", was given by:**

(A) A.R. Ilersic **(B)** W.I. King
(C) H. Huge **(D)** H. Secrist

16 **Statistical data are collected for:**

(A) Collecting data without any purpose **(B)** A given purpose
(C) Any purpose **(D)** None of the above

17 **Relative error is always:**

(A) Positive **(B)** Negative
(C) Positive and negative both **(D)** Zero

18 **Statistical error refers to:**

(A) Original value − Approx. value
(B) Actual value − Estimated value
(C) (Actual value − Estimated value) / Estimated value
(D) (Actual value − Estimated value) / Actual value

19 **Method of complete enumeration is applicable for:**

(A) Knowing the production
(B) Knowing the quantum of export and import
(C) Knowing the population
(D) All the above

20 **A statistical population may consist of:**

(A) An infinite number of items
(B) A finite number of items
(C) Either of (a) and (b)
(D) None of (a) and (b)

21 **Which of the following examples does not constitute an infinite population?**

(A) Population consisting of odd numbers
(B) Population of weights of newly born babies
(C) Population of heights of 15-year-old children
(D) Population of heads and tails in tossing a coin successively

22 **Which of the following can be classified as hypothetical population?**

(A) All labourers of a factory
(B) Female population of a country
(C) Population of real numbers between 0 and 100
(D) Students of the world

23 **A study based on complete enumeration is known as:**

(A) Sample survey
(B) Pilot survey
(C) Census survey
(D) None of the above

24 **If the actual value of a unit is 415 and its estimated value is 400, the absolute error is:**

(A) −15
(B) 15
(C) 0.0375
(D) −0.0361

Unit 3 · Classification & Tabulation

Presentation of data, class intervals, frequency distributions and types of series

42 MCQs

Section A · Practice MCQs

1 **Numerical data presented in descriptive form are called:**

(A) Classified presentation **(B)** Tabular presentation
(C) Graphical presentation **(D)** Textual presentation

2 **Whether classification is done first or tabulation?**

(A) Classification follows tabulation. **(B)** Classification precedes tabulation.
(C) Both are done simultaneously. **(D)** No criterion.

3 For the mid-values given below: 25, 34, 43, 53, 61, 70
The first class of the distribution is:

(A) 24.5-34.5 **(B)** 25-34
(C) 20-30 **(D)** 20.5-29.5

4 **In an exclusive type distribution, the limits excluded are:**

(A) Lower limits **(B)** Upper limits
(C) Either of the lower or upper limit **(D)** Lower limit and upper limits both

5 **A series showing the sets of all distinct values individually with their frequencies is known as:**

(A) Grouped frequency distribution **(B)** Simple frequency distribution
(C) Cumulative frequency distribution **(D)** None of the above

6 **A series showing the sets of all values in classes with their corresponding frequencies is known as:**

(A) Grouped frequency distribution **(B)** Simple frequency distribution
(C) Cumulative frequency distribution **(D)** None of the above

7 **If the number of students in a school is 200 and maximum and minimum marks earned are 90 and 10 respectively, for the distribution of marks, the class interval (rounded) is: [Given $\log_{10} 2 = 0.3010$, $\log_{10} 3 = 0.4771$]**

(A) 10 **(B)** 9
(C) 12 **(D)** None of above

8 **If the lower and upper limits of a class are 10 and 40 respectively, the mid-point of the class is:**

(A) 25.0 **(B)** 12.5
(C) 15.0 **(D)** 30.0

9 **In a grouped data, the number of classes preferred are:**

(A) Minimum possible **(B)** Adequate
(C) Maximum possible **(D)** Any arbitrarily chosen number

10 **Class interval is measured as:**

(A) The sum of the upper and lower limit
(B) Half of the sum of lower and upper limit
(C) Half of the difference between upper and lower limit
(D) The difference between upper and lower limit

11 **The class interval of the continuous grouped data 10-19, 20-29, 30-39, 40-49, 50-59 is:**

(A) 9 **(B)** 10
(C) 14.5 **(D)** 4.5

12 **A grouped frequency distribution with uncertain first or last classes is known as:**

(A) Exclusive class distribution **(B)** Inclusive class distribution
(C) Open end distribution **(D)** Discrete frequency distribution

13 **The following distribution is of the type:**

Values	Frequency
Less than 5	5
Less than 10	12
Less than 15	21
Less than 20	27
Less than 25	31
Less than 30	33

(A) Inclusive class type **(B)** Exclusive class type
(C) Discrete type **(D)** None of the above

14 **Data can be well displayed or presented by way of:**

(A) Stem and leaf display **(B)** Cross classification
(C) Two or more dimensional table **(D)** All the above

15 **A simple table represents:**

(A) Only one factor or variable
(B) Always two factors or variables
(C) Two or more number of factors or variables
(D) All the above

16 **A complex table represents:**

(A) Only one factor or variable
(B) Always two factors or variables
(C) Two or more factors or variables
(D) All the above

17 **The headings of the rows given in the first column of a table are called:**

(A) Stubs
(B) Captions
(C) Titles
(D) Prefatory notes

18 **The column headings of a table are known as:**

(A) Sub-titles
(B) Stubs
(C) Reference notes
(D) Captions

19 **The following series is of the type:**

Place	No. of accidents per day
Delhi	10
Kolkata	15
Mumbai	18
Chennai	17
Indore	7

(A) Spatial
(B) Geographical
(C) Industrial
(D) Time series

20 **The following series is categorised as:**

Year	Production of food (M. Tonnes)
1987	160
1988	168
1989	170
1990	172
1991	174
1992	176

(A) Individual series
(B) Continuous series
(C) Discrete series
(D) Time series

21 **The income of five persons is as follows. The series is of the type:**

Person	Income (Rs/Month)
Mr A	1,700
Mr B	2,300
Mr C	7,000
Mr D	8,500
Mr E	5,400

(A) Individual series
(B) Discrete series
(C) Continuous series
(D) Time series

22 **The following series is of the type:**

Marks	No. of Students
20-30	5
30-40	14
40-50	24
50-60	12
60-70	9
70-80	2

(A) Discrete series
(B) Continuous series
(C) Individual series
(D) None of the above

23 **A frequency distribution can be:**

(A) Discrete
(B) Continuous
(C) Both (a) and (b)
(D) None of (a) and (b)

24 **In an individual series, each variate value:**

(A) Has same frequency
(B) Has frequency one
(C) Has varied frequency
(D) Has frequency two

25 **Which of the following statements is true?**

(A) An individual series is a particular case of discrete series
(B) An individual series is a particular case of continuous series
(C) An individual series is a special case of discrete and continuous series
(D) There is nothing like individual series

26 **Frequency of a variable is always:**

(A) In percentage
(B) A fraction
(C) An integer
(D) None of the above

27 **The data given as 5, 7, 12, 17, 79, 84, 91 will be called as:**

(A) A continuous series
(B) A discrete series
(C) An individual series
(D) Time series

28 **The following frequency distribution is classified as:**

x	12	17	24	36	45	48	52
f	2	5	3	8	9	6	1

(A) Continuous distribution
(B) Discrete distribution
(C) Cumulative frequency distribution
(D) None of the above

29 **In an ordered series, the data are:**

(A) In ascending order
(B) In descending order
(C) Either (a) or (b)
(D) Neither (a) nor (b)

30 **The following frequency distribution is known as:**

Classes	Frequency
0-10	3
0-20	8
0-30	14
0-40	20
0-50	25

(A) Continuous frequency distribution
(B) Discrete frequency distribution
(C) Cumulative distribution in more than type
(D) Cumulative distribution in less than type

31 **The following frequency distribution is classified as:**

Classes	Frequency
0-15	17
0-10	8
0-5	3

(A) Cumulative distribution in less than type
(B) Cumulative distribution in more than type
(C) Discrete frequency distribution
(D) Cumulative frequency distribution

32 **Classification is applicable in case of:**

(A) Quantitative characters
(B) Qualitative characters
(C) Both (a) and (b)
(D) None of the above

Section B · JKSSB Statement-Type MCQs · Classification & Tabulation

33 **Consider the following statements:**
i. Classification arranges data into homogeneous groups.
ii. It makes data simple and comparable.
iii. It increases the volume of the data.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

34 **Consider the following statements:**
i. Classification of data by time is called geographical classification.
ii. Classification by attributes is called qualitative classification.
iii. Classification by class intervals is quantitative classification.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) ii, iii only
(D) i, ii, iii

35 **Consider the following statements:**
i. Stub is the row heading of a table.
ii. The footnote contains the main title of the table.
iii. Caption is the column heading of a table.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, ii only
(D) i, iii only

36 **Consider the following statements:**
i. Tabulation is the systematic arrangement of data in rows and columns.
ii. A good table has a clear title and units.
iii. Tabulation facilitates comparison.
Which of the above statements are correct?

(A) i, ii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

37 **Consider the following statements:**
i. A table showing one characteristic is a simple table.
ii. A table of population by sex and literacy is a simple table.
iii. Manifold tables show only one characteristic.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) iii only
(D) ii, iii only

38 **Consider the following statements:**
i. Classification is done after tabulation.
ii. Classification precedes tabulation.
iii. Tabulation is the first step in data collection.
Which of the above statements are correct?

(A) ii only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

39 **Consider the following statements:**
i. Sturges' rule is k = 1 + 3.322 log N.
ii. For N = 64 the number of classes is 7.
iii. For N = 16 the number of classes is 4.
iv. Sturges' rule gives the class width directly.
Which of the above statements are correct?

(A) i, ii only
(B) i, iv only
(C) iii, iv only
(D) i, ii and iii only

40 **Consider the following statements:**
i. Yearly sales of a firm arranged year-wise is chronological classification.
ii. Geographical classification arranges data by time.
iii. Grouping students by marks ranges is quantitative classification.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) i, ii, iii

41 **Consider the following statements:**
i. A table must never carry a source note.
ii. Footnotes explain exceptions or special points in a table.
iii. The title of a table should be clear and concise.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) ii, iii only
(D) i, ii, iii

42 **Consider the following statements:**
i. Stub heads are written along the columns.
ii. Classification by attributes uses class intervals.
iii. Religion-wise grouping of population is qualitative classification.
Which of the above statements are correct?

(A) i only
(B) iii only
(C) i, iii only
(D) i, ii, iii

Unit 4 · Diagrammatic & Graphical Representation

70 MCQs

Charts, graphs, bar diagrams, histograms, ogives, pie charts and pictograms

Section A · Practice MCQs

1 **Charts and graphs are the presentation of numerical facts by means of:**

(A) Points and lines
(B) Area and other geometrical forms
(C) Symbols
(D) All the above

2 **Graphs and charts facilitate:**

(A) Comparison of values
(B) To know the trend
(C) To know relationship
(D) All the above

3 **The purpose served by diagrams and charts is:**

(A) Simple presentation of data
(B) To avoid tabulation
(C) To avoid textual form
(D) All the above

4 **Choice of a particular chart depends on:**

(A) The purpose of study
(B) The nature of data
(C) The type of audience
(D) All the above

5 **Rectilinear co-ordinate chart is also referred as:**

(A) Cartesian co-ordinate graph
(B) Rectangular graph
(C) Both (a) and (b)
(D) None of (a) and (b)

6 **Trilinear chart is used to portray simultaneously:**

(A) Two variables
(B) Three variables
(C) Four variables
(D) Any number of variables

7 **The shape of a trilinear chart is that of a:**

(A) Cone
(B) Cube
(C) Equilateral triangle
(D) Pyramid

8 **Which of the following is a one-dimensional diagram?**

(A) Bar diagram
(B) Pie-chart
(C) Cylinder
(D) A graph

9 **Which of the following is not a two-dimensional diagram?**

(A) Square diagram
(B) Multiple bar diagram
(C) Rectangular diagram
(D) Pie-chart

10 **Which of the following statements is not correct?**

(A) The bars in a histogram touch each other
(B) The bars in a column chart touch each other
(C) There are bar diagrams which are known as broken bar diagrams
(D) Multiple bar diagrams also exist

11 **Non-dimensional diagrams are also known as:**

(A) Cubes
(B) Spheres
(C) Pictograms
(D) All the above

12 **Which of the statements is correct?**

(A) Histograms and historigrams are similar in look
(B) Cube and square diagrams are similar in look
(C) Pie-chart and ogives
(D) None of the above

13 **Ogive curve occurs for:**

(A) More than type distribution
(B) Less than type distribution
(C) Both (a) and (b)
(D) None of (a) and (b)

14 **In an ogive curve, the points are plotted for:**

(A) The values and frequencies
(B) The values and cumulative frequencies
(C) Frequencies and cumulative frequencies
(D) None of the above

15 **A semi-logarithmic graph or ratio chart is obtained by plotting the points:**

(A) (x, y)
(B) (log x, log y)
(C) (x, log y)
(D) (x, log y/x)

16 **Ogives for more than type and less than type distributions intersect at:**

(A) Mean
(B) Median
(C) Mode
(D) Origin

17 **When the values are large in magnitude in a chronological series and variation amongst values is small, a graph is better drawn by choosing:**

(A) A false base line
(B) Wide scale
(C) Narrow scale
(D) None of the above

18 **In a bar diagram, the base line is:**

(A) Horizontal
(B) Vertical
(C) False base line
(D) Any of the above

19 **In a column chart, the base line is:**

(A) Horizontal
(B) Vertical
(C) At an angle of 45°
(D) False base line

20 **In a column chart, bars are:**

(A) Horizontal
(B) Vertical
(C) Slanting
(D) None of the above

21 **In a bar diagram, the bars are:**

(A) Horizontal
(B) Vertical
(C) Slanting
(D) None of the above

22 **In case of frequency distribution with classes of unequal widths, the heights of bars of a histogram are proportional to:**

(A) Class frequency
(B) Class intervals
(C) Frequencies in percentage
(D) Frequency densities

23 **Yearwise production of rice, wheat and maize for the last ten years can be displayed by:**

(A) Simple column chart
(B) Subdivided column chart
(C) Broken bar diagram
(D) Multiple column chart

24 **Profit and loss of a firm during various years can be displayed through:**

(A) Simple bar diagram
(B) Duo-directional bar diagram
(C) Deviation bar chart
(D) Multiple bar diagram

25 **When for some countries the magnitudes are small and for others the magnitudes are very large, to portray the data it is preferred to construct:**

(A) Deviation bar diagram
(B) Duo-directional bar diagram
(C) Broken bar diagram
(D) Any of the above

26 **With the help of histogram we can prepare:**

(A) Frequency polygon
(B) Frequency curve
(C) Frequency distribution
(D) All the above

27 **Historigram is suitable for:**

(A) Time series data
(B) Chronological distribution
(C) None of (a) or (b)
(D) Both (a) and (b)

28 **When we have the number of court cases of different categories and information about number of cases settled, the information can be better portrayed through:**

(A) Sliding bar diagram
(B) Histogram
(C) Paired bar diagram
(D) Column chart

29 **To show the maximal and minimal values in a time series, the suitable chart is:**

(A) Deviation bar diagram
(B) Range curve
(C) Historigram
(D) All the above

30 **With the help of ogive curve, one can determine:**

(A) Median
(B) Deciles
(C) Percentiles
(D) All the above

31 **Lorenz curve is an indicator for the distribution of two factors:**

(A) Being equal
(B) Being unequal
(C) Both (a) and (b)
(D) Neither (a) nor (b)

32 **Greater the distance of Lorenz curve from the line of equal distribution:**

(A) More is the inequality
(B) Less is the inequality
(C) Has to tell nothing about inequality
(D) None of the above

33 **Pictograms are:**

(A) Very accurate
(B) Least accurate
(C) Mostly used
(D) Scientifically correct

42 **When there is a pronounced skewness, the desirable scale to plot the frequency distribution is:**

(A) Arithmetic scale **(B)** Multiple scale
(C) Logarithmic scale **(D)** Any of the above

43 **When there are a large number of values in an individual series, preference for portraying the data goes to:**

(A) Bar diagram **(B)** Column chart
(C) Line chart **(D)** Scatter diagram

44 **An alternative chart to pie-chart is:**

(A) Step bar diagram **(B)** Rectangular chart
(C) Sphere **(D)** None of the above

45 **The graph of the successive points of a distribution joined by straight lines in statistical terminology is known as:**

(A) Frequency distribution **(B)** Frequency curve
(C) Trend **(D)** Cumulative distribution curve

46 **A deviational or bilateral chart with 100 per cent component columns is also known as:**

(A) Duo-directional chart **(B)** Floating column chart
(C) Sub-divided column chart **(D)** Range chart

47 **Pie-chart represents the components of a factor by:**

(A) Percentages **(B)** Angles
(C) Sectors **(D)** Circles

48 **The immigration and outmigration of people in a number of countries and also the net migration can be better displayed by:**

(A) Duo-directional column chart **(B)** Gross-deviation column chart
(C) Net deviation column chart **(D)** Range chart

49 **Common form of rectilinear co-ordinate graph is:**

(A) Band chart **(B)** Surface chart
(C) Stratum chart **(D)** All the above

50 **An arithmetic chart can:**

(A) Have only one amount scale
(B) Have multiple amount scale
(C) Be without any amount scale
(D) None of the above

51 **It is necessary to find cumulative frequencies in order to draw a/an:**

(A) Histogram
(B) Frequency polygon
(C) Ogive curve
(D) Column chart

52 **If we plot the points of a less than type or more than type frequency distribution, the shape of graph is:**

(A) Ogive curve
(B) Scatter diagram
(C) Zig-zag curve
(D) Parabola

53 **Histogram is suitable for the data presented as:**

(A) Continuous grouped frequency distribution
(B) Discrete grouped frequency distribution
(C) Individual series
(D) All the above

54 **A histogram can be drawn for the distribution with unequal class intervals by considering:**

(A) Class frequency
(B) Height of bars proportional to class intervals
(C) Height of bars proportional to frequency density
(D) All the above

55 **In a histogram with equal class intervals, heights of bar are proportional to:**

(A) Mid-values of the classes
(B) Frequencies of respective classes
(C) Either (a) or (b)
(D) Neither (a) nor (b)

56 **The data relating to the number of registered allopathic and homeopathic doctors in six different states can be most appropriately represented by diagram:**

(A) Line graph
(B) Histogram
(C) Pie-diagram
(D) Double bar diagram

57 **Histogram can be used only when:**

(A) Class intervals are equal or unequal
(B) Class intervals are all equal
(C) Class intervals are unequal
(D) Frequencies in class interval are equal

58 **The most appropriate diagram to represent the data relating to the monthly expenditure on different items by a family is:**

(A) Histogram **(B)** Pie-diagram
(C) Frequency polygon **(D)** Line graph

59 **The gross income, taxes and net income of a manufacturer during different years can better be represented by:**

(A) Deviation bar diagram **(B)** Broken bar diagram
(C) Paired bar diagram **(D)** Duo-directional bar diagram

60 **Proportion of males and females in India in different occupations in the year 2000 can most properly be represented by:**

(A) Sliding bar diagram **(B)** Deviation bar diagram
(C) Sub-divided bar diagram **(D)** Multiple bar diagram

Section B · JKSSB Statement-Type MCQs · Graphical Methods (with Numericals)

61 **Consider the following statements:**
i. A histogram is drawn with adjacent rectangles for a continuous series.
ii. The mode can be located graphically from a histogram.
iii. A frequency polygon is obtained by joining the upper limits of the classes.
Which of the above statements are correct?

(A) ii only **(B)** i, ii only
(C) i, iii only **(D)** ii, iii only

62 **Consider the following statements:**
i. An ogive is a graph of class frequencies.
ii. The less-than and more-than ogives intersect at the median.
iii. An ogive is drawn using class limits and cumulative frequencies.
Which of the above statements are correct?

(A) ii only **(B)** i, ii only
(C) i, iii only **(D)** ii, iii only

63 **Consider the following statements:**
i. A pie chart shows the component parts of a whole.
ii. A pie chart is a one-dimensional diagram.
iii. The total angle at the centre of a pie chart is 360°.
Which of the above statements are correct?

(A) ii only
(B) i, ii only
(C) i, iii only
(D) i, ii, iii

64 **A household budget of Rs 48,000: Food 18,000; Rent 12,000; Education 6,000; Savings 9,000; Others 3,000. It is shown in a pie chart. Consider the following statements:**
i. The angle for Food is 135°.
ii. The angle for Rent is 90°.
iii. The angle for Savings is 72°.
iv. The angle for Others is 22.5°.
Which of the above statements are correct?

(A) i, iii only
(B) i, ii and iii only
(C) i, ii and iv only
(D) i, ii, iii and iv

65 **A bar graph shows wheat production (thousand tonnes): 2019: 40, 2020: 50, 2021: 45, 2022: 65, 2023: 60. Consider the following statements:**
i. The average production is 52 thousand tonnes.
ii. Production increased by 25% from 2019 to 2020.
iii. The maximum increase over the previous year was in 2023.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, ii only
(D) i, iii only

66 **A graph shows rice production (lakh tonnes): 2018: 20, 2019: 25, 2020: 22, 2021: 30, 2022: 33. Consider the following statements:**
i. The average production is 25 lakh tonnes.
ii. Production in 2020 fell compared with 2019.
iii. The percentage increase from 2018 to 2022 is 65%.
Which of the above statements are correct?

(A) iii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

67 **A line graph shows exports (Rs crore) for Jan–Jun: 120, 140, 100, 160, 180, 150. Consider the following statements:**
i. Exports were highest in May.
ii. The fall from February to March was Rs 40 crore.
iii. The average monthly exports are Rs 150 crore.
iv. The percentage fall from February to March is about 28.6%.
Which of the above statements are correct?

(A) i, ii only
(B) i, iv only
(C) ii, iii only
(D) i, ii and iv only

68 **A histogram shows classes and frequencies: 0–10: 5; 10–20: 12; 20–30: 20; 30–40: 8; 40–50: 5. Consider the following statements:**
i. The modal class is 20–30.
ii. The number of observations below 30 is 37.
iii. The median class is 10–20.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

69 **Consider the following statements:**
i. A Lorenz curve is used to show the inequality of income distribution.
ii. A pictogram uses pictures to represent data.
iii. A line graph is unsuitable for time series data.
iv. Bar diagrams are one-dimensional diagrams.
Which of the above statements are correct?

(A) i, ii only
(B) i, iv only
(C) ii, iii only
(D) i, ii and iv only

70 **A school's results: 2020: 200 appeared, 150 passed; 2021: 250 appeared, 200 passed; 2022: 300 appeared, 210 passed. Consider the following statements:**
i. The pass percentage in 2020 is 75%.
ii. The pass percentage in 2021 is 80%.
iii. The pass percentage in 2022 is 70%.
iv. The pass percentage was highest in 2022.
Which of the above statements are correct?

(A) i, ii only
(B) ii, iv only
(C) i, ii and iii only
(D) i, iii and iv only



Unit 5 · Collection of Data

Primary and secondary data, surveys and marketing research

31 MCQs

Section A · Practice MCQs

1 **Primary data for the research process can be collected through _____.**

(A) Experiment
(B) Survey
(C) Both a and b
(D) None of the above

2 **The data obtained by conducting a survey is called:**

(A) Primary data
(B) Secondary data
(C) Continuous data
(D) Qualitative data

3 **The data collected from published reports is known as:**

(A) Discrete data
(B) Arrayed data
(C) Secondary data
(D) Primary data

4 **A survey in which information is collected from each and every individual of the population is known as:**

(A) Sample survey
(B) Pilot survey
(C) Biased survey
(D) Census survey

5 **Data used by an agency which originally collected them are:**

(A) Primary data
(B) Raw data
(C) Secondary data
(D) Grouped data

6 **Which form of data below can usually be obtained more quickly and at a lower cost than the others?**

(A) Primary
(B) Survey research
(C) Experimental research
(D) Secondary

7 **Secondary data are _____.**

(A) Collected mostly via surveys
(B) Expensive to obtain
(C) Never purchased from outside suppliers
(D) Not always very usable

8 **Secondary data consists of information _____.**

(A) That already exists somewhere and was collected for another purpose
(B) Used by competitors
(C) That does not currently exist in an organised form
(D) That already exists somewhere and is outdated

9 **Which of the following represents data?**

(A) A single value
(B) Only two values in a set
(C) A group of values in a set
(D) None of the above

10 **Which method could a marketing researcher use to obtain information that people are unwilling or unable to provide?**

(A) Focus groups
(B) Personal interviews
(C) Questionnaires
(D) Observational research

11 **Survey research is least likely to be conducted through which of the following?**

(A) Observation
(B) Person-to-person interactions
(C) The telephone
(D) The Web

12 **In marketing research, the _____ phase is generally the most expensive and most subject to error.**

(A) Interpreting and reporting the findings
(B) Data validation
(C) Data collection
(D) Planning

13 **Marketing intelligence is everyday information about developments in the marketing environment that assists marketers in their preparation of their plans and strategies. This information is obtained from a number of sources and includes which of the following?**

(A) Newspaper articles
(B) Sales representative feedback
(C) Competitor intelligence
(D) All of the above

14 **What are three popular methods for obtaining primary data?**

(A) Experimentation; personal interview; Delphi technique
(B) Survey; interviews; experimentation
(C) Interviews and surveys; observation; experimentation
(D) Interviews and surveys; observation; Harrison methodology

15 **Primary data is _____.**

(A) Always collected before secondary data
(B) Collected for the specific purpose at hand
(C) Information that already exists
(D) Data collected for other purposes

16 **For primary data to be useful to marketers, it must be relevant, current, unbiased, and _____.**

(A) Complete
(B) Accurate
(C) Inexpensive
(D) Collected before secondary data

17 **_____ method is the gathering of primary data by watching people.**

(A) Survey
(B) Informative
(C) Observational
(D) Experimental

18 **Interview is an example of _____ data.**

(A) Primary
(B) Secondary
(C) Both a and b
(D) None of the above

19 **The existing company information is an example of which data?**

(A) Primary
(B) Secondary
(C) Both a and b
(D) None of the above

20 **Information collected from online databases is an example of _____ data.**

(A) Primary
(B) Secondary
(C) Observational
(D) Experimental

21 **Some of the advantages of secondary data are low cost, speed, availability, and flexibility.**

(A) True
(B) False

Section B · JKSSB Statement-Type MCQs · Primary & Secondary Data

22 **Consider the following statements:**
i. Primary data are original in character.
ii. Secondary data are collected by someone else for another purpose.
iii. Primary data is always cheaper than secondary data.
Which of the above statements are correct?

(A) i, ii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

23 **Consider the following statements:**
i. Data collected by a department through its own survey are always secondary data for that department.
ii. Data published in the RBI Bulletin are secondary data for the user.
iii. Secondary data are generally quicker to obtain than primary data.
Which of the above statements are correct?

(A) ii only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

24 **Consider the following statements:**
i. Primary data may be collected by observation, interview or questionnaire.
ii. Secondary data may come from published or unpublished sources.
iii. The reliability of secondary data should be checked before use.
Which of the above statements are correct?

(A) ii only
(B) i, ii only
(C) i, iii only
(D) i, ii, iii

25 **Consider the following statements:**
i. Primary data give the investigator control over the quality of data collected.
ii. Secondary data are always more accurate than primary data.
iii. Newspaper reports on industrial production, used by a researcher, are secondary data.
Which of the above statements are correct?

(A) ii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

26 **Consider the following statements:**
i. Raw data collected directly by NSO are secondary data for NSO itself.
ii. The same data may be primary for the collector and secondary for a later user.
iii. Secondary data cannot be obtained from unpublished sources.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, ii only
(D) i, iii only

27 **Consider the following statements:**
i. Primary data are collected specifically for the enquiry at hand.
ii. Collecting primary data needs more time and resources.
iii. Secondary data are derived from data collected earlier by others.
iv. Secondary data never need editing or scrutiny.
Which of the above statements are correct?

(A) i, ii only
(B) i, iii only
(C) i, iv only
(D) i, ii and iii only

28 **Consider the following statements:**
i. The Statistical Abstract of J&K; is a source of secondary data.
ii. Data from a personal interview conducted by the investigator are secondary data.
iii. Data from a pilot survey conducted by the researcher himself are secondary data.
Which of the above statements are correct?

(A) i only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

29 **Consider the following statements:**
i. Primary data are always numerical.
ii. Secondary data can be qualitative or quantitative.
iii. Primary data may be collected through questionnaires sent by post.
Which of the above statements are correct?

(A) ii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

30 **Consider the following statements:**
i. Suitability, reliability and adequacy are checked before using secondary data.
ii. Primary data collected with trained enumerators and care tend to be more reliable.
iii. Secondary data are always free from errors.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

31 **Consider the following statements:**
i. A student using tables from Census of India 2011 reports is collecting primary data.
ii. Secondary data are collected by the user directly from respondents.
iii. Primary data are first-hand information.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) iii only
(D) i, ii, iii

Unit 6 · Survey & Research Methods

Survey research, primary data, secondary data and contact methods

27 MCQs

Section A · Practice MCQs

1 **Which method could a marketing researcher use to obtain information that people are unwilling or unable to provide?**

(A) Focus groups
(B) Personal interviews
(C) Questionnaires
(D) Observational research

2 **Survey research, though used to obtain many kinds of information in a variety of situations, is best suited for gathering _____ information.**

(A) Attitudinal
(B) Personal
(C) Preference
(D) Descriptive

3 **Survey research is least likely to be conducted through which of the following?**

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(B) Person-to-person interactions
(C) The telephone
(D) The Web

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(D) Experimental

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(D) None of the above

12 **Information collected from online databases is an example of _____ data.**

(A) Primary
(B) Secondary
(C) Observational
(D) Experimental

13 **Some of the advantages of secondary data are low cost, speed, availability, and flexibility.**

(A) True
(B) False

14 **To verify the quality of secondary data information, it may be necessary to know how the data were collected, what the sampling plan was, what data collection method was used, and what degree of nonresponse was experienced.**

(A) True
(B) False

15 **Providing the background necessary to understand the problem situation is a common use for:**

(A) Primary data **(B)** Secondary data
(C) Exploratory data **(D)** Explanatory data

16 **If time is of the essence for a research project, the preferred contact method is:**

(A) Mail **(B)** Telephone
(C) Intercept interview **(D)** Personal interview

17 **If flexibility is the most important criterion for a research project, the preferred contact method is:**

(A) Intercept interview **(B)** Telephone
(C) Focus group **(D)** Personal interview

Section B · JKSSB Statement-Type MCQs · Methods of Collecting Data

18 **Consider the following statements:**
i. In direct personal interview the investigator meets respondents face to face.
ii. It is suitable when the area of enquiry is limited.
iii. It is the cheapest method for widely scattered areas.
Which of the above statements are correct?

(A) i only **(B)** ii only
(C) i, ii only **(D)** ii, iii only

19 **Consider the following statements about the mailed questionnaire method:**
i. The enumerator fills in the forms at the respondent's door.
ii. It suffers from non-response.
iii. It can cover a wide area at low cost.
Which of the above statements are correct?

(A) iii only **(B)** i, ii only
(C) ii, iii only **(D)** i, ii, iii

20 **Consider the following statements:**
i. In the schedule method the form is filled in by the enumerator.
ii. The questionnaire method is best suited to illiterate respondents.
iii. The schedule method needs trained enumerators.
Which of the above statements are correct?

(A) ii only **(B)** i, iii only
(C) ii, iii only **(D)** i, ii, iii

21 **Consider the following statements:**
i. A pilot survey tests the questionnaire before the main survey.
ii. Census means complete enumeration of the population.
iii. A sample survey studies only a part of the population.
Which of the above statements are correct?

(A) iii only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

22 **Consider the following statements:**
i. Sampling gives complete information about every unit of the population.
ii. Sampling is preferred when the population is large and time and cost are limited.
iii. Census is always cheaper than sampling.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, iii only
(D) i, ii, iii

23 **Consider the following statements:**
i. Telephone interviews are quick.
ii. They are limited to persons having phone access.
iii. Observation records behaviour directly.
iv. Mailed questionnaires always give a 100% response.
Which of the above statements are correct?

(A) i, iii only
(B) ii, iv only
(C) i, ii and iii only
(D) i, ii and iv only

24 **Consider the following statements:**
i. Published sources of secondary data include government reports and journals.
ii. The RBI Bulletin is an unpublished source of secondary data.
iii. Secondary data can be obtained only from published sources.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

25 **Consider the following statements about indirect oral investigation:**
i. It is used when the persons directly concerned are the easiest to reach.
ii. It is used when persons directly concerned are unwilling or unavailable.
iii. Information is collected from witnesses or third parties.
Which of the above statements are correct?

(A) ii only
(B) iii only
(C) i, iii only
(D) ii, iii only

26 **Consider the following statements:**
i. The National Statistics Office conducts large-scale sample surveys in India.
ii. The population census in India is held every ten years.
iii. The census in India is conducted by NITI Aayog.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

27 **Consider the following statements:**
i. A sample survey covers every unit of the population.
ii. The mailed questionnaire method requires the investigator's personal presence.
iii. A questionnaire is a set of questions designed to collect information.
Which of the above statements are correct?

(A) i only
(B) iii only
(C) i, ii only
(D) i, iii only



Unit 7 · Questionnaire Design

Question types, response bias, scales and questionnaire administration

15 MCQs

1 **Which one of these is a self-administered questionnaire?**

(A) Face-to-face questionnaire
(B) Personal questionnaire
(C) Postal questionnaire
(D) Telephone questionnaire

2 **Which one of these is an interviewer-administered questionnaire?**

(A) Delivery and collection questionnaire
(B) On-line questionnaire
(C) Telephone questionnaire
(D) Postal questionnaire

3 **In situations where not all respondents are sufficiently informed to answer a question:**

(A) Multiple questionnaires should be designed
(B) Double-barrelled questions should be used
(C) Quota sampling should be used
(D) Open-ended questions should be used
(E) Filter questions should be used

4 **What is a mistake that researchers who write questionnaires should avoid?**

(A) Writing questions respondents are willing to answer
(B) Writing questions respondents do not understand
(C) Writing questions with filters and routes
(D) Writing questions respondents are able to answer

5 **An advantage of open-ended questions is that:**

(A) They can also be used in topic guides
(B) Respondents can express themselves freely
(C) Coding is a challenge
(D) Potential is high for interviewer bias

6 **Respondents tend to answer with the first statement in a list. This is called:**

(A) Leading question bias
(B) Hawthorne effect bias
(C) Response bias
(D) Position bias

7 **Examples of ambiguous words include:**

(A) Regularly
(B) Often
(C) Adequately
(D) All of the above

8 **What is the advantage of open-ended questions?**

(A) Can be misinterpreted
(B) Can be analysed slowly
(C) Can explore new areas
(D) Can be asked slowly

9 **Indirect questions are of great use for investigating:**

(A) Business issues
(B) Sensitive topics
(C) Demographics
(D) Food purchases

10 **Identify what type of question the following is: "Did you use the library yesterday?"**

(A) An open-ended question
(B) An indirect question
(C) An indiscreet question
(D) A direct question

11 **"Do you think asbestos should be banned from the workplace because it causes cancer as demonstrated by the medical profession?" is an example of:**

(A) A leading question
(B) Vague wording
(C) Position bias
(D) A generalisation
(E) An implicit alternative

12 **It is sensible to send a return envelope with:**

(A) Postal questionnaires
(B) Personal questionnaires
(C) Delivery and collection questionnaires
(D) On-line questionnaires
(E) Telephone questionnaires

13 What is this?
Good ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Bad**

(A) A semantic differential scale
(B) A filter question
(C) A simple itemised rating scale
(D) A Likert scale

14 **Different factors affect the outcome of research. In a study using a self-completion questionnaire, which of these would probably NOT affect the outcome?**

(A) Sample size
(B) Incentive quality
(C) Paper colour
(D) Question wording
(E) Interviewer training

15 **Different factors affect the outcome of research. In a study using a telephone questionnaire, which of these would probably NOT affect the outcome?**

(A) Sample size
(B) Interviewer voice
(C) Question wording
(D) Paper colour
(E) Incentive quality

Unit 8 · Organisation of Data & Frequency Distributions

65 MCQs

Classification, class limits, series, mid-values and types of frequency distribution

Section A · Practice MCQs

1 **_____ of the data refers to the arrangement of figures in such a form that comparison of the mass of similar data may be facilitated and further analysis may be possible.**

(A) Organization
(B) Collection
(C) Interpretation
(D) Analysis

2 **It is the process of arranging things in groups or classes according to their resemblances:**

(A) Interpretation
(B) Classification
(C) Analysis
(D) Collection

3 **Chronological classification is:**

(A) Classification on the basis of time
(B) Classification on the basis of quality
(C) Classification on the basis of location
(D) Classification on the basis of quantity

4 **Which variable increases in jumps or in complete numbers?**

(A) Continuous
(B) Individual
(C) Discrete
(D) Multiple

5 **Class limits means:**

(A) A range of values which incorporates a set of items
(B) Difference between upper or lower limits
(C) Extreme values of a class are limits
(D) Sum of upper or lower limits

6 **Series of statistical data with one variable only is called:**

(A) None
(B) Discrete
(C) Continuous
(D) Individual Series

7 **The number of times an item occurs in the series is known as:**

(A) Frequency **(B)** Variable
(C) Class **(D)** Series

8 **A range of values which incorporates a set of items is called:**

(A) Magnitude of a class interval **(B)** Class
(C) Class limits **(D)** None

9 **Difference between upper or lower limits is:**

(A) Class interval **(B)** Extreme class
(C) Class limits **(D)** Class

10 **Average value of the upper and lower limits is:**

(A) Class interval **(B)** Mid-value
(C) Class limits **(D)** Class

11 **An open-end class is the class which lacks:**

(A) Lower limit **(B)** Either lower limit or higher limit
(C) Both lower limit and higher limit **(D)** Higher limit

12 **Inclusive series:**

(A) Both
(B) None
(C) Which includes items up to its upper limits
(D) Which includes items up to its upper limits

13 **The series in which lower limit of the class interval or the upper limit of last class interval is missing is:**

(A) Cumulative frequency **(B)** Exclusive
(C) Open-end series **(D)** Frequency array

14 **Which number of tally bar will cross out all previous tallies?**

(A) 4 **(B)** 5
(C) 6 **(D)** 3

15 **A characteristic of interest for the elements is:**

(A) An element **(B)** A data set
(C) None of the above **(D)** A variable

16 **A range of values which incorporates a set of items is called:**

(A) Magnitude of a class interval **(B)** Class
(C) Class limits **(D)** None

17 **Difference between upper or lower limits is:**

(A) Class interval **(B)** Extreme class
(C) Class limits **(D)** Class

18 **Average value of the upper and lower limits is:**

(A) Class interval **(B)** Mid-value
(C) Class limits **(D)** Class

19 **An open-end class is the class which lacks:**

(A) Lower limit **(B)** Either lower limit or higher limit
(C) Both lower limit and higher limit **(D)** Higher limit

20 **Following are the types of frequency distribution except:**

(A) Exclusive **(B)** Cumulative frequency
(C) Frequency array **(D)** Open ended

21 **Inclusive series:**

(A) Both
(B) None
(C) Which includes items up to its upper limits
(D) Which includes items up to its upper limits

22 **The series in which lower limit of the class interval or the upper limit of last class interval is missing is:**

(A) Cumulative frequency **(B)** Exclusive
(C) Open-end series **(D)** Frequency array

23 **Which number of tally bar will cross out all previous tallies?**

(A) 4 **(B)** 5
(C) 6 **(D)** 3

24 **Series in which frequencies are continuously added corresponding to each class interval in the series:**

(A) Cumulative frequency series
(B) Frequency
(C) Deviation
(D) Mid value

25 **A characteristic of interest for the elements is:**

(A) An element
(B) A data set
(C) None of the above
(D) A variable

26 **Range is the:**

(A) Difference between the smallest and the largest observations
(B) Average of the largest and the smallest observations
(C) Sum of the largest and the smallest observations
(D) Product of the smallest and the largest observations

27 **The frequency distribution of two variables is known as:**

(A) Univariate distribution
(B) Sub-multivariate distribution
(C) Bivariate distribution
(D) Multivariate distribution

28 **Cumulative frequency distribution records frequencies on:**

(A) Both
(B) Less than
(C) None
(D) Or more

29 **Orderly arrangement of data ultimately takes the shape of a:**

(A) Variable
(B) Attributes
(C) Range
(D) Frequency Distribution

30 **Mid-point is used to calculate the following except:**

(A) Median
(B) Dispersion
(C) Frequency graphs
(D) Averages

31 **How many classes should a frequency distribution have?**

(A) Neither very large nor very small number
(B) Small number
(C) None
(D) Large number

32 **Arrangement of data according to some logical order is termed as:**

(A) Collection series
(B) Sample series
(C) Statistical series
(D) None

33 **The purpose of classification is to:**

(A) Present the data in simple form
(B) Make data comparable and estimative
(C) Make data more attractive
(D) All of these

34 **A good classification should have:**

(A) Comprehensiveness
(B) Inelastic
(C) Complexity
(D) Heterogeneity

35 **Under exclusive method:**

(A) The upper class limit of a class is included in the class interval
(B) The upper class limit of a class is excluded in the class interval
(C) The lower class limit of a class is excluded in the class interval
(D) The lower class limit of a class is included in the class interval

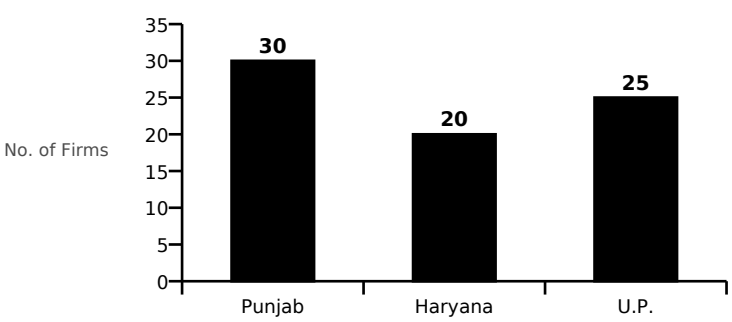
36 **The class mid-point is equal to:**

(A) The ratio of the upper class limit and the lower class limit
(B) The average of the upper class limit and the lower class limit
(C) The product of upper class limit and the lower class limit
(D) None of these

37 **How does an individual series differ from a discrete series?**

(A) Values are given in the form of group
(B) There is no column for frequency
(C) Frequency for each item is more than one
(D) None

38 **Name the type of classification used in the following graph:**



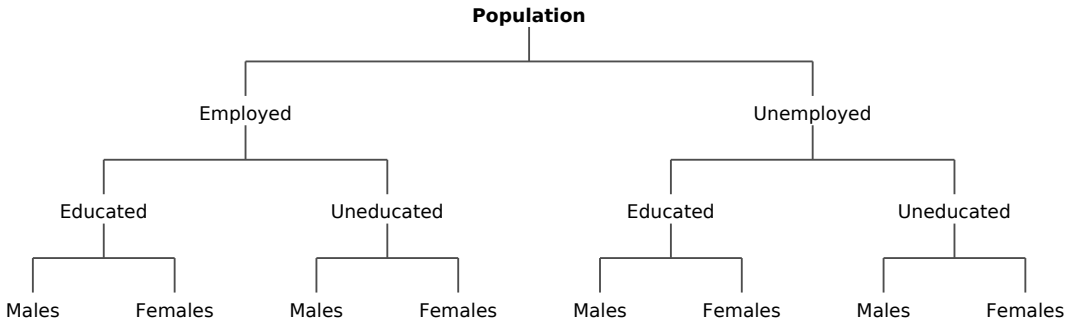
(A) Quantitative
(B) Qualitative
(C) Chronological
(D) Spatial

39 **Identify the type of classification used in the following table:**

Year	Sales (₹)
2003	80 Lakh
2004	90 Lakh
2005	95 Lakh

(A) Chronological
(B) None
(C) Qualitative
(D) Spatial

40 **Identify the type of classification from the following diagram:**



(A) Simple classification
(B) Dichotomy
(C) None
(D) Manifold classification

41 **Identify the type of variable from the following table:**

Weight	No. of Students
50-52	35
52-54	40
54-56	45
56-58	50

(A) Continuous
(B) Discrete
(C) Individual
(D) None

42 **From the table given below, identify the type of classification on the basis of class interval:**

Marks
0 - 10
10 - 20
20 - 30
30 - 40

(A) Exclusive method
(B) Inclusive method
(C) Both
(D) None

43 **Expression of the class interval 90-99 in open ended classes:**

(A) None
(B) 90 and above
(C) 99 or below
(D) Both

44 **There are two class intervals 0-10 and 10-20. If a student scores 10 marks, he should be included in which class interval?**

(A) 10-20
(B) Not be included in these intervals
(C) Both the 0-10 and 10-20
(D) 0-10

45 **The arrangement of data in rows and columns is called:**

(A) Frequency distribution
(B) Cumulative frequency distribution
(C) Tabulation
(D) Classification

Section B · JKSSB Statement-Type MCQs · Types of Statistical Series

46 **Consider the following statements:**
i. An individual series lists each observation separately.
ii. A discrete series shows exact values with their frequencies.
iii. In a continuous series, values are shown only as exact whole numbers.
Which of the above statements are correct?

(A) iii only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

47 **Consider the following statements about the exclusive method:**
i. The upper limit of a class is included in that class.
ii. The value 20 in classes 10–20 and 20–30 belongs to 20–30.
iii. There are no gaps between the classes.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

48 **Consider the following statements:**
i. In the inclusive method, both limits belong to the class.
ii. The classes 10–19, 20–29 are exclusive classes.
iii. The true limits of 20–29 are 19.5 to 29.5.
Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, iii only
(D) ii, iii only

49 **Consider the following statements:**
i. A class such as 'Below 10' is open-ended.
ii. A class such as '50 and above' is open-ended.
iii. The class mark of an open-ended class cannot be found exactly without an assumption.
Which of the above statements are correct?

(A) i only
(B) iii only
(C) i, iii only
(D) i, ii, iii

50 **Consider the following statements:**
i. The class mark of 20–30 is 25.
ii. The class width of 10–20 is 20.
iii. Class mark = upper limit − lower limit.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

51 **Classes 0–10, 10–20, 20–30, 30–40, 40–50 have frequencies 5, 8, 12, 10, 5. Consider the following statements:**
i. The less-than cumulative frequency up to 30 is 25.
ii. The total frequency is 40.
iii. The more-than cumulative frequency at 20 is 27.
iv. The modal class is 10–20.
Which of the above statements are correct?

(A) i, iv only
(B) i, ii and iii only
(C) i, iii and iv only
(D) i, ii, iii and iv

52 **Consider the following statements:**
i. The number of children in a family is a continuous variable.
ii. Height is a continuous variable.
iii. The number of cars is a discrete variable.
Which of the above statements are correct?

(A) ii only
(B) i, ii only
(C) i, iii only
(D) ii, iii only

53 **Consider the following statements:**
i. A time series arranges data chronologically.
ii. A time series is also called a frequency series.
iii. A time series cannot show a trend.
Which of the above statements are correct?

(A) i only
(B) iii only
(C) i, ii only
(D) ii, iii only

54 **Consider the following statements about converting inclusive classes to exclusive:**
i. Subtract 0.5 from lower limits and add 0.5 to upper limits when the gap is 1.
ii. Correction factor = half the gap between the upper limit of a class and the lower limit of the next.
iii. The class 15–24 converts to 14–25.
iv. Conversion is needed for exclusive series.
Which of the above statements are correct?

(A) i, ii only
(B) ii, iii only
(C) ii, iv only
(D) i, ii, iii and iv

55 **Consider the following statements:**
i. The mid-value of the class 40–50 is 40.
ii. The class interval of 30–40 is 40.
iii. A frequency distribution shows how observations are distributed over classes.
Which of the above statements are correct?

(A) iii only
(B) i, iii only
(C) ii, iii only
(D) i, ii, iii

Section C · JKSSB Statement-Type MCQs · Frequency Distribution

56 **Consider the following statements about frequency distribution:**
i. Frequency is the number of times a value occurs.
ii. In the exclusive method, class interval = upper limit − lower limit.
iii. Range is the difference between the highest and lowest values.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) i, iii only
(D) i, ii, iii

57 **Consider the following statements:**
i. The sum of all frequencies equals the total number of observations.
ii. Class mark = (upper limit + lower limit) / 2.
iii. Relative frequency can exceed 1.
Which of the above statements are correct?

(A) i only
(B) i, ii only
(C) ii, iii only
(D) i, ii, iii

58 **In a data set the lowest value is 12 and the highest is 87. Consider the following statements:**
i. The range is 75.
ii. With class width 15, the number of classes is 5.
iii. The class mark of the first class 12–27 is 20.
iv. With class width 10, the number of classes would be 8.
Which of the above statements are correct?

(A) i, ii only
(B) ii, iv only
(C) i, ii and iv only
(D) ii, iii and iv only

59 **Consider the following statements:**
i. The cumulative frequency of the last class is less than the total frequency.
ii. Less-than cumulative frequency is obtained by adding frequencies from the first class upward.
iii. Mid-values are used in drawing a frequency polygon.
Which of the above statements are correct?

(A) ii only
(B) iii only
(C) i, ii only
(D) ii, iii only

60 **For the class 20–30 with frequency 50 in a data set of 200 observations, consider the following statements:**

i. The frequency density is 5.
ii. The relative frequency is 0.25.
iii. The percentage frequency is 20%.
iv. The relative frequencies of all classes add up to 1.

Which of the above statements are correct?

(A) ii, iv only
(B) i, ii and iii only
(C) i, ii and iv only
(D) i, iii and iv only

61 **Consider the following statements:**

i. The class mark of an open-ended class needs an assumption.
ii. A histogram with unequal class widths uses the frequencies directly as heights.
iii. For unequal widths, frequency density is used for the heights.

Which of the above statements are correct?

(A) i only
(B) ii only
(C) i, iii only
(D) ii, iii only

62 **Consider the following statements:**

i. A discrete frequency distribution always groups values into class intervals.
ii. A cumulative frequency distribution can be of less-than or more-than type.
iii. The more-than cumulative frequency of the first class is zero.

Which of the above statements are correct?

(A) ii only
(B) iii only
(C) i, iii only
(D) i, ii, iii

63 **Classes 0–10, 10–20, 20–30, 30–40, 40–50 have frequencies 4, 6, 10, 5, 5. Consider the following statements:**

i. The total frequency is 30.
ii. The number of observations below 30 is 20.
iii. The modal class is 20–30.
iv. The median class is 10–20.

Which of the above statements are correct?

(A) i, iii only
(B) ii, iv only
(C) i, ii and iii only
(D) ii, iii and iv only

64 **Consider the following statements:**

i. Tally marks are used to count frequencies.
ii. A frequency distribution increases the bulk of data without summarising it.
iii. Tally marks are made after the final table is printed.

Which of the above statements are correct?

(A) i only
(B) ii only
(C) iii only
(D) i, ii, iii

65 **Consider the following statements:**
i. Raw data are unorganised observations.
ii. A grouped distribution retains every individual value exactly.
iii. The points of a less-than ogive are plotted against upper class limits.
iv. The points of a more-than ogive are plotted against upper class limits.
Which of the above statements are correct?

(A) i, iii only
(B) i, iv only
(C) iii, iv only
(D) i, ii and iv only



Unit 9 · Practice Set

Mixed questions on data collection, classification and frequency distributions

11 MCQs

1 **What is an example of a primary data collection method?**

(A) Surveying existing research papers
(B) Reviewing census data
(C) Analyzing historical records
(D) Conducting interviews and surveys

2 **Secondary data is primarily sourced from:**

(A) Original research studies
(B) Publicly available databases
(C) Personal interviews
(D) Laboratory experiments

3 State true (T) or false (F):
(i) Primary data are cheap.
(ii) Secondary data are primarily collected for some other purpose.
(iii) Secondary data are costly.

4 **The questionnaires are filled by questions pertaining to the:**

(A) Syllabus
(B) Topic
(C) Investigation
(D) Country

5 **The series given below is of the type:**

Country	Pakistan	India	Srilanka	Bhutan
Death rate	40	30	20	25

(A) Inclusive
(B) Exclusive
(C) Geographical
(D) Time series

6 **When data are arranged at regular intervals of time, the classification is called:**

(A) Qualitative
(B) Quantitative
(C) Chronological
(D) Geographical

7 **The number of tally marks counted for each value or group is called:**

(A) Class limit
(B) Class boundary
(C) Frequency
(D) Class width

8 **The extreme values used to describe the different classes in a frequency distribution are called:**

(A) Class intervals **(B)** Class boundaries
(C) Class limits **(D)** Cumulative frequency

9 **In a frequency table, either the lower limit of the first class or the upper limit of the last class is not a fixed number. Then the classes are called:**

(A) One-way classes **(B)** Two-way classes
(C) Discrete classes **(D)** Open ended classes

10 **The following frequency distribution is classified as:**

Classes	0-4	5-9	10-14	15-19	20-24
Frequency	4	5	3	2	6

(A) Open-ended series **(B)** Inclusive series
(C) Exclusive series **(D)** Qualitative series

11 **In an exclusive classification, the limits excluded are:**

(A) Upper limit **(B)** Lower limit
(C) Both (a) and (b) **(D)** Either (a) or (b)

Unit 10 · UPSC-Style Statement-Based MCQs

Consider-the-following-statements questions based on the topics of Units 1 to 9

10 MCQs

1 **Consider the following statements about primary and secondary data:**
1. Data collected first-hand by a researcher through a field survey is primary data.
2. Data taken from a published source such as 'Agricultural Situation in India' is secondary data.
3. Primary data is generally cheaper and quicker to obtain than secondary data.
Which of the statements given above is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 1 and 2 only
(D) 1, 2 and 3

2 **Consider the following statements about census and sample surveys:**
1. A census survey collects information from every unit of the population.
2. A sample survey is generally less costly and less time-consuming than a census.
3. Sampling is the only practical method when the population is infinite or when testing destroys the unit.
Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

3 **Consider the following statements about the classification of data:**
1. Classification by attributes such as religion, honesty or intelligence is qualitative classification.
2. Arranging data year-wise (for example, food production from 1987 to 1992) is chronological classification.
3. Classification of data by states or countries is spatial (geographical) classification.
4. Chronological classification is also known as chorological classification.
Which of the statements given above are correct?

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

4 **Consider the following statements about class intervals:**
1. In the exclusive method, the upper limit of a class is excluded from that class and belongs to the next class.
2. In the inclusive method, both the lower and the upper limit are included in the same class.
3. An inclusive series can be converted into an exclusive series by subtracting 0.5 from each lower limit and adding 0.5 to each upper limit (when the gap between classes is 1).
How many of the statements given above are correct?

(A) Only one
(B) Only two
(C) All three
(D) None

5 **Consider the following statements about frequency distributions:**
1. Class interval is the difference between the upper and the lower class limit.
2. Class mark is the average of the upper and the lower class limit.
3. A class with no lower limit (first class) or no upper limit (last class) is an open-end class.
4. In an individual series, every item has a frequency of two.
Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 2, 3 and 4 only
(C) 1 and 4 only
(D) 1, 2, 3 and 4

6 **Consider the following statements about tabulation:**
1. The stub of a table contains the row headings, while the captions are the column headings.
2. A head-note is placed just below the title and gives details such as the units of measurement.
3. A source note is given at the foot of a table, mainly when the data is secondary.
4. The body of a table contains only the title and the footnotes.
Which of the statements given above are correct?

(A) 1 and 2 only
(B) 2, 3 and 4 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

7 **Consider the following statements about histograms, frequency polygons and ogives:**
1. A histogram represents a continuous frequency distribution, and its bars touch each other.
2. A frequency polygon can be obtained by joining the mid-points of the tops of the rectangles of a histogram.
3. The 'less than' and 'more than' ogives intersect at the median.
4. The mode of a distribution can be located graphically from an ogive.
Which of the statements given above are correct?

(A) 1 and 4 only
(B) 2, 3 and 4 only
(C) 1, 2 and 4 only
(D) 1, 2 and 3 only

8 **Consider the following statements about diagrams and graphs:**
1. A pie diagram is suitable for showing the components of a single total.
2. A multiple time series graph is suitable for comparing the growth of two or more series over time.
3. The greater the distance of the Lorenz curve from the line of equal distribution, the greater the inequality.
4. Pictograms are the most accurate way of presenting data.
How many of the statements given above are correct?

(A) All four
(B) Only three
(C) Only two
(D) Only one

9 **Consider the following statements about statistical error:**
1. If the actual value is 415 and the estimated value is 400, the absolute error is 15.
2. Relative error is obtained by dividing the error (actual value − estimated value) by the estimated value.
3. Relative error is always positive.
Which of the statements given above is/are correct?

(A) 1 only
(B) 1 and 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

10 **Consider the following statements about questionnaire design:**
1. Open-ended questions allow respondents to express themselves freely and can explore new areas.
2. Position bias arises when respondents tend to answer with the first statement in a list.
3. The mailed questionnaire method can be adopted even if the respondents are not educated.
4. Researchers should avoid writing questions that respondents do not understand.
Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1, 3 and 4 only
(C) 2 and 3 only
(D) 1, 2 and 4 only



Answer Key

Unit 1 · Concept-Based MCQs

25 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	4	**D**	7	**A**	10	**C**	13	**B**	16	**A**	19	**B**	22	**A**	25	**B**		
2	**B**	5	**A**	8	**B**	11	**C**	14	**A**	17	**D**	20	**B**	23	**D**				
3	**A**	6	**A**	9	**A**	12	**C**	15	**B**	18	**C**	21	**D**	24	**B**				

Note: Answers for this unit were not in the source file; they have been worked out and added.

Unit 2 · Statistics in General

40 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**B**	5	**A**	9	**B**	13	**B**	17	**C**	21	**C**	25	**D**	29	**D**	33	**D**	37	**B**
2	**B**	6	**B**	10	**B**	14	**C**	18	**B**	22	**C**	26	**D**	30	**B**	34	**C**	38	**C**
3	**C**	7	**C**	11	**B**	15	**C**	19	**D**	23	**C**	27	**B**	31	**C**	35	**A**	39	**A**
4	**C**	8	**C**	12	**C**	16	**B**	20	**C**	24	**B**	28	**B**	32	**C**	36	**C**	40	**A**

Unit 3 · Classification & Tabulation

42 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**D**	6	**A**	11	**B**	16	**C**	21	**A**	26	**C**	31	**B**	36	**D**	41	**C**		
2	**B**	7	**B**	12	**C**	17	**A**	22	**B**	27	**C**	32	**C**	37	**A**	42	**B**		
3	**D**	8	**A**	13	**B**	18	**D**	23	**C**	28	**B**	33	**B**	38	**A**				
4	**B**	9	**B**	14	**D**	19	**B**	24	**B**	29	**C**	34	**C**	39	**A**				
5	**B**	10	**D**	15	**A**	20	**D**	25	**A**	30	**D**	35	**D**	40	**C**				

Note: Q4: the source key showed (c); it has been corrected to (b) because the upper limit is the one excluded in an exclusive series.

Unit 4 · Diagrammatic & Graphical Representation

70 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**D**	8	**A**	15	**C**	22	**D**	29	**B**	36	**D**	43	**C**	50	**B**	57	**B**	64	**C**
2	**D**	9	**B**	16	**B**	23	**D**	30	**D**	37	**C**	44	**A**	51	**C**	58	**B**	65	**C**
3	**D**	10	**B**	17	**A**	24	**C**	31	**B**	38	**D**	45	**B**	52	**A**	59	**D**	66	**C**
4	**D**	11	**C**	18	**B**	25	**C**	32	**A**	39	**B**	46	**B**	53	**A**	60	**A**	67	**D**
5	**C**	12	**A**	19	**A**	26	**D**	33	**B**	40	**B**	47	**C**	54	**C**	61	**B**	68	**B**
6	**B**	13	**C**	20	**B**	27	**D**	34	**B**	41	**D**	48	**B**	55	**B**	62	**D**	69	**D**
7	**C**	14	**B**	21	**A**	28	**A**	35	**A**	42	**C**	49	**D**	56	**D**	63	**C**	70	**C**

Unit 5 · Collection of Data

31 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	5	**A**	9	**C**	13	**D**	17	**C**	21	**A**	25	**B**	29	**C**				
2	**A**	6	**D**	10	**D**	14	**C**	18	**A**	22	**A**	26	**B**	30	**B**				
3	**C**	7	**D**	11	**A**	15	**B**	19	**B**	23	**D**	27	**D**	31	**C**				
4	**D**	8	**A**	12	**C**	16	**B**	20	**B**	24	**D**	28	**A**						

Unit 6 · Survey & Research Methods

27 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**D**	4	**C**	7	**B**	10	**A**	13	**A**	16	**B**	19	**C**	22	**B**	25	**D**		
2	**D**	5	**D**	8	**B**	11	**B**	14	**A**	17	**D**	20	**B**	23	**C**	26	**B**		
3	**A**	6	**C**	9	**C**	12	**B**	15	**B**	18	**C**	21	**D**	24	**A**	27	**B**		

Unit 7 · Questionnaire Design

15 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	3	**E**	5	**B**	7	**D**	9	**B**	11	**A**	13	**A**	15	**D**				
2	**C**	4	**B**	6	**D**	8	**C**	10	**D**	12	**A**	14	**E**						

Unit 8 · Organisation of Data & Frequency Distributions

65 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**A**	8	**B**	15	**D**	22	**C**	29	**D**	36	**B**	43	**C**	50	**A**	57	**B**	64	**A**
2	**B**	9	**A**	16	**B**	23	**B**	30	**A**	37	**B**	44	**A**	51	**B**	58	**C**	65	**A**
3	**A**	10	**B**	17	**A**	24	**A**	31	**A**	38	**D**	45	**C**	52	**D**	59	**D**		
4	**C**	11	**B**	18	**B**	25	**D**	32	**C**	39	**A**	46	**B**	53	**A**	60	**C**		
5	**C**	12	**C**	19	**B**	26	**A**	33	**D**	40	**D**	47	**D**	54	**A**	61	**C**		
6	**D**	13	**C**	20	**A**	27	**C**	34	**A**	41	**A**	48	**C**	55	**A**	62	**A**		
7	**A**	14	**B**	21	**C**	28	**A**	35	**B**	42	**A**	49	**D**	56	**D**	63	**C**		

Note: Q31: the source key showed (b); it has been corrected to (a) to match the explanation (too many or too few classes hide the shape of the data). Q12 and Q21 print options (c) and (d) identically in the source.

Unit 9 · Practice Set

11 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**D**	3	**†**	5	**C**	7	**C**	9	**D**	11	**A**								
2	**B**	4	**C**	6	**C**	8	**C**	10	**B**										

Note: Answers for this unit were not in the source file; they have been worked out and added. † Q3 is a true/false item: (i) False, (ii) True, (iii) False.

Unit 10 · UPSC-Style Statement-Based MCQs

10 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	2	**D**	3	**B**	4	**C**	5	**A**	6	**C**	7	**D**	8	**B**	9	**B**	10	**D**

Note: Answers for this unit were worked out and added; brief solutions follow the answer key.

Brief Solutions · Classification & Tabulation

Q	Ans	Solution
33	**B**	iii is wrong: classification condenses data.
34	**C**	i is wrong: classification by time is chronological.
35	**D**	ii is wrong: the title is separate; a footnote explains exceptions.
36	**D**	All three are correct.
37	**A**	ii is a two-way table; iii is wrong, manifold tables show many characteristics.
38	**A**	Order: collection, editing, classification, tabulation.
39	**A**	For N = 16: k = 1 + 3.322 × 1.204 = 5, not 4. The rule gives the number of classes, not the width. For N = 64: k = 1 + 6 = 7.
40	**C**	ii is wrong: geographical classification is by place.
41	**C**	i is wrong: source notes are part of a good table.
42	**B**	Stub heads are row heads; class intervals belong to quantitative classification.

Brief Solutions · Diagrammatic & Graphical Representation

Q	Ans	Solution
61	**B**	iii is wrong: a frequency polygon joins the mid-points of class tops.
62	**D**	i is wrong: an ogive plots cumulative frequencies.
63	**C**	ii is wrong: a pie chart is two-dimensional.
64	**C**	Angle = (value / 48,000) × 360. Food 135°, Rent 90°, Education 45°, Savings 67.5° (not 72°), Others 22.5°.
65	**C**	Average = 260 / 5 = 52. Increase 2019–20 = 10/40 × 100 = 25%. The largest rise (+20) was in 2022, not 2023 (−5).
66	**C**	Average = 130 / 5 = 26 (not 25). Increase = 13/20 × 100 = 65%.
67	**D**	Total = 850, average = 141.67 (not 150). Fall = 40/140 × 100 = 28.57%.
68	**B**	N = 50, N/2 = 25. Cumulative frequencies: 5, 17, 37, so the median class is 20–30. Below 30: 5 + 12 + 20 = 37.
69	**D**	iii is wrong: line graphs are best for time series.
70	**C**	150/200 = 75%, 200/250 = 80%, 210/300 = 70%. The highest was 2021.

Brief Solutions · Collection of Data

Q	Ans	Solution
22	**A**	iii is wrong: primary data collection is usually costlier and slower.
23	**D**	i is wrong: the department's own survey data are primary for it.
24	**D**	All three are correct.
25	**B**	ii is wrong: the accuracy of secondary data depends on its source and must be verified.
26	**B**	i is wrong (the data are primary for NSO); iii is wrong (office records are unpublished secondary sources).
27	**D**	iv is wrong: secondary data must be scrutinised for suitability, reliability and adequacy.
28	**A**	ii and iii are first-hand data, hence primary.
29	**C**	i is wrong: primary data can be qualitative too (for example, opinions).
30	**B**	iii is wrong: secondary data can carry errors of the original collector.
31	**C**	i and ii describe secondary data wrongly; only iii is correct.

Brief Solutions · Survey & Research Methods

Q	Ans	Solution
18	**C**	iii is wrong: it is costly and slow for scattered areas.
19	**C**	i is wrong: respondents fill in the questionnaire themselves.
20	**B**	ii is wrong: questionnaires need literate respondents.
21	**D**	All three are correct.
22	**B**	i describes a census; iii is wrong, a census is usually costlier.
23	**C**	iv is wrong: non-response is a major problem.
24	**A**	ii and iii are wrong: the RBI Bulletin is published; office records are unpublished sources.
25	**D**	i is wrong: it is used when direct sources are not available.
26	**B**	iii is wrong: the census is conducted under the Ministry of Home Affairs (Registrar General and Census Commissioner).
27	**B**	Only iii is correct.

Brief Solutions · Organisation of Data & Frequency Distributions

Q	Ans	Solution
46	**B**	iii is wrong: a continuous series uses class intervals.
47	**D**	i is wrong: the upper limit is excluded.
48	**C**	ii is wrong: classes with such gaps are inclusive.
49	**D**	All three are correct.
50	**A**	Width of 10–20 is 10; class mark = (upper + lower)/2.
51	**B**	5 + 8 + 12 = 25; N = 40; 12 + 10 + 5 = 27. The modal class is 20–30 (highest frequency, 12).
52	**D**	i is wrong: it is discrete (counted in whole numbers).
53	**A**	A time series is used precisely to study trends.
54	**A**	15–24 converts to 14.5–24.5. Exclusive series need no conversion.
55	**A**	Mid-value is 45; interval is 10.
56	**D**	All three are correct.
57	**B**	Relative frequency lies between 0 and 1.
58	**C**	Range = 75; 75/15 = 5; the mark of 12–27 is 19.5; 75/10 = 7.5, rounded up to 8.
59	**D**	i is wrong: the last cumulative frequency equals N.
60	**C**	50/10 = 5; 50/200 = 0.25 = 25% (not 20%).
61	**C**	ii is wrong: heights must be frequency densities.
62	**A**	The more-than cumulative frequency of the first class equals N.
63	**C**	N = 30, N/2 = 15; cumulative frequencies 4, 10, 20, so the median class is 20–30.
64	**A**	A frequency distribution condenses data; tallying is done while preparing it.
65	**A**	Grouping loses individual detail; the more-than ogive uses lower limits.

Brief Solutions · UPSC-Style Statement-Based MCQs

Q	Ans	Solution
1	**C**	Statements 1 and 2 are correct: first-hand field data is primary, and published sources give secondary data. Statement 3 is wrong: primary data is generally costlier and slower to collect, while secondary data is cheaper and quicker.
2	**D**	All three are correct. A census is complete enumeration; a sample survey is cheaper and faster; and an infinite (hypothetical) population or destructive testing makes sampling the only practical method.
3	**B**	Statements 1, 2 and 3 are correct. Statement 4 is wrong: 'chorological' is another name for spatial classification, not chronological.
4	**C**	All three are correct. In the exclusive method the upper limit belongs to the next class; in the inclusive method both limits belong to the same class; and the 0.5 correction converts an inclusive series into an exclusive one when the gap is 1.
5	**A**	Statements 1, 2 and 3 are correct. Statement 4 is wrong: in an individual series each item has a frequency of one.
6	**C**	Statements 1, 2 and 3 are correct. Statement 4 is wrong: the body of a table contains the actual numerical data, while the title and footnotes are separate parts.
7	**D**	Statements 1, 2 and 3 are correct. Statement 4 is wrong: the mode is located graphically from a histogram, not from an ogive; an ogive gives the median, quartiles, deciles and percentiles.
8	**B**	Statements 1, 2 and 3 are correct, so three statements are correct. Statement 4 is wrong: pictograms are the least accurate form of presentation.
9	**B**	Statements 1 and 2 are correct (415 − 400 = 15; relative error = (a − e)/e). Statement 3 is wrong: relative error can be positive or negative, depending on the sign of (a − e).
10	**D**	Statements 1, 2 and 4 are correct. Statement 3 is wrong: the mailed questionnaire method can be adopted only if the respondents are educated.

PrepX IQ — compiled by Shahid Ibn Amin.

Unit 1 · Measures of Central Tendency

Mean, median, mode, partition values, weighted mean, grouped data and skewness

26 MCQs

Part 1 · Mean, Median, Mode & Partition Values

1 **Regarding the properties of the Arithmetic Mean (AM), evaluate these four statements:**

1. The sum of deviations of items from their AM is always zero.
2. The sum of squared deviations of items from AM is minimum compared to any other value.
3. AM is highly affected by extreme values (outliers) in a dataset.
4. AM can be calculated even if the extreme classes of a frequency distribution are open-ended.

Which of the following are correct?

(A) 1, 2, and 3 only
(B) 2, 3, and 4 only
(C) All of the above
(D) 1 and 2 only

2 **Evaluate these statements regarding 'Mode':**

1. Mode is the value that occurs most frequently in a dataset.
2. A distribution can have more than one mode (multimodal).
3. Mode is the best measure of central tendency for qualitative data like 'most popular color'.
4. For a symmetric distribution, Mean, Median, and Mode are always equal.

Which of the following are correct?

(A) 1, 2, and 3 only
(B) 1 and 2 only
(C) 2 and 3 only
(D) All of the above

3 **Which of the following is the correct empirical relationship between Mean, Median, and Mode for a moderately skewed distribution?**

(A) Mode = 3 Median − 2 Mean
(B) Median = 3 Mode − 2 Mean
(C) Mode = 2 Median − 3 Mean
(D) Mean = 3 Median − 2 Mode

4 **Consider these statements on 'Partition Values':**

1. Quartiles divide the data into 4 equal parts.
2. Deciles divide the data into 10 equal parts.
3. Percentiles divide the data into 100 equal parts.
4. The 5th Decile and the 50th Percentile are both equal to the Median.

Which of the following is correct?

(A) 1 and 4 only
(B) 2 and 3 only
(C) All of the above
(D) 1, 2, and 3 only

5 **In a frequency distribution, if the 'Mean' is 40 and the 'Median' is 45, what is the nature of the skewness?**

(A) Bi-modal
(B) Negatively Skewed
(C) Symmetric
(D) Positively Skewed

6 **Regarding the calculation of the 'Weighted Arithmetic Mean', evaluate:**
1. It is used when all items in a series are not of equal importance.
2. The formula is $\bar{X}_w = \Sigma wX / \Sigma w$.
3. The simple AM is a special case of weighted AM where all weights are equal.
4. Weighted AM is always higher than the simple AM for the same dataset.

Which of the following is correct?

(A) 2, 3, and 4 only
(B) 1, 2, and 3 only
(C) 1 and 2 only
(D) All of the above

7 **Which measure of central tendency is used as the base for calculating the 'Consumer Price Index' (CPI)?**

(A) Geometric Mean
(B) Median
(C) Weighted Arithmetic Mean
(D) Mode

8 **Regarding the 'Relationship between Averages', evaluate:**
1. For skewed distributions, the Median always lies between the Mean and the Mode.
2. In a positively skewed distribution, Mode < Median < Mean.
3. In a negatively skewed distribution, Mean < Median < Mode.
4. For any set of data, the Median is the most reliable average.

Which of the following is correct?

(A) 2, 3, and 4 only
(B) 1 and 2 only
(C) All of the above
(D) 1, 2, and 3 only

9 **In a dataset with values 10, 20, 30, 40, 50, if the value 50 is replaced by 500, which measure will change the most?**

(A) Mode
(B) Arithmetic Mean
(C) Median
(D) Geometric Mean

10 **Consider these statements on 'Deciles' and 'Percentiles':**
1. There are 9 Deciles and 99 Percentiles in a series.
2. The 25th Percentile is equal to the Lower Quartile (Q_1).
3. The 75th Percentile is equal to the Upper Quartile (Q_3).
4. Percentiles are only used in very large populations like Census data.

Which of the following are correct?

(A) 1 and 2 only
(B) 2, 3, and 4 only
(C) 1, 2, and 3 only
(D) All of the above

11 **Which measure of central tendency is calculated by adding all the observations in a data set and dividing the sum by the total number of observations?**

(A) Arithmetic Mean
(B) Mode
(C) Median
(D) Geometric Mean

12 **If the mean of 5 observations is 20, and a 6th observation with a value of 32 is added to the data set, what is the new mean?**

(A) 22
(B) 24
(C) 26
(D) 20

13 **An analyst calculates the modal value for a set of shirt sizes sold at a store. If the sizes sold are M, L, S, M, XL, M, L, M, S, what is the mode of this distribution?**

(A) S
(B) M
(C) L
(D) There is no mode

14 **For a perfectly symmetrical, bell-shaped distribution (like the normal distribution curve), what is the relationship between the Mean, Median, and Mode?**

(A) Mean < Median < Mode
(B) Mean > Median > Mode
(C) Mean + Mode = Median
(D) Mean = Median = Mode

15 **The algebraic sum of deviations of a set of observations from their arithmetic mean is always equal to:**

(A) The variance
(B) 1
(C) 0
(D) The total number of observations (n)

16 **If every observation in a statistical dataset is increased by a constant value of 5, how does the arithmetic mean of the dataset change?**

(A) The mean is multiplied by 5.
(B) The mean increases by 5/n, where n is the number of observations.
(C) The mean increases by 5.
(D) The mean remains unchanged.

Part 2 · Median, Quartiles, Percentiles, Weighted Mean & Skewness

17 **Regarding the 'Limitations of the Median', evaluate:**
1. It is not based on all observations, as only middle values determine it.
2. It is not suitable for further algebraic treatment (e.g., finding combined median).
3. It requires the data to be 'Arranged' in order, which is time-consuming for large sets.
4. It is extremely sensitive to changes in extreme values.

Which of the following is correct?

(A) 2, 3, and 4 only
(B) 1, 2, and 3 only
(C) All of the above
(D) 1 and 2 only

18 **Analyze these statements on 'Lower Quartile' (Q_1) and 'Upper Quartile' (Q_3):**
1. Q_1 is the value such that 25% of observations are less than it.
2. Q_3 is the value such that 75% of observations are less than it.
3. The difference $Q_3 - Q_1$ is known as the 'Inter-Quartile Range'.
4. Q_2 (the Second Quartile) is equal to the AM of Q_1 and Q_3.

Which of the following is correct?

(A) 2, 3, and 4 only
(B) 1 and 2 only
(C) 1, 2, and 3 only
(D) All of the above

19 **Analyze these statements on 'Percentiles' and 'Deciles' in exam ranking:**
1. A student in the 90th percentile scored better than 90% of the candidates.
2. The 9th Decile (D_9) is identical to the 90th Percentile (P_{90}).
3. Percentiles are preferred over AM because they show the 'Relative Position'.
4. Scoring 100 marks always guarantees being in the 100th percentile.

Which of the following is correct?

(A) 1 and 2 only
(B) 2, 3, and 4 only
(C) All of the above
(D) 1, 2, and 3 only

20 **Analyze these statements on 'Partition Values' (Quartiles / Deciles / Percentiles):**
1. Quartiles divide the data into four equal parts using three values (Q_1, Q_2, Q_3).
2. The Second Quartile (Q_2), 5th Decile (D_5), and 50th Percentile (P_{50}) are all equal.
3. Partition values are calculated only after the data is arranged in ascending order.
4. Quartiles are less affected by extreme values than the Arithmetic Mean.

Which of the following is correct?

(A) All of the above
(B) 1 and 2 only
(C) 1, 2, and 3 only
(D) 2 and 3 only

21 **In a moderately skewed distribution, if the Mean is 30 and the Median is 28, find the approximate value of the Mode.**

(A) 26
(B) 24
(C) 34
(D) 28

22 **Regarding 'Weighted Averages', evaluate:**
1. It is used when all items in a dataset do not have equal importance.
2. Weighted Mean = ΣwX / Σw.
3. The simple Arithmetic Mean is a special case of weighted mean where all weights are equal to 1.
4. Weighted mean is only applicable to the Harmonic Mean, not the Arithmetic Mean.
Which of the following is correct?

(A) 1, 2, and 3 only
(B) 2, 3, and 4 only
(C) All of the above
(D) 1 and 2 only

23 **Regarding the 'Calculation of Mean' in grouped data, evaluate:**
1. The 'Direct Method' uses ΣfX / Σf.
2. The 'Assumed Mean' method uses A + (Σfd / Σf).
3. The 'Step Deviation' method is valid only if all class intervals are of equal width.
4. The resulting mean from all three methods must be mathematically identical.
Which of the following is correct?

(A) 2 and 3 only
(B) 1, 2, and 4 only
(C) All of the above
(D) 1 and 2 only

24 **Analyze these statements on 'Open-Ended' distributions:**
1. The extremes of the frequency distribution have no fixed boundaries.
2. The Arithmetic Mean cannot be calculated because mid-points are unknown.
3. The Median is the most suitable measure as it does not rely on mid-points.
4. The Mode can be found only if the modal class is NOT an open-ended class.
Which of the following are correct?

(A) All of the above
(B) 1 and 3 only
(C) 2 and 4 only

25 **Consider these statements on 'Averages' and Skewness directions:**
1. If Mean > Median, the distribution is positively skewed (tail to the right).
2. If Mean < Median, the distribution is negatively skewed (tail to the left).
3. Median always sits between Mean and Mode in a skewed distribution.
4. These rules are valid only for discrete distributions, not continuous ones.
Which of the following is correct?

(A) 1 and 2 only
(B) All of the above
(C) 2, 3, and 4 only
(D) 1, 2, and 3 only

26 **Consider these statements on 'Percentiles' (P_x) and 'Deciles' (D_x) in a large dataset:**

1. Percentiles divide the data into 100 equal parts using 99 partition values.
2. Deciles divide the data into 10 equal parts using 9 partition values.
3. The 5th Decile (D_5) and the 50th Percentile (P_{50}) always coincide with the Median.
4. These measures are calculated based on the 'Value' of the items rather than their 'Rank'.

Which of the following are correct?

(A) 1, 2, and 3 only
(B) All of the above
(C) 2, 3, and 4 only
(D) 1 and 3 only

Key Takeaways · Quick Revision

Median Limitations
Not based on all values; can't be combined algebraically; needs sorting. NOT affected by extremes.

Quartiles & IQR
Q_1 = 25%, Q_2 = Median = 50%, Q_3 = 75%. IQR = $Q_3 - Q_1$. $Q_2 \neq$ AM of Q_1 and Q_3.

Partition Values
$Q_2 = D_5 = P_{50}$ = Median. Always arrange data in ascending order first.

Empirical Formula
Mode = 3 × Median − 2 × Mean (for moderately skewed distributions).

Weighted Mean
= ΣwX / Σw. Applies to ALL means. Simple AM is a special case (w = 1).

Grouped Mean
Direct, Assumed Mean and Step Deviation methods all give identical results.

Open-Ended Data
AM cannot be calculated. Median is the best choice.

Skewness Rule
Mean > Median > Mode (positive) | Mean < Median < Mode (negative).



Unit 2 · Index Numbers

Construction, Laspeyres, Paasche, Fisher, tests of adequacy, CPI, WPI and chain base

30 MCQs

Section A · Multiple Choice Questions

1 **An index number is best described as a statistical device used to:**

(A) Measure the absolute value of a single variable at a point in time

(B) Measure the relative change in a variable (or group of variables) over time, space, or other characteristics

(C) Measure only the change in the price of one specific commodity

(D) Classify data into qualitative categories

2 **Index numbers are broadly classified into which of the following types?**

(A) Price index, Quantity index, and Value index only

(B) Price index, Quantity index, Value index, and Special-purpose index (e.g., cost of living index)

(C) Only Price index and Wage index

(D) Only Laspeyres and Paasche index

3 **In the construction of index numbers, the 'Weighted Aggregative Method' differs from the 'Simple Aggregative Method' mainly because it:**

(A) Uses only current year prices

(B) Assigns relative importance (weights) to different commodities based on quantities

(C) Ignores the base year entirely

(D) Can be used only for one commodity

4 **The prices (in Rs.) of four commodities in the base year and current year are given below. The Simple Aggregative Price Index is approximately:**

Commodity	Base year price	Current year price
Wheat	20	25
Rice	30	35
Sugar	15	18
Oil	40	45

(A) 105.00 **(B)** 111.50

(C) 117.14 **(D)** 123.00

5 **The Laspeyres Price Index uses which quantities as weights?**

(A) Current year quantities (q_1)
(B) Base year quantities (q_0)
(C) The average of base and current year quantities
(D) Geometric mean of q_0 and q_1

6 **The Paasche Price Index formula is given by:**

(A) $(\Sigma p_1 q_0 / \Sigma p_0 q_0) \times 100$
(B) $(\Sigma p_1 q_1 / \Sigma p_0 q_1) \times 100$
(C) $(\Sigma p_0 q_1 / \Sigma p_1 q_0) \times 100$
(D) $(\Sigma p_0 q_0 / \Sigma p_1 q_1) \times 100$

7 **Given the following data, the Laspeyres Price Index (P_{01}) is approximately:**

Commodity	p_0	q_0	p_1	q_1
A	10	20	12	18
B	8	15	9	20
C	5	30	6	25

(A) 109.50
(B) 112.75
(C) 118.09
(D) 121.30

8 **Using the same data as in the previous question (commodities A, B, C), the Paasche Price Index (P_{01}) is approximately:**

Commodity	p_0	q_0	p_1	q_1
A	10	20	12	18
B	8	15	9	20
C	5	30	6	25

(A) 110.20
(B) 114.60
(C) 117.42
(D) 120.05

9 **Fisher's Ideal Index is defined as:**

(A) The arithmetic mean of Laspeyres and Paasche indices
(B) The geometric mean of Laspeyres and Paasche indices
(C) The harmonic mean of Laspeyres and Paasche indices
(D) The simple average of base and current year prices

10 **Using the Laspeyres (≈ 118.09) and Paasche (≈ 117.42) values calculated above, Fisher's Ideal Index (P_{01}) is approximately:**

(A) 115.20
(B) 116.80
(C) 117.75
(D) 119.40

11 **Fisher's Index is called an 'Ideal Index Number' primarily because:**

(A) It is the simplest method to compute manually
(B) It requires no data on quantities
(C) It satisfies both the Time Reversal Test and the Factor Reversal Test
(D) It always gives the same value as the Simple Aggregative Index

12 **The Time Reversal Test is satisfied when an index number formula gives:**

(A) $P_{01} \times P_{10} = 1$
(B) $P_{01} + P_{10} = 1$
(C) $P_{01} \div P_{10} = 100$
(D) $P_{01} - P_{10} = 0$

13 **The Factor Reversal Test states that the product of the Price Index and the Quantity Index (with the roles of price and quantity interchanged) should equal:**

(A) The Simple Aggregative Index
(B) The True Value Ratio ($\Sigma p_1 q_1 / \Sigma p_0 q_0$)
(C) Zero
(D) 100 always

14 **Which of the following statements about Laspeyres' and Paasche's indices is TRUE?**

(A) Both satisfy the Time Reversal Test and Factor Reversal Test
(B) Neither satisfies the Time Reversal Test nor the Factor Reversal Test
(C) Laspeyres satisfies the Factor Reversal Test but not the Time Reversal Test
(D) Paasche satisfies the Time Reversal Test but not the Factor Reversal Test

15 **The Marshall-Edgeworth Index uses which of the following as weights?**

(A) Only base year quantities
(B) Only current year quantities
(C) The average (or sum) of base year and current year quantities
(D) Weighted average of prices

16 **The Value Index Number (V_{01}) is calculated using the formula:**

(A) $(\Sigma p_1 q_1 / \Sigma p_0 q_0) \times 100$
(B) $(\Sigma p_1 q_0 / \Sigma p_0 q_1) \times 100$
(C) $(\Sigma q_1 / \Sigma q_0) \times 100$
(D) $(\Sigma p_1 / \Sigma p_0) \times 100$

17 **Using the earlier data for commodities A, B and C ($\Sigma p_0q_0 = 470$, $\Sigma p_1q_1 = 546$), the Value Index (V_{01}) is approximately:**

(A) 108.40
(B) 112.60
(C) 116.17
(D) 121.90

18 **The Consumer Price Index (CPI) primarily measures changes in:**

(A) The wholesale prices of goods sold in bulk by producers
(B) The general price level of goods and services purchased by a specific group of consumers for their day-to-day living
(C) The prices of only agricultural raw materials
(D) The stock market index of a country

19 **CPI is generally constructed using which method, also known as the Family Budget Method?**

(A) Simple Aggregative Method
(B) Weighted Average of Price Relatives Method
(C) Chain Base Method only
(D) Index of Industrial Production Method

20 **Which of the following statements about the Wholesale Price Index (WPI) is CORRECT?**

(A) WPI includes prices of services such as healthcare and education
(B) WPI measures price changes at the wholesale / first bulk transaction stage and excludes services
(C) WPI is used exclusively to measure retail inflation for consumers
(D) WPI is calculated using only the Paasche formula

21 **Consider the following statements:**
(I) WPI does not directly reflect the cost of living of consumers.
(II) CPI is used by the government to determine dearness allowance (DA) for employees.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

22 **Consider the following statements about index numbers:**
(I) Laspeyres' Index tends to overestimate the rise in price level.
(II) Paasche's Index tends to underestimate the rise in price level.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

23 **In the Chain Base Method of constructing index numbers, the index for each year is calculated using:**

(A) A single fixed base year throughout the series
(B) The preceding year as the base, and the resulting 'link relatives' are chained together
(C) Only the current year data, ignoring all previous years
(D) The average of all years in the series as base

24 **A major advantage of the Chain Base Method over the Fixed Base Method is that it:**

(A) Requires less data collection every year
(B) Allows new commodities to be introduced and old ones dropped as consumption patterns change over time
(C) Always gives lower index values
(D) Eliminates the need for weights

25 **Index numbers are widely described as 'economic barometers' because they:**

(A) Predict weather conditions affecting agricultural output
(B) Measure and indicate the general trend of business and economic activity, including inflation, over time
(C) Are used only by meteorological departments
(D) Have no practical application outside academic study

Section B · Statement-Based Questions

26 **Consider the following statements regarding the construction of index numbers:**
(I) The base year of an index number series should ideally be a normal year, free from abnormal events such as wars, famines, or economic crises.
(II) A good index number formula should satisfy as many mathematical tests (such as the Time Reversal Test and Factor Reversal Test) as possible.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

27 **Consider the following statements:**
(I) A quantity index number measures changes in the physical volume of production, consumption, or distribution of goods over time.
(II) Laspeyres' Quantity Index is given by the formula $Q_{01}(L) = (\Sigma q_1 p_1 / \Sigma q_0 p_1) \times 100$.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

28 **Consider the following statements about the Simple Average of Relatives Method:**
(I) This method requires that weights be assigned to each commodity based on its importance in total consumption expenditure.
(II) In this method, price relatives of all commodities are treated with equal importance, and no weights are used.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

29 **Consider the following statements:**
(I) An index number constructed for measuring changes in wholesale prices can be directly and validly used to measure the cost of living of industrial workers without any adjustment.
(II) Once an index number series is constructed with a particular base year, that base year must remain fixed forever and can never be revised.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)

30 **Consider the following statements:**
(I) A price relative for a commodity is calculated as $(p_1/p_0) \times 100$, where p_0 and p_1 denote the prices in the base year and current year respectively.
(II) Index numbers are conventionally expressed as percentages, but the '%' symbol is usually omitted while writing the index value.
Which of the statements is/are correct?

(A) Only (I)
(B) Only (II)
(C) Both (I) and (II)
(D) Neither (I) nor (II)



Unit 3 · Theory of Attributes & Association

Attributes, classification, ultimate class frequencies, coefficient of association, chi-square and rank correlation

41 MCQs

Section A · Original MCQs

1 **A qualitative characteristic is called:**

(A) Constant **(B)** Variable
(C) Attribute **(D)** Association

2 **If an attribute has two classes, it is called:**

(A) Trichotomy **(B)** Simple classification
(C) Dichotomy **(D)** Manifold classification

3 **If an attribute has more than two classes, it is said to be:**

(A) Manifold classification **(B)** Trichotomy
(C) Dichotomous **(D)** All of the above

4 **The χ^2-test should not be used if any expected frequency is:**

(A) Less than 10 **(B)** Less than 5
(C) Equal to 5 **(D)** More than 5

5 **The total of all frequencies N is of order:**

(A) Zero **(B)** One
(C) Two **(D)** Three

6 **In case of consistent data, no class frequency can be:**

(A) Positive **(B)** Negative
(C) Both (a) and (b) **(D)** Neither (a) nor (b)

7 **With two attributes A and B, the total number of ultimate class frequencies is:**

(A) Two **(B)** Four
(C) Six **(D)** Nine

8 **If (AB) = (A)(B)/N, the two attributes A and B are:**

(A) Independent **(B)** Dependent
(C) Correlated **(D)** Quantitative

9 **The coefficient of association (Q) always lies between:**

(A) −1 and +1 **(B)** 0 and 1
(C) −1 and 0 **(D)** 0 and 5

10 **If the class frequency (AB) = 0, the value of Q is equal to:**

(A) 0 **(B)** 1
(C) −1 **(D)** 0 to 1

11 **If the class frequency (Aβ) = 0, the value of Q will be:**

(A) −1 **(B)** +1
(C) 0 **(D)** ∞

12 **If for two attributes the class frequencies (AB) = (Aβ) = 0, the coefficient of association is:**

(A) −1 **(B)** +1
(C) 0 **(D)** ∞

13 **If for two attributes (AB)(αβ) = (Aβ)(αB), then Q is equal to:**

(A) 0 **(B)** −1
(C) +1 **(D)** ∞

14 **If two attributes A and B are independent, the coefficient of association is:**

(A) −1 **(B)** +1
(C) 0 **(D)** 0.5

15 **If for two attributes A and B, (AB)(αβ) = (Aβ)(αB), then A and B are called:**

(A) Independent **(B)** Positively associated
(C) Negatively associated **(D)** All of the above

16 **If (AB)(αβ) > (Aβ)(αB), then A and B are said to be:**

(A) Negatively associated **(B)** Positively associated
(C) Independent **(D)** Difficult to tell

17 **If two attributes A and B hold the relation (AB)(αβ) < (Aβ)(αB), then:**

(A) A and B are positively associated **(B)** A and B are independent
(C) A and B are negatively associated **(D)** A and B are dependent

18 **Two attributes A and B are said to be positive if (AB) is:**

(A) Greater than (A)(B)/N
(B) Less than (A)(B)/N
(C) Equal to (A)(B)/N
(D) Equal to zero

19 **If two attributes A and B have perfect positive association, the coefficient of association equals:**

(A) $+1$
(B) -1
(C) 0
(D) $(r-1)(c-1)$

20 **In a Chi-square distribution, no expected frequency should be:**

(A) More than 5
(B) Less than 5
(C) Equal to 5
(D) Both (a) and (c)

21 **Which of the following values is impossible for a Chi-square statistic?**

(A) Greater than zero
(B) Less than zero
(C) Equal to zero
(D) Not equal to zero

22 **A characteristic which varies in quality from one individual to another is called:**

(A) Variable
(B) Constant
(C) Attribute
(D) Statistic

23 **The shape of the Chi-square distribution is:**

(A) Symmetrical
(B) Positively skewed
(C) Negatively skewed
(D) All of the above

24 **The eye colour of 100 women is an example of:**

(A) Variable
(B) Constant
(C) Attribute
(D) Discrete variable

25 **The value of the Chi-square statistic is always zero if:**

(A) $\Sigma f_o = \Sigma f_e$
(B) $f_o = f_e$ for every cell
(C) $f_o > f_e$
(D) $f_o < f_e$

26 **If a person ranks lowest on beauty and highest on intelligence, and another person ranks highest on beauty and lowest on intelligence, Spearman's coefficient of rank correlation is probably:**

(A) Zero
(B) Weak positive
(C) Perfect positive
(D) Perfect negative

Section B · Statement-Based MCQs

27 **Consider the following statements about qualitative characteristics:**
(i) A qualitative characteristic that varies from individual to individual is called an attribute.
(ii) Eye colour and blood group are examples of attributes.
(iii) An attribute can always be measured numerically on a continuous scale.
(iv) A characteristic with exactly two classes is called a dichotomy.
Which of the above statements is/are correct?

(A) (i) and (ii) only
(B) (i), (ii) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

28 **Consider the following statements about classification of attributes:**
(i) An attribute with exactly two classes is called simple classification (dichotomy).
(ii) An attribute with three classes is called a trichotomy.
(iii) An attribute with more than two classes is generally called manifold classification.
(iv) Manifold classification can never include a trichotomy.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

29 **Consider the following statements about the Chi-square test of association:**
(i) The Chi-square test should not be used if any expected cell frequency is less than 5.
(ii) The Chi-square statistic can take negative values.
(iii) The Chi-square distribution is positively skewed.
(iv) The Chi-square statistic equals zero only when observed frequency equals expected frequency in every cell.
Which of the above statements is/are correct?

(A) (i), (iii) and (iv) only
(B) (i) and (ii) only
(C) (ii) and (iii) only
(D) All of the above

30 **With reference to the total number of ultimate class frequencies for two attributes A and B, consider:**
(i) The four ultimate class frequencies are (AB), (Aβ), (αB) and (αβ).
(ii) The sum of all four ultimate class frequencies equals N, the total frequency.
(iii) The order of the total frequency N is always two.
(iv) Ultimate class frequencies can be negative in consistent data.
Which of the above statements is/are correct?

(A) (i) and (ii) only
(B) (i), (ii) and (iii) only
(C) (iii) and (iv) only
(D) All of the above

31 **Consider the following statements about independence of attributes A and B:**
(i) A and B are independent if (AB) = (A)(B)/N.
(ii) If A and B are independent, the coefficient of association Q equals 0.
(iii) Independence implies (AB)(αβ) = (Aβ)(αB).
(iv) Independent attributes always have a positive value of Q.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

32 **Consider the following statements about positive association between A and B:**
(i) A and B are positively associated if (AB) > (A)(B)/N.
(ii) A and B are positively associated if (AB)(αβ) > (Aβ)(αB).
(iii) Positive association means the presence of A is accompanied more often by the presence of B than expected under independence.
(iv) Positive association always means Q = −1.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iv) only
(D) All of the above

33 **Consider the following statements about negative association between A and B:**
(i) A and B are negatively associated if (AB)(αβ) < (Aβ)(αB).
(ii) Negative association means the presence of A tends to be accompanied by the absence of B.
(iii) Negative association implies Q must equal zero.
(iv) A negative value of the coefficient of association indicates negative association.
Which of the above statements is/are correct?

(A) (i), (ii) and (iv) only
(B) (i) and (iii) only
(C) (ii) and (iii) only
(D) All of the above

34 **Consider the following statements about the coefficient of association (Q):**
(i) Q always lies between -1 and $+1$.
(ii) If $(AB) = 0$, then $Q = -1$.
(iii) If $(A\beta) = 0$, then $Q = +1$.
(iv) If both $(AB) = 0$ and $(A\beta) = 0$, then Q is indeterminate (of the form ∞ or $0/0$).
Which of the above statements is/are correct?

(A) (i), (ii), (iii) and (iv) **(B)** (i) and (ii) only
(C) (ii) and (iii) only **(D)** (i) and (iv) only

35 **Consider the following statements about perfect association:**
(i) Perfect positive association between A and B gives $Q = +1$.
(ii) Perfect negative association between A and B gives $Q = -1$.
(iii) Perfect association can only occur when one of the ultimate class frequencies is zero.
(iv) Perfect association means the two attributes are completely independent.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only **(B)** (i) and (iv) only
(C) (ii) and (iii) only **(D)** All of the above

36 **Consider the following statements about degrees of freedom and decision-making in a Chi-square test:**
(i) Degrees of freedom for an $r \times c$ contingency table is $(r - 1)(c - 1)$.
(ii) If the calculated χ^2 value exceeds the tabulated (critical) value at a given level of significance, H_0 is rejected at that level.
(iii) A higher degrees of freedom always means a lower critical value of χ^2.
(iv) The decision to reject or not reject H_0 depends on comparing calculated χ^2 with the tabulated χ^2.
Which of the above statements is/are correct?

(A) (i), (ii) and (iv) only **(B)** (i) and (iii) only
(C) (ii) and (iii) only **(D)** All of the above

37 **Consider the following statements about ranking data for Spearman's rank correlation:**
(i) When converting scores to ranks, rank 1 can be assigned to either the highest or the lowest score, as long as it is consistent for both variables.
(ii) If two individuals show exactly opposite rankings on two characteristics, the rank correlation coefficient is close to $+1$.
(iii) If two individuals show exactly opposite rankings on two characteristics, the rank correlation coefficient is close to -1.
(iv) Tied ranks are simply ignored and excluded from the calculation.
Which of the above statements is/are correct?

(A) (i) and (iii) only **(B)** (i), (ii) and (iv) only
(C) (ii) and (iv) only **(D)** All of the above

38 **Consider the following statements about the coefficient of association versus correlation:**
(i) The coefficient of association (Q) is used for qualitative (categorical) data.
(ii) The coefficient of correlation is used for quantitative (measurable) data.
(iii) Both Q and the correlation coefficient lie within the range -1 to $+1$.
(iv) Q can be calculated only when the attributes have more than two classes each.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

39 **Consider the following statements regarding consistency of data in attribute classification:**
(i) In consistent data, no ultimate class frequency can be negative.
(ii) In consistent data, no class frequency (such as (A) or (B)) can exceed the total frequency N.
(iii) Inconsistent data may still be used validly to compute Q.
(iv) Checking for non-negative frequencies is one way to verify the consistency of given data.
Which of the above statements is/are correct?

(A) (i), (ii) and (iv) only
(B) (i) and (iii) only
(C) (ii) and (iii) only
(D) All of the above

40 **Consider the following statements about the Chi-square statistic:**
(i) χ^2 is always greater than or equal to zero.
(ii) χ^2 can never be negative because it is a sum of squared deviations divided by expected frequency.
(iii) A χ^2 value of zero indicates observed and expected frequencies are identical in every cell.
(iv) χ^2 measures the strength of positive association only.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

41 **Consider the following statements about cross-products of ultimate class frequencies:**
(i) If $(AB)(\alpha\beta) = (A\beta)(\alpha B)$, the attributes are independent.
(ii) If $(AB)(\alpha\beta) > (A\beta)(\alpha B)$, the attributes are positively associated.
(iii) If $(AB)(\alpha\beta) < (A\beta)(\alpha B)$, the attributes are negatively associated.
(iv) These cross-product comparisons are unrelated to the sign of Q.
Which of the above statements is/are correct?

(A) (i), (ii) and (iii) only
(B) (i) and (iv) only
(C) (ii) and (iii) only
(D) All of the above

Answer Key

Unit 1 · Measures of Central Tendency

26 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**A**	4	**C**	7	**C**	10	**C**	13	**B**	16	**C**	19	**D**	22	**A**	25	**D**		
2	**A**	5	**B**	8	**D**	11	**A**	14	**D**	17	**B**	20	**A**	23	**C**	26	**A**		
3	**A**	6	**B**	9	**B**	12	**A**	15	**C**	18	**C**	21	**B**	24	**A**				

Note: Answers for this unit were not in the source files; they have been worked out and added. In Q2 statement 4 is treated as false, because a symmetric distribution can be bimodal (mean = median, but the modes differ).

Unit 2 · Index Numbers

30 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**B**	4	**C**	7	**C**	10	**C**	13	**B**	16	**A**	19	**B**	22	**C**	25	**B**	28	**B**
2	**B**	5	**B**	8	**C**	11	**C**	14	**B**	17	**C**	20	**B**	23	**B**	26	**C**	29	**D**
3	**B**	6	**B**	9	**B**	12	**A**	15	**C**	18	**B**	21	**C**	24	**B**	27	**A**	30	**C**

Unit 3 · Theory of Attributes & Association

41 MCQs

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	6	**B**	11	**B**	16	**B**	21	**B**	26	**D**	31	**A**	36	**A**	41	**A**		
2	**C**	7	**B**	12	**D**	17	**C**	22	**C**	27	**B**	32	**A**	37	**A**				
3	**A**	8	**A**	13	**A**	18	**A**	23	**B**	28	**A**	33	**A**	38	**A**				
4	**B**	9	**A**	14	**C**	19	**A**	24	**C**	29	**A**	34	**A**	39	**A**				
5	**A**	10	**C**	15	**A**	20	**B**	25	**B**	30	**A**	35	**A**	40	**A**				

Note: Q12: the source key gives (d) ∞; strictly, the coefficient is indeterminate (0/0) when two cell frequencies are zero.

Brief Solutions · Index Numbers

Q	Ans	Solution
1	**B**	By definition, an index number measures the relative (percentage) change in the level of a variable or group of variables between two situations, usually a base period and a current period.
2	**B**	Standard classification: Price Index, Quantity (Volume) Index, Value Index, and special-purpose indices such as the Cost of Living Index / CPI.
3	**B**	The weighted aggregative method attaches weights (usually quantities) to individual commodities to reflect their relative importance, unlike the simple aggregative method which just totals prices.
4	**C**	$\Sigma p_0 = 20 + 30 + 15 + 40 = 105$; $\Sigma p_1 = 25 + 35 + 18 + 45 = 123$. Simple Aggregative Index = $(\Sigma p_1 / \Sigma p_0) \times 100 = (123/105) \times 100 = 117.14$.
5	**B**	Laspeyres' Index: $P_{01}(L) = (\Sigma p_1 q_0 / \Sigma p_0 q_0) \times 100$, i.e., it weights prices with base-year quantities.
6	**B**	Paasche's Index: $P_{01}(P) = (\Sigma p_1 q_1 / \Sigma p_0 q_1) \times 100$, using current-year quantities (q_1) as weights.
7	**C**	$\Sigma p_0 q_0 = (10\times20) + (8\times15) + (5\times30) = 200 + 120 + 150 = 470$; $\Sigma p_1 q_0 = (12\times20) + (9\times15) + (6\times30) = 240 + 135 + 180 = 555$. Laspeyres = $(555/470) \times 100 = 118.09$.
8	**C**	$\Sigma p_0 q_1 = (10\times18) + (8\times20) + (5\times25) = 180 + 160 + 125 = 465$; $\Sigma p_1 q_1 = (12\times18) + (9\times20) + (6\times25) = 216 + 180 + 150 = 546$. Paasche = $(546/465) \times 100 = 117.42$.
9	**B**	Fisher's Ideal Index: $P_{01}(F) = \sqrt{(\text{Laspeyres} \times \text{Paasche})}$. It is called 'ideal' because it satisfies both the Time Reversal Test and the Factor Reversal Test.
10	**C**	Fisher's Index = $\sqrt{(L \times P)} = \sqrt{(118.09 \times 117.42)} = \sqrt{13{,}866} \approx 117.75$.
11	**C**	Fisher's Index uniquely satisfies both the Time Reversal Test and the Factor Reversal Test among the common index formulae, which is why it is termed 'ideal'.
12	**A**	The Time Reversal Test requires that the index for period 0 to 1, multiplied by the index for period 1 to 0, equals unity ($P_{01} \times P_{10} = 1$), so the result is independent of the direction of the time comparison.
13	**B**	Factor Reversal Test: $P_{01} \times Q_{01} = \Sigma p_1 q_1 / \Sigma p_0 q_0$, i.e., the product of the price index and the corresponding quantity index should equal the true value ratio.
14	**B**	Neither Laspeyres' nor Paasche's index satisfies the Time Reversal Test or the Factor Reversal Test; only Fisher's Ideal Index satisfies both.
15	**C**	Marshall-Edgeworth Index = $[\Sigma p_1(q_0 + q_1) / \Sigma p_0(q_0 + q_1)] \times 100$, using the sum / average of base and current year quantities as weights.
16	**A**	Value Index: $V_{01} = (\Sigma p_1 q_1 / \Sigma p_0 q_0) \times 100$. It reflects the combined effect of both price and quantity changes.
17	**C**	Value Index = $(\Sigma p_1 q_1 / \Sigma p_0 q_0) \times 100 = (546/470) \times 100 = 116.17$.
18	**B**	CPI measures changes over time in the general level of retail prices of a fixed basket of goods and services consumed by a specific category of consumers (e.g., industrial workers, agricultural labourers, urban non-manual employees).
19	**B**	CPI is commonly constructed by the Weighted Average of Price Relatives Method (Family Budget Method): CPI = Σ(PW) / ΣW, where P is the price relative and W is the weight (expenditure) of each item.

Q	Ans	Solution
20	**B**	WPI tracks prices at the wholesale (first bulk sale) level, covering primary articles, fuel and power, and manufactured products; it does not include services (unlike CPI).
21	**C**	WPI reflects wholesale / producer-level prices and does not directly capture retail cost of living, so (I) is correct. CPI, reflecting retail prices actually paid by consumers, is used as the basis for calculating dearness allowance, so (II) is also correct.
22	**C**	Consumers typically shift consumption away from goods whose prices rise faster, so base-year quantities (Laspeyres) tend to overstate the price rise, while current-year quantities (Paasche) tend to understate it. This is why Fisher's Index (the geometric mean of the two) is preferred as a balanced measure.
23	**B**	In the Chain Base Method, each year's index (link relative) is computed with the immediately preceding year as base; these link relatives are then chained (linked) to obtain the index on a common base.
24	**B**	The Chain Base Method is more flexible because the basket of commodities and their weights can be revised periodically, allowing new items to be added and obsolete ones removed as economic conditions change.
25	**B**	Index numbers are called economic barometers because they summarise and indicate overall trends and fluctuations in economic / business activity (prices, production, cost of living, etc.), helping in policy-making and forecasting.
26	**C**	Both statements describe standard criteria for a sound index number: the base period should be normal and free from abnormal fluctuations, and the formula chosen should ideally satisfy the recognised mathematical tests (Time Reversal, Factor Reversal, Circular Test, etc.).
27	**A**	Statement (I) correctly defines a quantity index. Statement (II) is incorrect: the formula shown (using current-year prices p_1 as weights) is Paasche's Quantity Index. Laspeyres' Quantity Index is $Q_{01}(L) = (\Sigma q_1 p_0 / \Sigma q_0 p_0) \times 100$, using base-year prices (p_0) as weights.
28	**B**	Statement (I) is incorrect: assigning weights based on relative importance describes the Weighted Average of Relatives Method. Statement (II) is correct: in the Simple Average of Relatives Method all price relatives are averaged with equal importance and no weights.
29	**D**	Both statements are incorrect. (I) is a classic misuse of index numbers: an index built for one purpose (e.g., wholesale prices) is not automatically valid for another (e.g., cost of living), since the basket and weights differ. (II) is false: base years are periodically revised (rebasing) to keep the index relevant.
30	**C**	Both statements are correct: the price relative $(p_1/p_0) \times 100$ is the basic building block of relative methods, and index values are computed on a percentage basis but conventionally reported as plain numbers without the '%' sign.

PrepX IQ — compiled by Shahid Ibn Amin.

Unit 1 · Vital Statistics

30 MCQs

Mortality rates, natural increase, vital index and reproduction rates

Section A · Direct MCQs

1 **Mortality rate is also called:**

(A) Birth rate **(B)** Fertility rate
(C) Death rate **(D)** Morbidity rate

2 **Which of the following is NOT one of the three main measures of mortality?**

(A) Net Death Rate **(B)** Crude Death Rate
(C) Specific Death Rate **(D)** Standardised Death Rate

3 **In the Crude Death Rate, the denominator is the total population at the:**

(A) Beginning of the period **(B)** Middle of the period
(C) End of the period **(D)** Average of all age groups

4 **The simplest way to compute the mortality rate is:**

(A) Specific Death Rate **(B)** Standardised Death Rate
(C) Gross Reproduction Rate **(D)** Crude Death Rate

5 **Vital Index is the ratio of total live-births to:**

(A) Total population **(B)** Total deaths
(C) Total female population **(D)** Total still-births

6 **Crude Rate of Natural Increase (CRNI) is equal to:**

(A) Crude Death Rate minus Crude Birth Rate
(B) Crude Birth Rate plus Crude Death Rate
(C) Crude Birth Rate minus Crude Death Rate
(D) Crude Birth Rate divided by Crude Death Rate

7 **If the Net Reproduction Rate (NRR) equals 1, the population will:**

(A) Remain the same **(B)** Expand
(C) Diminish **(D)** Double

8 **Net Reproduction Rate and Gross Reproduction Rate consider only:**

(A) Male population
(B) Total population
(C) Elderly population
(D) Female population or female live-births

9 **Which measure is better than the Crude Death Rate for comparing mortality among homogeneous sub-groups based on age or sex?**

(A) Vital Index
(B) Specific Death Rate
(C) Crude Rate of Natural Increase
(D) Gross Reproduction Rate

Section B · Statement-Based, Assertion-Reason and Match the Following (UPSC pattern)

10 **Consider the following statements about Crude Death Rate (CDR):**

1. It is the ratio of total deaths in a period to the total population at the middle of that period, multiplied by 1000.
2. It is easy to calculate and requires minimal data.
3. It can be reliably used to compare mortality of two regions even when their age-sex compositions differ.

Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

11 **Consider the following statements about Specific Death Rate (SDR):**

1. It is the ratio of deaths in a specific section of the population to the total population of that same section at mid-period.
2. The specific section can be based on age, sex, race, religion or cause of death.
3. Its computation is simpler and less time-consuming than that of the Crude Death Rate.

Which of the statements given above is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 1 and 2 only
(D) 1, 2 and 3

12 **Consider the following statements:**

1. The Crude Death Rate does not account for the age-sex composition of the population.
2. The probability of death is equal in every region at all ages.
3. Death rates may differ between males and females even at the same age.
4. Specific Death Rate is a better method than Crude Death Rate for comparing homogeneous sub-groups.

How many of the statements given above are correct?

(A) Only two
(B) Only three
(C) All four
(D) Only one

13 **Consider the following statements about Standardised Death Rate:**

1. It can be considered a weighted average of the specific death rates.
2. The population of each section acts as the weight when specific death rates are combined.
3. It is the simple arithmetic mean of all specific death rates.

Which of the statements given above is/are correct?

(A) 1 only
(B) 2 only
(C) 2 and 3 only
(D) 1 and 2 only

14 **Consider the following statements about measuring population growth:**

1. Crude Rate of Natural Increase is the difference between Crude Birth Rate and Crude Death Rate.
2. Vital Index is the ratio of total live-births to total deaths in a certain period.
3. Crude Rate of Natural Increase and Vital Index are the most widely used methods of measuring population growth.

Which of the statements given above is/are correct?

(A) 3 only
(B) 2 and 3 only
(C) 1 and 2 only
(D) 1, 2 and 3

15 **Consider the following statements about Net Reproduction Rate (NRR):**

1. If NRR = 1, the population remains the same as newborn females exactly replace themselves.
2. If NRR > 1, the population will expand.
3. If NRR < 1, the population will diminish.
4. It assumes that each woman experiences both age-specific fertility and mortality rates.

Which of the statements given above are correct?

(A) 1, 2, 3 and 4
(B) 1, 2 and 3 only
(C) 2 and 4 only
(D) 3 and 4 only

16 **Consider the following drawbacks of Gross Reproduction Rate (GRR):**

1. It assumes the female newborn will stay alive throughout her child-bearing age.
2. It does not consider that females may experience age-specific mortality rates.
3. It takes into account both age-specific fertility and age-specific mortality.
4. It does not consider that the age-sex ratio of all females is not the same.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 1, 2 and 4 only
(C) 2, 3 and 4 only
(D) 1, 3 and 4 only

17 **Given below are two statements:**

Assertion (A): The Crude Death Rate cannot be used to compare mortality between two different regions.

Reason (R): The age-sex compositions of the two regions may not be the same.

In the context of the above, which one of the following is correct?

(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

18 **Given below are two statements:**

Assertion (A): An NRR value of 1 indicates a stationary (unchanging) population.

Reason (R): At NRR = 1, newborn females will have fewer daughters than needed to replace themselves.

In the context of the above, which one of the following is correct?

(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

19 **Match List I with List II and select the correct answer using the codes below:**

List I	List II
A. Crude Death Rate	1. Total live-births divided by total deaths
B. Specific Death Rate	2. Deaths in a specific class divided by population of that class
C. Vital Index	3. Considers both fertility and mortality of females
D. Net Reproduction Rate	4. Total deaths divided by total mid-period population

(A) A-2, B-4, C-1, D-3

(B) A-4, B-2, C-3, D-1

(C) A-4, B-2, C-1, D-3

(D) A-1, B-2, C-4, D-3

20 **Which of the following statements is NOT correct?**

(A) Crude Rate of Natural Increase is the difference between Crude Birth Rate and Crude Death Rate.

(B) Vital Index is the difference between total live-births and total deaths.

(C) GRR can be multiplied by 1000 to express it per thousand females.

(D) Reproduction rates are based on females as they are more exposed to child-bearing.

Section C · Numerical MCQs

21 **In a town, the mid-year population is 50,000 and the number of deaths in the year is 600. The Crude Death Rate (per 1000) is:**

(A) 1.2

(B) 12

(C) 120

(D) 83.3

22 **If the Crude Birth Rate of a region is 22.4 per 1000 and the Crude Death Rate is 7.9 per 1000, the Crude Rate of Natural Increase (per 1000) is:**

(A) 30.3

(B) 2.8

(C) 14.5

(D) 15.5

23 **In a district there were 1,800 live-births and 600 deaths during a year. The Vital Index (as a simple ratio) is:**

(A) 3.0

(B) 0.33

(C) 1.5

(D) 6.0

24 **In the age group 20 to 29 years, the mid-period population is 8,000 and deaths are 40. The Specific Death Rate (per 1000) is:**

(A) 0.5 **(B)** 50

(C) 20 **(D)** 5

25 **The following data is given for a village:**

Age group	Population	Deaths
0 to 20	2,000	30
21 to 40	3,000	45
41 and above	5,000	25

The Crude Death Rate (per 1000) of the village is:

(A) 7.5 **(B)** 12.5

(C) 10.0 **(D)** 1.0

26 **The specific death rates (per 1000) and populations of three age groups are given below:**

Age group	Specific Death Rate	Population
20 to 30	3	2,000
31 to 40	6	3,000
41 to 50	10	5,000

The Standardised Death Rate is:

(A) 6.33 **(B)** 8.0

(C) 19.0 **(D)** 7.4

27 **A district has the following data:**

Age group	Population	Deaths
0 to 14	4,000	60
15 to 59	9,000	90
60 and above	2,000	100

The Crude Death Rate (per 1000) of the district is approximately:

(A) 16.67 **(B)** 25.0

(C) 6.0 **(D)** 1.67

28 **Using the data of Q27 (age group 60 and above: population 2,000, deaths 100), the Specific Death Rate (per 1000) for this group is:**

(A) 5 **(B)** 20

(C) 50 **(D)** 500

29 **A city has a mid-year population of 2,00,000, a Crude Birth Rate of 18 per 1000 and a Crude Death Rate of 6 per 1000. The number of persons added by natural increase in a year is:**

(A) 1,200 **(B)** 2,400

(C) 3,600 **(D)** 4,800

30 **The Crude Death Rate of a town is 9.5 per 1000 and its mid-year population is 40,000. The total number of deaths in that year is:**

(A) 95 **(B)** 3,800

(C) 420 **(D)** 380



Answer Key

30 MCQs

Unit 1 · Vital Statistics

Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
1	**C**	4	**D**	7	**A**	10	**A**	13	**D**	16	**B**	19	**C**	22	**C**	25	**C**	28	**C**
2	**A**	5	**B**	8	**D**	11	**C**	14	**C**	17	**A**	20	**B**	23	**A**	26	**D**	29	**B**
3	**B**	6	**C**	9	**B**	12	**B**	15	**A**	18	**C**	21	**B**	24	**D**	27	**A**	30	**D**

Brief Solutions · Vital Statistics

Correct option and explanation for every question

Q	Ans	Solution
1	**C**	**Death rate** Mortality rate is also called the death rate: the number of deaths occurring in a defined population.
2	**A**	**Net Death Rate** The three measures are Crude, Specific and Standardised Death Rate. Net Death Rate is not one of them.
3	**B**	**Middle of the period** CDR = (total deaths in a period / total population at the middle of that period) × 1000.
4	**D**	**Crude Death Rate** CDR is the simplest method and needs minimal data.
5	**B**	**Total deaths** Vital Index = total live-births / total deaths in a given period.
6	**C**	**Crude Birth Rate minus Crude Death Rate** CRNI = Crude Birth Rate minus Crude Death Rate.
7	**A**	**Remain the same** NRR = 1 means newborn females exactly replace themselves, so the population stays the same.
8	**D**	**Female population or female live-births** Both reproduction rates consider only females, as females are more exposed to child-bearing.
9	**B**	**Specific Death Rate** SDR gives an idea of each homogeneous sub-group (age, sex etc.), so it is better than CDR for comparing sub-groups.
10	**A**	**1 and 2 only** Statements 1 and 2 are correct. Statement 3 is wrong because CDR cannot compare regions with different age-sex compositions.
11	**C**	**1 and 2 only** Statements 1 and 2 are correct. Statement 3 is wrong: SDR is more difficult and time-consuming to compute than the other methods.
12	**B**	**Only three** Statements 1, 3 and 4 are correct. Statement 2 is wrong: the probability of death is not equal across regions and ages.
13	**D**	**1 and 2 only** Standardised Death Rate is a weighted average (population as weights), not a simple mean, so 1 and 2 are correct.
14	**C**	**1 and 2 only** Statements 1 and 2 are correct. Statement 3 is wrong: despite being easy, these two methods are not the widely used ones. NRR and GRR are.

Q	Ans	Solution
15	A	**1, 2, 3 and 4** All four statements are correct as per the definition and interpretation of NRR.
16	B	**1, 2 and 4 only** GRR assumes survival through child-bearing age, ignores age-specific mortality, and ignores that age-sex ratios differ. Statement 3 describes NRR, not GRR.
17	A	**Both A and R are true, and R is the correct explanation of A** CDR cannot compare two regions precisely because their age-sex compositions may differ. R correctly explains A.
18	C	**A is true, but R is false** A is true. R is false: at NRR = 1, newborn females have exactly enough daughters to replace themselves, not fewer.
19	C	**A-4, B-2, C-1, D-3** CDR = total deaths / total mid-period population (4); SDR = deaths in a class / population of that class (2); Vital Index = live-births / deaths (1); NRR considers fertility and mortality both (3).
20	B	**Vital Index is the difference between total live-births and total deaths.** Vital Index is a ratio of live-births to deaths, not their difference. The difference between the crude rates is CRNI.
21	B	**12** CDR = (600 / 50,000) × 1000 = 12.
22	C	**14.5** CRNI = 22.4 − 7.9 = 14.5 per 1000.
23	A	**3.0** Vital Index = 1,800 / 600 = 3.0.
24	D	**5** SDR = (40 / 8,000) × 1000 = 5.
25	C	**10.0** Total deaths = 30 + 45 + 25 = 100; total population = 10,000. CDR = (100 / 10,000) × 1000 = 10.0.
26	D	**7.4** Weighted sum = (2000 × 3) + (3000 × 6) + (5000 × 10) = 74,000. Divide by total population 10,000 = 7.4. (The simple mean 6.33 is the trap option.)
27	A	**16.67** Total deaths = 250; total population = 15,000. CDR = (250 / 15,000) × 1000 = 16.67.
28	C	**50** SDR (60 and above) = (100 / 2,000) × 1000 = 50.
29	B	**2,400** CRNI = 18 − 6 = 12 per 1000. Natural increase = 12 × 200 = 2,400 persons.
30	D	**380** Deaths = CDR x population / 1000 = 9.5 × 40,000 / 1000 = 380.

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Source-tagged questions with brief explanations in the answer key

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COMPILED BY

Shahid Ibn Amin

Attempt each test in one sitting (about 15 minutes), then check the key and revise weak topics.

MOCK TEST 1

JKSSB FAA • Statistics

Questions: 10 **Maximum Marks:** 10 **Time:** 15 minutes

Choose the single best answer for each question. Each question carries 1 mark.

1. Which of the following is an example of **secondary data** for a researcher?

A) Responses obtained by the researcher through his own household survey
B) Answers given by farmers in an interview conducted by the researcher
C) Crop-yield readings recorded by the researcher in his own field trial
D) Population figures taken from a published Census of India report

2. Which method of collecting primary data is most suitable when the area of enquiry is wide and the respondents are literate but geographically scattered?

A) Mailed questionnaire method
B) Direct personal investigation
C) Indirect oral investigation
D) Observation method

3. Consider the following statements regarding the collection of data through questionnaires and schedules:

1. Unlike a questionnaire, which is typically filled out directly by the respondents themselves, a schedule is a set of questions filled in by the investigator or enumerator in a face-to-face interaction.
2. A well-designed questionnaire should deliberately include complex statistical calculations and technical jargon to rigorously test the analytical capability of literate respondents.
3. Conducting a pre-test of a preliminary draft questionnaire helps uncover latent shortcomings and allows researchers to refine questions before launching the final survey.

Which of the statements given above are CORRECT?

A) 1 and 2 only
B) 2 and 3 only
C) 1 and 3 only
D) 1, 2 and 3

4. Consider the following statements regarding tabulation:

1. Tabulation is the process of arranging classified data systematically in rows and columns.
2. A one-way (simple) table presents data relating to only one characteristic.
3. The source note is printed immediately below the title of a table.

Which of the statements given above are correct?

A) 1 and 3 only
B) 1 and 2 only
C) 2 and 3 only
D) 1, 2 and 3

5. Based on the examination components given below, calculate the weighted average score of the student.

Component	Weightage (w_i)	Marks scored (x_i)
Theory	4	60
Practical	3	80
Assignment	1	90
Project	2	75

A) 70.50
B) 72.00
C) 74.25
D) 76.25

6. **Statement I:** If a perfectly fair coin is tossed twice, the numerical probability of getting at least one Head is 3/4.

Statement II: In classical probability, the probability of an impossible event happening is mathematically recorded as -1.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

7. Consider the following statements regarding the Theory of Attributes:

1. Attributes are qualitative characteristics that can be described only by their presence or absence.
2. Two attributes A and B are independent if (AB) = (A)(B)/N.
3. The total number of observations, N, is a class frequency of the first order.

Which of the statements given above are correct?

A) 1 only
B) 2 and 3 only
C) 1 and 3 only
D) 1 and 2 only

8. From the data below, calculate **Laspeyres' price index number** for the current year (base year = 100).

Commodity	p_0	q_0	p_1	q_1
A	10	20	12	25
B	5	40	6	30
C	4	25	5	20

A) 121.0
B) 120.0
C) 118.5
D) 125.0

9. Consider the following statements regarding Demography and the Census:

1. Demography is the scientific study of human populations with respect to their size, composition and distribution.
2. In the “de jure” method of census, persons are counted at the place where they are physically found on the census night.
3. The first synchronous census of India was conducted in 1881.

Which of the statements given above are correct?

A) 1 and 2 only
B) 2 and 3 only
C) 1 and 3 only
D) 1, 2 and 3

10. **Statement I:** The Crude Death Rate (CDR) is calculated as the total number of deaths in a year divided by the total mid-year population, multiplied by 1,000.

Statement II: If a rural district has a mid-year population of exactly 50,000 people and records exactly 500 live births in that calendar year, its Crude Birth Rate (CBR) is exactly 10 per 1,000.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

MOCK TEST 2

JKSSB FAA • Statistics

Questions: 10 **Maximum Marks:** 10 **Time:** 15 minutes

Choose the single best answer for each question. Each question carries 1 mark.

1. **Statement I:** Primary data is original data collected directly by the investigator for the very first time for a specific statistical inquiry.

Statement II: A college student downloading a ready-made PDF report from the official Reserve Bank of India (RBI) website is an example of collecting Primary Data.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

2. Consider the following Assertion (A) and Reason (R):

Assertion (A): The mailed questionnaire method is not suitable when a large proportion of the respondents are illiterate.

Reason (R): This method is generally cheaper than the direct personal interview method.

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

3. Which of the following is **NOT** a characteristic of a good questionnaire?

A) Questions should be brief and unambiguous
B) Questions should follow a logical sequence
C) Clear instructions for filling the form should be given
D) Questions should be framed so as to lead the respondent towards a particular answer

4. **Statement I:** In a double (two-way) table, data are classified according to two characteristics.

Statement II: The stub of a table contains the headings of its columns.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

5. The following frequency distribution shows the marks obtained by 50 students. Find the **median** marks.

Marks	0–10	10–20	20–30	30–40	40–50
No. of students	5	8	15	12	10

A) 25 **B)** 26
C) 27 **D)** 28

6. Consider the following statements regarding probability:

1. If A and B are mutually exclusive events, $P(A \cup B) = P(A) + P(B)$.
2. If A and B are independent events, $P(A \cap B) = P(A) \times P(B)$.
3. Two mutually exclusive events, each having non-zero probability, are always independent.
4. For any event A, the probability of its complement is $P(A') = 1 - P(A)$.

How many of the above statements are correct?

A) Only one
B) Only two
C) Only three
D) All four

7. A public health researcher studies whether malnutrition (A) and anaemia (B) occur independently in a tribal population. Out of 500 children, 220 are malnourished, 180 are anaemic, and 95 are both malnourished and anaemic. Which of the following is the best interpretation of this data?

A) Attributes A and B are positively associated
B) Attributes A and B are negatively associated
C) Attributes A and B are independent because both are common conditions
D) No conclusion can be drawn regarding their association

8. Match the specific Index Number concept in List-I with its fundamental characteristic in List-II.

List-I (Index Number)	List-II (Characteristic)
P. Laspeyres' Index	1. Strictly uses the current year quantities as its weights.
Q. Paasche's Index	2. Specifically measures the change in the retail cost of living for everyday households.
R. Fisher's Ideal Index	3. Strictly uses the base year quantities as its weights.
S. Consumer Price Index (CPI)	4. Satisfies both the Time Reversal Test and the Factor Reversal Test.

A) P-3, Q-1, R-4, S-2
B) P-1, Q-3, R-2, S-4
C) P-3, Q-4, R-1, S-2
D) P-2, Q-1, R-4, S-3

9. Consider the following statements regarding the Census and population statistics:

1. The sex ratio in the Census of India is the number of females per 1,000 males.
2. The density of population is the ratio of the land area to the total population.
3. Census 2011 was the 15th census of India counted from 1872.

Which of the statements given above are correct?

A) 1 and 2 only
B) 2 and 3 only
C) 1 and 3 only
D) 1, 2 and 3

10. In a demographic survey of a region, the following vital data was recorded for a given calendar year:

1. Mid-year total population: 400,000
2. Total number of live births: 12,000
3. Total number of infant deaths (under 1 year of age): 300
4. Female population in the reproductive age group (15–49 years): 150,000

Based on the data above, calculate the Crude Birth Rate (CBR), General Fertility Rate (GFR) and Infant Mortality Rate (IMR) per 1,000 respectively.

A) CBR = 25, GFR = 75, IMR = 20
B) CBR = 30, GFR = 80, IMR = 25
C) CBR = 30, GFR = 75, IMR = 30
D) CBR = 35, GFR = 80, IMR = 25

MOCK TEST 3

JKSSB FAA • Statistics

Questions: 10 **Maximum Marks:** 10 **Time:** 15 minutes

Choose the single best answer for each question. Each question carries 1 mark.

1. Which of the following is a major limitation of primary data when compared with secondary data?

A) Higher cost and greater time consumption
B) Lower reliability and accuracy
C) Not suited to the specific objective of the enquiry
D) It is always out of date

2. Consider the following statements regarding methods of data collection:

1. The mailed questionnaire method often suffers from a low rate of response.
2. Direct personal investigation is best suited when the area of enquiry is very wide.
3. Telephone interviews can quickly reach widely scattered respondents.
4. In indirect oral investigation, the respondent is interviewed directly by the investigator.

How many of the above statements are correct?

A) Only one **B)** Only two
C) Only three **D)** All four

3. Consider the following statements regarding the framing of a questionnaire:

1. A questionnaire should begin with simple and non-sensitive questions.
2. Double-barrelled questions that ask about two issues at once should be avoided.
3. Leading questions are desirable because they help respondents give the expected answer.

Which of the statements given above are correct?

A) 1 and 2 only **B)** 1 and 3 only
C) 2 and 3 only **D)** 1, 2 and 3

4. In the **exclusive method** of classification with class intervals 10–20, 20–30 and 30–40, the observation 30 will be placed in the class:

A) 10–20 **B)** 20–30
C) Both 20–30 and 30–40 **D)** 30–40

5. Mr. X is reviewing his company's production statistics. He originally calculates the Arithmetic Mean of 5 distinct observations and finds the mean is exactly 20. Later, Mr. X realizes that one of the observations, the number “30”, was wrongly recorded by a clerk as “10”. If Mr. X corrects this error, what is the new, accurate Arithmetic Mean of the 5 observations?

A) 20 **B)** 22
C) 24 **D)** 25

6. If you randomly select a student from a class of 25 students, and there are 15 girls and 10 boys, what is the probability that the student is a girl?

A) 1 **B)** 0
C) 2/5 **D)** 3/5

7. Consider the following Assertion (A) and Reason (R):

Assertion (A): If (AB) = (A)(B)/N, then the attributes A and B are independent.

Reason (R): In such a case, Yule's coefficient of association (Q) is equal to +1.

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

8. Consider the following statements regarding the Time Reversal Test for index numbers:

1. The Time Reversal Test, proposed by Prof. Irving Fisher, requires that the index number computed forward should be the reciprocal of the one computed backward, mathematically expressed as $P_{01} \times P_{10} = 1$.

2. Both Laspeyres' index number formula and Paasche's index number formula satisfy the Time Reversal Test.

3. Fisher's Ideal formula, Marshall–Edgeworth formula and Kelly's fixed weight formula all satisfy the Time Reversal Test.

Which of the statements given above are correct?

A) 1 and 2 only **B)** 1 and 3 only

C) 2 and 3 only **D)** 1, 2 and 3

9. Consider the following statements regarding Demography and the Census:

1. The national Census in India is formally conducted exactly once every ten years.

2. The “de jure” method of census enumeration counts people based on their permanent legal residence, regardless of where they are physically sleeping on census night.

3. The Indian Census focuses strictly on counting total heads, deliberately ignoring data regarding literacy, occupation, and housing.

How many of the above statements regarding the Census are correct?

A) None **B)** Only one

C) Only two **D)** All three

10. Consider the following statements regarding reproduction rates:

1. The Gross Reproduction Rate (GRR) counts only female births and assumes that no woman dies before the end of her reproductive period.

2. The Net Reproduction Rate (NRR) is always greater than the Gross Reproduction Rate.

3. An NRR equal to 1 indicates that a generation of mothers is just replacing itself.

Which of the statements given above are correct?

A) 1 and 2 only **B)** 2 and 3 only

C) 1, 2 and 3 **D)** 1 and 3 only

MOCK TEST 4

JKSSB FAA • Statistics

Questions: 10 **Maximum Marks:** 10 **Time:** 15 minutes

Choose the single best answer for each question. Each question carries 1 mark.

1. Consider the following Assertion (A) and Reason (R):

Assertion (A): Data collected by the National Statistics Office through a household survey are primary data for the NSO but secondary data for a researcher who later uses them.

Reason (R): Whether data are primary or secondary depends on the relationship of the user to the original collection of the data.

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

2. Which of the following is **NOT** a method of collecting primary data?

A) Direct personal investigation
B) Mailed questionnaire method
C) Extracting figures from published government reports
D) Telephone interview

3. Consider the following Assertion (A) and Reason (R):

Assertion (A): A well-drafted statistical questionnaire should place highly sensitive personal financial questions at the very beginning of the form.

Reason (R): Starting with sensitive questions immediately grabs the respondent's attention and guarantees that they will finish the rest of the survey.

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) Both A and R are false

4. Match the specific structural part of a statistical table in List-I with its accurate definition in List-II.

List-I (Table Part)	List-II (Definition)
P. The Stub	1. Contains the main numerical data and figures of the table.
Q. The Boxhead	2. The extreme left vertical column containing the row headings.
R. The Body	3. An explanatory note placed at the very bottom of the table.
S. The Footnote	4. The top section of the table containing the column headings.

A) P-2, Q-4, R-1, S-3
B) P-4, Q-2, R-3, S-1
C) P-2, Q-1, R-4, S-3
D) P-1, Q-3, R-2, S-4

5. Consider the following mathematical properties regarding Measures of Central Tendency:

1. The sum of the deviations of all observations taken from their Arithmetic Mean is always exactly zero.
2. The Median is highly distorted by extreme outlier values (extremely high or low numbers).
3. A single statistical distribution can possess more than one Mode.
4. The Mode can be graphically located using an Ogive (Cumulative Frequency) curve.

How many of the above statistical statements are correct?

A) Only one
B) Only two
C) Only three
D) All four

6. A card is drawn at random from a well-shuffled pack of 52 playing cards. What is the probability that it is either a King or a Heart?

A) 1/2
B) 17/52
C) 15/52
D) 4/13

7. In a survey of 100 persons the following class frequencies of two attributes A and B were obtained: (AB) = 40, (Aβ) = 10, (αB) = 20 and (αβ) = 30. Calculate **Yule's coefficient of association (Q)**.

A) 0.29
B) 0.50
C) 0.71
D) 0.86

8. **Statement I:** The Wholesale Price Index (WPI) measures price changes of goods at the wholesale stage and does not include services.

Statement II: The Consumer Price Index for Industrial Workers (CPI-IW) is compiled by the Office of the Economic Adviser.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

9. Which of the following is **NOT** an essential feature of a population census?

A) Universality — every person in the territory is covered
B) Simultaneity — enumeration relates to a single reference date
C) Defined periodicity — conducted at regular intervals
D) Enumeration of only a small sample of the population

10. Consider the following key public health mortality indicators:

Statement I: Infant Mortality Rate (IMR) measures deaths of children below 1 year per 100,000 live births.

Statement II: Maternal Mortality Ratio (MMR) measures maternal deaths per 100,000 live births.

Which of the statements given above is/are correct?

A) Only Statement I is correct
B) Only Statement II is correct
C) Both Statement I and Statement II are correct
D) Neither Statement I nor Statement II is correct

MOCK TEST 5

JKSSB FAA • Statistics

Questions: 10 **Maximum Marks:** 10 **Time:** 15 minutes

Choose the single best answer for each question. Each question carries 1 mark.

1. Consider the following statements regarding primary and secondary data:

1. Primary data are original and are collected for a specific purpose.
2. Secondary data have already been collected by someone else for some other purpose.
3. Secondary data are always more accurate than primary data.

Which of the statements given above are correct?

A) 1 and 3 only
B) 2 and 3 only
C) 1 and 2 only
D) 1, 2 and 3

2. Consider the following statements regarding primary and secondary data collection methods:

1. In the direct personal contact method, the investigator directly interviews the respondent, which ensures high accuracy but can become expensive and time-consuming when the field of enquiry is vast.
2. The indirect method of data collection is typically used when it is difficult to obtain information directly from the respondent due to unwillingness, and instead relies on interviewing a knowledgeable third party.
3. Secondary data is collected for the first time directly by the investigator or their team, making it significantly more expensive than primary data.

Which of the statements given above are CORRECT?

A) 1 and 2 only
B) 2 and 3 only
C) 1 and 3 only
D) 1, 2 and 3

3. **Statement I:** A leading question is desirable in a questionnaire as it guides respondents to the correct answer.

Statement II: A questionnaire should be accompanied by a covering letter explaining the purpose of the survey and assuring confidentiality.

Choose the correct option:

A) Both Statement I and Statement II are correct
B) Both Statement I and Statement II are incorrect
C) Statement I is correct, but Statement II is incorrect
D) Statement I is incorrect, but Statement II is correct

4. Match the following Statistical Concepts with their appropriate Descriptions and select the correct answer using the codes given below:

List I	List II
a. Tally Chart	1. Both lower and upper limits of classes are included in the frequency calculation.
b. Exclusive Method	2. Used to form a simple frequency distribution by recording data occurrences using slash symbols and crossbar blocks of five.
c. Inclusive Method	3. The difference between the upper limit and the lower limit of a class.
d. Class Interval (i)	4. Values equal to the upper limit of a class are excluded from the class and counted in the succeeding class.

A) a-2, b-4, c-1, d-3
B) a-2, b-1, c-4, d-3
C) a-4, b-2, c-3, d-1
D) a-3, b-4, c-1, d-2

5. Which average is most suitable for finding the average of ratios, percentages and rates of growth?

A) Arithmetic mean
B) Geometric mean
C) Harmonic mean
D) Median

6. The classical definition of probability assumes that the outcomes of a random experiment are:

A) Dependent and equally likely
B) Independent and unequally likely
C) Mutually exclusive, exhaustive and equally likely
D) Exhaustive but unequally likely

7. Consider the following Assertion (A) and Reason (R):

Assertion (A): In the Theory of Attributes, statisticians study characteristics like honesty, intelligence, and beauty because they can be precisely measured on a numerical scale.

Reason (R): The Theory of Attributes deals entirely with qualitative data that cannot be measured quantitatively, but can only be counted by their presence or absence.

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

8. For a given set of data, Laspeyres' price index number is 160 and Paasche's price index number is 90. **Fisher's Ideal index number** is:

A) 125
B) 120
C) 115
D) 130

9. Consider the following statements, one labelled as Assertion (A) and the other as Reason (R):

Assertion (A): Urban areas such as Mumbai, New York, and Tokyo maintain high population densities.

Reason (R): Regions with more economic opportunities, such as jobs and industries, attract people and drive population concentration.

Which of the following is correct in respect of the above statements?

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

10. The age-specific fertility rates (ASFR) per 1,000 women of a region are given below. Calculate the **Total Fertility Rate (TFR)**. (Each age group has a width of 5 years.)

Age group (years)	15–19	20–24	25–29	30–34	35–39	40–44	45–49
ASFR (per 1,000)	40	120	140	100	60	30	10

A) 2.0
B) 5.0
C) 2.5
D) 500

Answer Key and Explanations

Source tags: **TS** = Triple S set (Q61–70), **QE** = Quint Essence IAS set (Q111–120); no tag = newly drafted question.

MOCK TEST 1 — ANSWER KEY

1-D **2**-A **3**-C **4**-B **5**-B **6**-C **7**-D **8**-A **9**-B **10**-A

Q	Ans	Topic	Type	Explanation
1	**D**	Primary / Secondary Data	MCQ	Data already collected and published by another agency (the Census) are secondary for the user; the other three are first-hand (primary) data.
2	**A**	Collection Methods	MCQ	A mailed questionnaire is economical for a wide area and literate respondents. Direct personal investigation becomes expensive and time-consuming over a vast field.
3	**C**	Questionnaires [TS 66]	Statement	Statement 2 is wrong: a good questionnaire must be simple and clear, free of technical jargon and complex calculations. Statements 1 and 3 are correct.
4	**B**	Tabulation	Statement	Statement 3 is wrong: the source note is placed at the bottom of the table (below the footnotes), not immediately below the title.
5	**B**	Central Tendency [TS 63]	Numerical	$\Sigma wx = 4\times60 + 3\times80 + 1\times90 + 2\times75 = 240 + 240 + 90 + 150 = 720$; $\Sigma w = 10$; weighted mean = 720 / 10 = **72.00**.
6	**C**	Probability [QE 116]	Statement	Equally likely outcomes {HH, HT, TH, TT}: 3 of 4 contain at least one head, so P = 3/4 (Statement I correct). The probability of an impossible event is 0, never negative (Statement II incorrect).
7	**D**	Attributes	Statement	N is the total number of observations, a class frequency of *zero order*; first-order frequencies are (A), (B), (α), (β). So statement 3 is wrong.
8	**A**	Index Numbers	Numerical	$\Sigma p_0q_0 = 200 + 200 + 100 = 500$; $\Sigma p_1q_0 = 240 + 240 + 125 = 605$. Laspeyres = 605 / 500 × 100 = **121.0**.
9	**B**	Demography / Census	Statement	In the de jure method people are counted at their usual place of residence; counting persons where they are physically found is the de facto method (statement 2 is wrong). The first synchronous census of India was held in 1881 (1872 was non-synchronous).
10	**A**	Vital Statistics [QE 120]	Statement	CDR = (total deaths / mid-year population) × 1,000 — Statement I is correct. CBR = 500 / 50,000 × 1,000 = 10 per 1,000 — Statement II is correct.

MOCK TEST 2 — ANSWER KEY

1-C **2**-B **3**-D **4**-C **5**-D **6**-C **7**-A **8**-A **9**-B **10**-B

Q	Ans	Topic	Type	Explanation
1	**C**	Primary / Secondary Data [QE 111]	Statement	Data taken from a published RBI report are *secondary* for the student; primary data are those collected first-hand by the investigator. Statement I is correct, Statement II is incorrect.
2	**B**	Collection Methods	Statement	Both are true. However, the method is unsuitable for illiterate respondents because they cannot read or write answers — not because of its low cost. So R does not explain A.
3	**D**	Questionnaires	MCQ	Leading questions bias the response and must be avoided in a good questionnaire.
4	**C**	Tabulation	Statement	In a table the *stub* contains the row headings, while the *caption / boxhead* contains the column headings. Statement II is therefore incorrect.
5	**D**	Central Tendency	Numerical	N/2 = 25. Cumulative frequencies: 5, 13, 28 → median class is 20–30. Median = 20 + (25 − 13)/15 × 10 = **28**.

Q	Ans	Topic	Type	Explanation
6	**C**	Probability	Statement	Statements 1, 2 and 4 are correct. Statement 3 is wrong: if two events with non-zero probabilities are mutually exclusive, $P(A \cap B) = 0 \neq P(A) \cdot P(B)$, so they are *dependent*.
7	**A**	Attributes [TS 65]	MCQ	If independent, expected (AB) = (A)(B)/N = 220 × 180 / 500 = 79.2. Observed (AB) = 95 > 79.2, so the attributes are positively associated.
8	**A**	Index Numbers [QE 118]	Statement	Laspeyres uses base-year quantities (3); Paasche uses current-year quantities (1); Fisher's Ideal index satisfies both the time reversal and factor reversal tests (4); CPI measures the change in retail cost of living of households (2).
9	**B**	Demography / Census	Statement	Density of population = total population ÷ land area (persons per sq km) — the statement given is inverted, so statement 2 is wrong. Statements 1 and 3 are correct.
10	**B**	Vital Statistics [TS 69]	Numerical	CBR = 12,000 / 400,000 × 1,000 = 30; GFR = 12,000 / 150,000 × 1,000 = 80; IMR = 300 / 12,000 × 1,000 = 25.

MOCK TEST 3 — ANSWER KEY

1-A **2**-B **3**-A **4**-D **5**-C **6**-D **7**-C **8**-B **9**-C **10**-D

Q	Ans	Topic	Type	Explanation
1	**A**	Primary / Secondary Data	MCQ	Primary data are collected first-hand and are therefore costlier and slower to obtain, though they are original and suited to the purpose of the enquiry.
2	**B**	Collection Methods	Statement	Statements 1 and 3 are correct. Statement 2 is wrong: direct personal investigation suits a *limited* area. Statement 4 is wrong: in indirect oral investigation, information comes from third persons, not directly from the respondent.
3	**A**	Questionnaires	Statement	Leading questions push the respondent towards a particular answer and must be avoided; statement 3 is wrong.
4	**D**	Tabulation	MCQ	In the exclusive method the upper limit is excluded from the class and counted in the succeeding class, so 30 goes to 30–40.
5	**C**	Central Tendency [QE 114]	Numerical	Wrong $\Sigma x = 5 \times 20 = 100$. Correct $\Sigma x = 100 - 10 + 30 = 120$. New mean = 120 / 5 = **24**.
6	**D**	Probability [TS 64]	Numerical	P(girl) = favourable cases / total cases = 15 / 25 = **3/5**.
7	**C**	Attributes	Statement	For independent attributes (AB) = (A)(B)/N, so A is true. But in that case Yule's coefficient Q = 0 (not +1), so R is false.
8	**B**	Index Numbers [TS 70]	Statement	Statement 2 is wrong: Laspeyres' and Paasche's formulae do *not* satisfy the Time Reversal Test. Fisher's Ideal, Marshall–Edgeworth and Kelly's fixed-weight formulae do.
9	**C**	Demography / Census [QE 119]	Statement	Statements 1 and 2 are correct. Statement 3 is wrong: the Census also collects data on literacy, occupation, housing and much more. Two statements are correct.
10	**D**	Vital Statistics	Statement	NRR allows for the mortality of women up to the end of the reproductive period, so NRR is never greater than GRR — statement 2 is wrong. NRR = 1 means replacement-level fertility.

MOCK TEST 4 — ANSWER KEY

1-A **2**-C **3**-D **4**-A **5**-B **6**-D **7**-C **8**-C **9**-D **10**-B

Q	Ans	Topic	Type	Explanation
1	**A**	Primary / Secondary Data	Statement	Whether data are primary or secondary depends on the user's relationship with the original collection; hence NSO's survey data are primary for NSO but secondary for a later researcher. R correctly explains A.
2	**C**	Collection Methods	MCQ	Using published government reports is a secondary-data source; the other three collect fresh data from respondents.
3	**D**	Questionnaires [QE 112]	Statement	Sensitive personal questions should come later, after rapport is built; opening with them often causes refusal or non-response. Both A and R are false.
4	**A**	Tabulation [QE 113]	Statement	Stub → row headings (2); Boxhead → column headings (4); Body → main numerical data (1); Footnote → explanatory note at the bottom (3).
5	**B**	Central Tendency [QE 115]	Statement	Statements 1 and 3 are correct. 2 is wrong — the median is a positional average and is not distorted by extreme values. 4 is wrong — the mode is located from a histogram, while the median is located from an ogive.
6	**D**	Probability	Numerical	P(King) = 4/52, P(Heart) = 13/52, P(King of Hearts) = 1/52. $P(K \cup H) = (4 + 13 - 1)/52 = 16/52 =$ **4/13**.
7	**C**	Attributes	Numerical	$Q = [(AB)(\alpha\beta) - (A\beta)(\alpha B)] / [(AB)(\alpha\beta) + (A\beta)(\alpha B)] = (1200 - 200)/(1200 + 200) = 1000/1400 \approx$ **0.71** (positive association).

Q	Ans	Topic	Type	Explanation
8	**C**	Index Numbers	Statement	WPI covers goods only, so Statement I is correct. The CPI for Industrial Workers (CPI-IW) is compiled by the Labour Bureau, not the Office of the Economic Adviser — Statement II is incorrect.
9	**D**	Demography / Census	MCQ	A census is a complete count (universal, simultaneous, individual enumeration, periodic); sampling is the feature of sample surveys.
10	**B**	Vital Statistics [TS 67]	Statement	IMR is expressed per 1,000 live births (not 100,000), so Statement I is wrong. MMR is expressed per 100,000 live births — Statement II is correct.

MOCK TEST 5 — ANSWER KEY

1-C **2**-A **3**-D **4**-A **5**-B **6**-C **7**-D **8**-B **9**-A **10**-C

Q	Ans	Topic	Type	Explanation
1	**C**	Primary / Secondary Data	Statement	Secondary data are not necessarily more accurate than primary data — their reliability depends on the source and method of compilation, so statement 3 is wrong.
2	**A**	Collection Methods [TS 61]	Statement	Statement 3 is wrong: primary data (not secondary) are collected for the first time by the investigator, and primary data are the more expensive of the two.
3	**D**	Questionnaires	Statement	Leading questions must be avoided (Statement I is incorrect). A covering letter stating the purpose and assuring confidentiality improves response (Statement II is correct).
4	**A**	Tabulation [TS 62]	Statement	Tally chart → slash marks with crossbar blocks of five (2); Exclusive method → upper limit excluded (4); Inclusive method → both limits included (1); Class interval → upper limit − lower limit (3).
5	**B**	Central Tendency	MCQ	The geometric mean is the appropriate average for ratios, index numbers and rates of change (it is based on multiplicative change).
6	**C**	Probability	MCQ	Classical (a priori) probability = favourable cases / total cases, where all cases are mutually exclusive, exhaustive and equally likely.
7	**D**	Attributes [QE 117]	Statement	Honesty, intelligence and beauty are qualitative; they cannot be measured on a numerical scale — hence A is false. R is true: the Theory of Attributes deals with qualitative data counted by presence or absence.
8	**B**	Index Numbers	Numerical	Fisher's Ideal index = $\sqrt{(L \times P)} = \sqrt{(160 \times 90)} = \sqrt{14{,}400} =$ **120**.
9	**A**	Demography / Census [TS 68]	Statement	Both are true: economic opportunities attract people to cities, which explains the high density of urban areas like Mumbai, New York and Tokyo.
10	**C**	Vital Statistics	Numerical	$\Sigma ASFR = 40 + 120 + 140 + 100 + 60 + 30 + 10 = 500$. TFR = $5 \times 500 / 1{,}000 =$ **2.5** children per woman.

Best of Luck!

Keep learning. Keep practising. Keep trusting the process.

WORDS TO CARRY WITH YOU

> **“Indeed, with hardship comes ease.”**
> Surah Ash-Sharh · 94:6

> **“And that man will have nothing except what he strives for.”**
> Surah An-Najm · 53:39

> **“My Lord, increase me in knowledge.”**
> Surah Ta-Ha · 20:114

> **“Allah does not burden a soul beyond what it can bear.”**
> Surah Al-Baqarah · 2:286

> **“So do not weaken and do not grieve, for you will be superior if you are true believers.”**
> Surah Aal-e-Imran · 3:139

A note from the author

This compendium is crafted out of the content I delivered to JKSSB aspirants. These MCQs are compiled from the best books, and new-pattern MCQs have also been designed to help you prepare for the exam. You can consult books such as the TN Board and NCERT (Class 11 & 12) texts, *Statistics for Economics* by T.R. Jain and V.K. Ohri, and similar standard references.

There may be some errors in the questions. Please check carefully wherever a question seems confusing. If you find any error, you can reach me on Instagram: **@Shahid_ibn_Amin**.

Thank you,
Regards, Shahid Ibn Amin



