Bachelor of Arts (B.A.) Part–I Semester—I Examination

STATISTICS

(Descriptive Statistics–I)

Optional Paper–II

Time : Three Hours]   [Maximum Marks : 50

N.B. :— ALL questions are compulsory and carry equal marks.

1. (A) Differentiate between the following giving suitable examples :

   (i)   Population and sample.

   (ii) Census and sample survey.

   (iii) Primary data and secondary data.

   Explain questionnaire method of data collection. Also, give three requisites of a good questionnaire.

   10

OR

   (E) Discuss any three scales of measurement. College office enrolls a student on the basis of the following criteria :

   (i)   Roll no,

   (ii) Name,

   (iii) Gender,

   (iv) Class in which studying,

   (v)   Age of the student,

   (vi) Result in previous examination in terms of first class/second class/third class/ATKT and

   (vii) Marks scored in previous examination.

   State the scale of measurement of each of the above criteria.   10

2. (A) Explain the method of population census that is used in India.

   (B) What are controlled experiments ? Give an example.

   (C) Write a note on 'Scrutiny of data'.

   (D) Derive the conditions for consistency of data on three attributes.   2½×4

OR

(E) In case of dichotomous classification of two attributes, define :

    (i) Independence of attributes.

    (ii) Positive association and negative association between the attributes.

    (iii) Perfect position and perfect negative association between attributes.

Also, define Yule's coefficient of association (Q) and coefficient of colligation (Y). Find the values of these two coefficients in case of independence of attributes and perfect positive, perfect negative association. Also, show that $Q = \dfrac{2Y}{1 + Y^2}$.   10

3. (A) What is classification ? Give two uses of classification. How should the classes be so that every observation is classified in at least one and only one class ?

    (B) Explain geographical and chronological classification giving an example of each.

    (C) Explain the classification of discrete variable with an example. Also, define cumulative frequencies of less than and greater than types.

    (D) Explain :

        (i) Inclusive classification,

        (ii) Exclusive classification and

        (iii) Open-end class intervals.   2½×4

OR

    (E) What are the different parts of a table ? State the requisites of a good table and two uses of tabular representation of data.

    (F) Define a continuous variable. Explain how cumulative frequencies are calculated and also explain their significance in case of a grouped frequency distribution.   5+5

4. (A) Explain the construction of cumulative frequency diagram in case of a frequency distribution of :

    (i) A discrete variable and

    (ii) A continuous variable.

    (B) Explain the construction of percentage bar diagram and pie diagram.   5+5

OR

(E) Explain the construction of subdivided bar diagram and multiple bar diagram.

(F) Write short notes on :

   (i) Frequency bar diagram.

   (ii) Frequency polygon.

   When is it not appropriate to use frequency polygon to represent a grouped frequency distribution ?

                                                                  5+5

5. Answer any **ten** of the following questions :

(A) State a situation where it is necessary to use interview method of data collection.

(B) Give an example each of nominal data and ordinal data.

(C) State true or false :

   (i) Time series data are frequency data.

   (ii) Nominal data are qualitative data.

(D) What is meant by 'canvassor method' in the context of population census ?

(E) Define odds ratio.

(F) Give one advantage of a sample survey over census.

(G) Give one use of stem and leaf diagram.

(H) What are class boundaries ?

(I) Give an example of discrete variable.

(J) What is a pictogram ?

(K) Fill in the blanks :

   If all the class intervals do not have equal widths, then _____ is taken along y-axis and _____ is taken along x-axis.

(L) State one limitation of diagrammatic representation of data.   1×10