BASDPC 252

Credit Based Fourth Semester B.A./B.Sc. Degree Examination, September 2022
(Common to all Batches)
DATA PROCESSING
Introduction to Data Analysis

Time : 3 Hours　　　　　　　　　　　　　　　　　　　　Max. Marks : 80

Note : 1) Answer **any ten** questions from Part – **A** and **one full** question from **each** Unit in Part – **B**.

　　　　2) **Use** of standard calculator is **allowed**.

PART – A

1. a) Define Arithmetic Progression.　　　　　　　　　　　**(10×2=20)**

　 b) Write the formula for compound interest.

　 c) 9% of 123 is _____

　 d) Define Harmonic mean. Give example.

　 e) What is standard deviation ?

　 f) What is histogram ?

　 g) Write Fisher's ideal formula price index number.

　 h) What is bar diagram ?

　 i) Write the components of time series.

　 j) What is rank correlation ?

　 k) What is Regression coefficient ?

　 l) What is time series ?

PART – B

Unit – 1

2. a) Find the 9th term and 18th term of the Arithmetic progression (AP) 5, 10,15, 20, ...

　 b) Manju lent Rs. 8,000 for two years at the rate of 7% compound interest to his friend. After two years how much amount will Manju receive ?

　 c) Differentiate between classification and tabulation.　　**(5+5+5)**

3. a) Find the 8th term and 12th term of the Geometric Progression (GP)
       1, 2, 4, 8,....

   b) Find the sum of first 20 terms of Arithmetic Progression.

   c) A factory outlet offers 12% to 30% reductions on sweaters. If a sweater
      marked Rs. 160 sells for Rs. 130, what is the rate of discount ?   **(5+5+5)**

Unit – 2

4. a) Give the advantages of Pie Chart.

   b) Define Variance. Write the formulas for observed data and data given as
      frequency distribution. The heights (in inches) of nine soldiers are given
      below. Find Variance.

      Height (X) : 69, 66, 67, 69, 64, 63, 65, 68, 72.

   c) The distribution of age at first marriage of males was as given below :

Age (Yr.)	18	19	20	21	22	23	24	25	26	27
No.		2	1	4	8	10	12	17	19	18	14

   Find the mean age of males and also Standard Deviation.   **(5+5+5)**

5. a) The distribution of size of holdings of cultivated land, in an area, was as
      follows :

Size of holdings (hectares)	Mid-points (y)	No. of holdings (f)
0 – 2	1	30
2 – 4	3	29
4 – 6	5	10
6 – 8	7	14
8 – 10	9	11
10 – 20	15	9

   Find Median for Grouped data.

   b) Define Mean Deviation. Write the formulas for observed data and data given
      as frequency distribution.

   c) Define Mean, Mode and Median with suitable example.   **(5+5+5)**

Unit – 3

6. a) Explain briefly the measurement of seasonal variations by Simple Average Method.

   b) Write note on Factor Reversal Test.

   c) Explain the Least Square method of measuring secular trend. **(5+5+5)**

7. a) Discuss the methods of construction of Index numbers.

   b) Write note on Time Reversal Test.

   c) Explain briefly the measurement of cyclic variations by residual method.

   (5+5+5)

Unit – 4

8. a) Discuss the algebraic method of determination correlation.

   b) The values of x and their corresponding values of y are shown in the table below :

x	0	1	2	3	4
y	4	8	5	7	9

   i) Find the Least Square Regression line $y = ax + b$.

   ii) Estimate the value of y when $x = 10$.

   c) Discuss Least Square Method of fitting a Regression line. **(5+5+5)**

9. a) The values of x and their corresponding values of y are shown in the table below :

x	0	1	2	3	4
y	2	5	7	4	6

   Calculate the coefficient correlation from the above data.

   b) State the properties of Regression coefficient.

   c) Discuss Graphical method of determination correlation. **(5+5+5)**

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