NCERT MOST IMPORTANT QUESTIONS CLASS – 11 Statistics for Economics CHAPTER – 3 Organisation of Data

Q1. What is a variable? Distinguish between a discrete and a continuous variable.

Answer

A characteristic, number, or quantity whose value changes overtime is called variable. For example: weight, income etc. It can be either discrete or continuous.

Discrete Variable	Continuous Variable
• A variable that takes only whole number as its value is called discrete variable.	• A variable that can take any value, within a reasonable limit is called a continuous variable.
• These variables increase in jumps or in complete numbers.	• These variables assume a range of values or increase in fractions and not in jumps.
• For example- Number of people in a family, number of students in a class, etc.	• For example- age, height, weight, etc.

Q2. Explain the 'exclusive' and 'inclusive' methods used in classification of data.
Answer

Exclusive method: The classes, by this method, are formed in such a way that the upper class limit of one class equals the lower class limit of the next class for example, 0-10, 10-20, and so on . Thus, the continuity of the data is maintained. The upper class limit is excluded but the lower class limit of a class is included in the interval. This method is most appropriate for data of continuous variables.

Inclusive method: This method does not exclude the upper class limit in a class interval. It includes the upper class in a class. Thus both class limits are parts of the class interval for example, 1-5, 6-10, 11-15 and so on. The interval 1-5 includes both the limits i.e. 1 and 5.

Q3. Use the data in Table 3.2 that relate to monthly household expenditure (in Rs) on food of 50 households and obtain the range of monthly household expenditure on food.

(i) Obtain the range of monthly household expenditure on food.

Answer

Range = Highest Value – Lowest Value
Highest Value = 5090
Lowest Value = 1007
So, Range = 5090 – 1007 = 4083

TABLE 3.2
Monthly Household Expenditure (in Rupees) on Food of 50 Households

1904	1559	3473	1735	2760
2041	1612	1753	1855	4439
5090	1085	1823	2346	1523
1211	1360	1110	2152	1183
1218	1315	1105	2628	2712
4248	1812	1264	1183	1171
1007	1180	1953	1137	2048
2025	1583	1324	2621	3676
1397	1832	1962	2177	2575
1293	1365	1146	3222	1396

Q4.Divide the range into appropriate number of class intervals and obtain the frequency distribution of expenditure.
Answer

Class Intervals	Tally Marks	Frequency
1000 – 1500	𝍸 𝍸 𝍸 𝍸	20
1500 – 2000	𝍸 𝍸 |||	13
2000 – 2500	𝍸 |	06
2500 – 3000	𝍸	05
3000 – 3500	||	02
3500 – 4000	|	01
4000 – 4500	||	02
4500 – 5000	-	00
5000 – 5500	|	01
		50

Q5. Find the number of households whose monthly expenditure on food is(a) less than Rs 2000(b) more than Rs 3000
c) between Rs 1500 and Rs 2500

Answer

(a) Number of households whose monthly expenditure on food is less than Rs 2000
= 20 + 13 = 33

(b) Number of households whose monthly expenditure on food is more than Rs 3000
= 2+1+2+0+1 = 6
(c) Number of households whose monthly expenditure on food is between Rs 1500 and Rs 2500
= 13 + 6 = 19
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Q6. In a city 45 families were surveyed for the number of domestic appliances they used. Prepare a frequency array based on their replies as recorded below.

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

Answer

No. of Domestic Appliances	No. of Households
0	1
1	7
2	15
3	12
4	5
5	2
6	2
7	1
Total	45

Q7.. What is 'loss of information' in classified data?

Answer

The classified data summarises the raw data making it concise and comprehensible, it does not show the details that are found in raw data. Once the data are grouped into classes, an individual observation has no significance in further statistical calculations. Further, the statistical calculations are based on the values of the class marks, ignoring the exact observations of the data leading to the problem of loss of information.

Q8. Do you agree that classified data is better than raw data?

Answer

The raw data are usually large an fragmented, it is very difficult to draw any meaningful conclusion from them. Classification makes the raw data comprehensible by surprising them into groups. When facts of similar characteristics are placed in the same class, it enables one to locate them easily, make comparison, and draw inferences without any difficulty. Therefore, classified data is better than raw data

Q9. Distinguish between Univariate and Bivariate frequency distribution.

Answer

The frequency distribution of a single variable is called a Univariate Distribution. Income of people, marks scored by students, etc. are examples of Univariate Distribution.

The frequency distribution of two variables is called Bivariate distribution. Sales and advertisement expenditure, weight and height of individuals, etc. are examples of Bivariate distribution.

Q10. Prepare a frequency distribution by inclusive method taking class interval of 7 from the following data:

28	17	15	22	29	21	23	27	18	12	7	2	9	4	6
1	8	3	10	5	20	16	12	8	4	33	27	21	15	9
3	36	27	18	9	2	4	6	32	31	29	18	14	13	
15	11	9	7	1	5	37	32	28	26	24	20	19	25	
19	20													

Answer

Class Interval	Tally Marks	Frequency
0 – 7	𝍸 𝍸 𝍸	15
8 – 15	𝍸 𝍸 𝍸	15
16 – 23	𝍸 𝍸 ||||	14
24 – 31	𝍸 𝍸 |	11
32 – 39	𝍸	05
Total		60