



# NCERT Solutions for 11th Class Economics: Chapter 3- Organisation of Data



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## NCERT Solutions for 11th Class Economics: Chapter 3-Organisation of Data

Class 11: Economics Chapter 3 solutions. Complete Class 11 Economics Chapter 3 Notes.

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## Exercises

1. Which of the following alternatives is true?

**(i) The class midpoint is equal to:**

- (a) The average of the upper class limit and the lower class limit
- (b) The product of upper class limit and the lower class limit
- (c) The ratio of the upper class limit and the lower class limit
- (d) None of the above

► (a) The average of the upper class limit and the lower class limit.

**(ii) The frequency distribution of two variables is known as**

- (a) Univariate Distribution
- (b) Bivariate Distribution
- (c) Multivariate Distribution
- (d) None of the above

► (b) Bivariate Distribution

**(iii) Statistical calculations in classified data are based on**

- (a) the actual values of observations
- (b) the upper class limits
- (c) the lower class limits
- (d) the class midpoints

► (d) the class midpoints

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**(iv) Under Exclusive method,**

(a) the upper class limit of a class is excluded in the class interval

(b) the upper class limit of a class is included 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

► (a) the upper class limit of a class is excluded in the class interval

**(v) Range is the**

(a) difference between the largest and the smallest observations

(b) difference between the smallest and the largest observations

(c) average of the largest and the smallest observations

(d) ratio of the largest to the smallest observation

► (a) difference between the largest and the smallest observations

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**2. Can there be any advantage in classifying things? Explain with an example from your daily life.**

**Answer**

Yes, there are many advantages of classifying things. These are:

→ It saves our time and energy by making easy to locate a specific data.

→ It facilitates the analysis, tabulation and interpretation.

→ It makes data comparable.

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→ It is also easy to summarise.

For example: We make specific notebook for each subject.

### **3. 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**

- A variable that takes only whole number as its value is called discrete variable.
- These variables increase in jumps or in complete numbers.
- For example- Number of people in a family, number of students in a class, etc.

#### **Continuous Variable**

- A variable that can take any value, within a reasonable limit is called a continuous variable.
- These variables assume a range of values or increase in fractions and not in jumps.
- For example- age, height, weight, etc.

### **4. 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

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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.

**5. 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.**

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

**(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

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**(ii) Divide the range into appropriate number of class intervals and obtain the frequency distribution of expenditure.**

**Answer**

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

**(iii) 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

$$= 20 + 13 = 33$$

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(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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**6. 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

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5	2
6	2
7	1
Total	45

### **7. 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.

### **8. Do you agree that classified data is better than raw data?**

#### **Answer**

The raw data are usually large and 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.

### **9. Distinguish between Univariate and Bivariate frequency distribution.**

#### **Answer**

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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.

**10. 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	<pre>                                       </pre>	15
8 – 15	<pre>                                       </pre>	15
16 – 23	<pre>   </pre>	14
24 – 31	<pre>   </pre>	11
32 – 39	<pre>                         </pre>	05
Total		60

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