Topic

Mode

Objective

To find the mode graphically.

Previous Knowledge Required

1. Concepts of basic graphical representation of data like histograms, frequency polygons etc.
2. Concept and knowledge of plotting and reading of graphs accurately.

Materials Required

1. Graph paper
2. Geometry box

Preparation/Presentation for activity

Let us consider the data as given in the table to understand the process of finding mode graphically.

Daily wages (in ₹)	No. of workers
31 – 36	6
37 – 42	12
43 – 48	20
49 – 54	15
55 – 60	9
61 – 66	4

1. The given data is not continuous, so we make it of continuous type. Here, we subtract 0.5 from the lower limit and add 0.5 in the upper limit of each class.
2. Draw a histogram from the given data, taking daily wages along x-axis and number of workers (frequency) along y-axis as shown in Fig. 1.
3. Decide the bar of the corresponding modal class.
4. Now, in the highest bar, draw two straight lines AC and BD from the corners of the rectangles (bars) on either side of

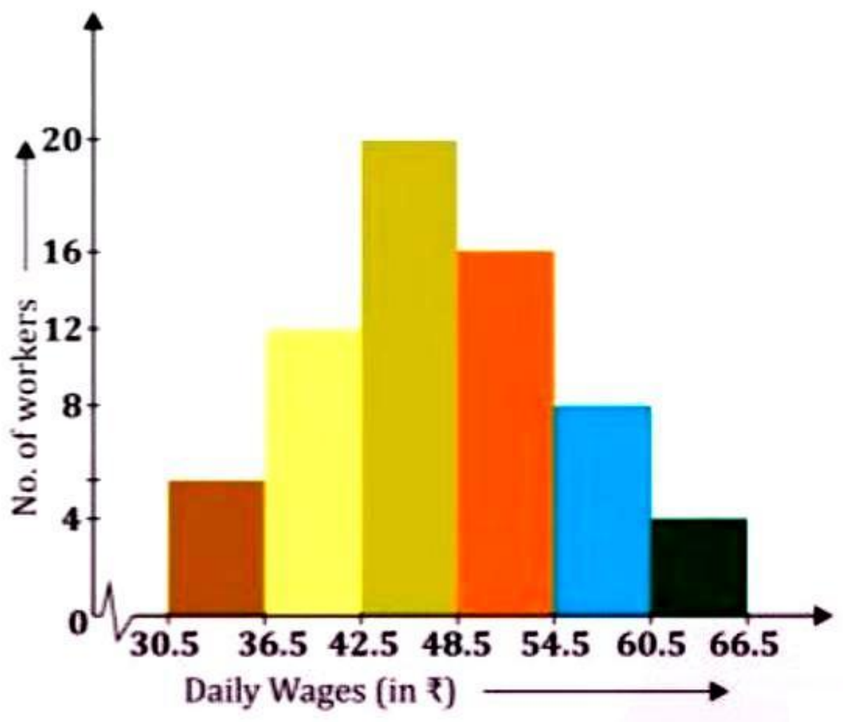

Fig. 1

the highest rectangle to the opposite corners of the highest rectangles.

5. AC and BD intersect at a point L (say) as shown in Fig.1.
6. From the point L, draw a perpendicular LM on x-axis as shown in Fig.1.
7. The abscissa of the point M gives the modal value. Required Mode = Rs. 146.2

Daily wages (in ₹)	No. of wages
30.5 – 36.5	6
36.5 – 42.5	12
42.5 – 48.5	20
48.5 – 54.5	15
54.5 – 60.5	9
60.5 – 66.5	4

VIVA VOCE

Q 1. What do you mean by mode?

Ans. A mode is that value among the observations which occurs most often i.e., the value of the observation having the maximum frequency.

Q 2. Give the formula for calculating mode of any data.

Ans. Mode $= l + \frac{f - f_1}{2f - f_1 - f_2} \times h$

Where,

l = lower limit of the modal class

f = frequency of the modal class

h = width the modal class

f_1 = frequency of the class preceding the modal class

f_2 = frequency of the class succeeding the modal class

Q 3. Write the empirical relationship between the three measures of central tendency.

Ans. The required relationship is 3 Median − 2 Mean = Mode.

Q 4. What is the most frequently occurring observation?

Ans. Mode

MULTIPLE CHOICE QUESTIONS

Q 1. In a dataset, the mode is the value that occurs:

(a) Most frequently (b) Least frequently

(c) In the middle (d) Randomly

Q 2. A dataset with two modes is called:

(a) Bimodal (b) Unimodal (c) Multimodal (d) No mode

Q 3. If a dataset has no repeated values and every value occurs only once, then the dataset is said to have:

(a) One mode (b) No mode (c) Two modes (d) Infinite modes

Q 4. The mode is particularly useful for data that is:

(a) Skewed (b) Normally distributed
(c) Discrete (d) Continuous

Q 5. If a dataset has more than two modes, it is called:

(a) Unimodal (b) Bimodal (c) Multimodal (d) No mode

Answer Key

1.(a)	2.(a)	3.(b)	4.(c)	5.(c)