Histograms

A. Choose the correct answer:

1. In a histogram, the bars are drawn

a) Separately with gaps b) Touching each other

c) Overlapping each other d) Far apart

2. The area of each rectangle in a histogram is proportional to

a) Class width b) Frequency

c) Midpoint d) Upper limit

3. In a histogram, the x-axis represents

a) Frequency b) Class intervals

c) Data points d) Mean

4. A histogram is used to represent

a) Discrete data b) Continuous data

c) Qualitative data d) None of these

5. The y-axis of a histogram represents

a) Class intervals b) Midpoints

c) Frequency d) Class width

B. Write the Missing Terms to Complete the Sentences:

1. In a histogram, _____ bars are used without any gap between them.
2. The width of each bar in a histogram represents the _____ of the class interval.
3. The height of a bar in a histogram represents the _____ of the class.
4. A histogram is appropriate for _____ type of data.
5. In a histogram, the bars are drawn according to the _____ and the frequencies.

C. Figure out the answers to these questions:

1. Draw a histogram for the following data Class intervals 0-10, 10-20, 20-30, 30-40 and Frequencies 5, 8, 12, 6.
2. Why are there no gaps between the bars in a histogram?
3. Identify the mistake if a histogram is drawn with unequal gaps between bars.
4. If the frequency of the class 20-30 is 15, what is the height of the corresponding bar.
5. Construct a histogram for data where Class intervals are 5-15, 15-25, 25-35, and Frequencies are 10, 20, 15.

D. Mark each sentence with a True (✔) or False (✗):

1. In a histogram, the bars must touch each other ___
2. Histograms are suitable for discrete data representation ___
3. Frequency is represented on the x-axis in a histogram ___
4. The width of all bars must be the same if the class size is uniform ___
5. Histograms can be used for categorical data ___

E. Challenge yourself with these questions:

1. List two main differences between a bar graph and a histogram.
2. What will happen if a histogram is drawn with non-uniform class intervals?
3. Why is it important to mention the scale while constructing a histogram?
4. If the range of the data is 50 and you need 5 classes, what will be the class width.
5. In a histogram, if the frequency doubles, what happens to the height of the corresponding bar?