ECONOMICS

BOOKS - VK GLOBAL PUBLICATION ECONOMICS (HINGLISH)

FREQUENCY DIAGRAMS - HISTOGRAM, POLYGON AND OGIVE

Illustration

1. The table below shows number of students of students of a college corresponding to different range of marks in Statistics. Present the information in the form of a histogram.

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70
Number of Students	5	10	15	20	12	8	4

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2. Present the following data in the form of a histogram :

Weekly Wages (₹)	Number of Workers
10–15	7
15–20	10
20–25	27
25–30	15
30–40	12
40–60	12
60–80	8

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3. Following table shows number of students of a college corresponding to different range of marks in Statistics.Make a frequency polygon.

Marks	0–10	10–20	20-30	30–40	40–50	50–60	60–70
Number of Students	5	10	15	20	12	8	5

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4. Present the following data in the form of a frequency polygon :

Marks	10–20	20–30	30–40	40–50	50–60	60–70
Number of Students	10	15	20	22	15	10

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5. Make a frequency curve of the following data :

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Age (Years)	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Number of Residents	150	300	500	800	1,000	900	400	100

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6. Following data relate to the marks secured by students in their Statistics paper. Graph these data in the form of less than ogive

and more than ogive.

Marks	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Number of Students	4	6	10	10	25	22	18	5

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Miscellaneous Illustration

1. Prepare histogram and frequency polygon from the following data :

Marks	0–10	10–20	20–30	30–40	40–50	50–60
Number of Students	5	8	15	11	6	4

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2. From the following data, construct frequency histogram, frequency polygon and frequency curve.

Wages (in ₹)	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90
Number of Workers	2	4	11	15	25	18	15	4	1

3. Draw the 'less than' and 'more than' ogive on the same graph paper from the data given below :

Weekly Wages (₹)	Number of Workers
0–20	10
20–40	20
40–60	40
60–80	20
80–100	10

4. Construct a histogram from the following data :

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70
Number of Students	5	12	20	35	24	12	4

5. Draw histogram and frequency polygon for the following distribution :

Age (Years)	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Number of Residents	30	40	60	100	70	40	30	20

6. Represent the following data by frequency curve :

Daily Wages (₹)	10–20	20–30	30–40	40–50	50–60
Number of Workers	5	20	30	40	20

7. Draw a histogram, a frequency polygon and frequency curve of the following data :

Marks	0–10	10–20	20–30	30–40	40–50	50–60
Number of Students	5	12	15	22	14	4

8. Draw the 'less than' and 'more than' ogive on the same graph paper from the data given below :

Marks	0–20	20–40	40–60	60–80	80–100
Number of Students	40	51	64	38	7

Exercise M C Q

1. A Histogram is a graphical presentation of a frequency distribution of a:

    A. individual series

    B. discrete series

C. continuous series

D. none of these

Answer: C

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2. Which of the following diagrams is drawn by joining mid-points of the tops of all rectangles in a histogram:

A. frequency distribution

B. frequency polygon

C. frequency curve

D. none of these

Answer: B

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3. What is the shape of 'less than ogive'?

A. Rising upward

B. Falling downward

C. Parallel to X-axis

D. Parallel to Y-axis

Answer: A

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4. Adjustment Factor for any Class is equal to :

A. $\dfrac{\text{Class Interval of the First Class}}{\text{Lowest Class Interval}}$

B. $\dfrac{\text{Class Interval of the Concerned Class}}{\text{Lowest Class Interval}}$

C. $\dfrac{\text{Class Interval of the First Class}}{\text{Upper Class Interval}}$

D. $\dfrac{\text{Class Interval of the Concerned Class}}{\text{Upper Class Interval}}$

Answer: B

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5. Which of the following is a shape of frequency distribution curve?

A. A-shaped

B. B-shaped

C. U or inverse U-shaped

D. All of these

Answer: C

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6. Normal curves are also known as:

    A. J-shaped curve

    B. L-shaped curve
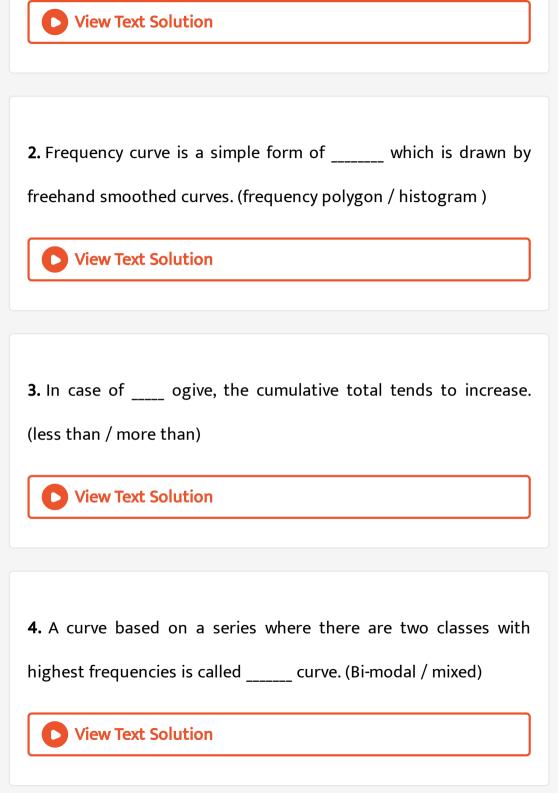
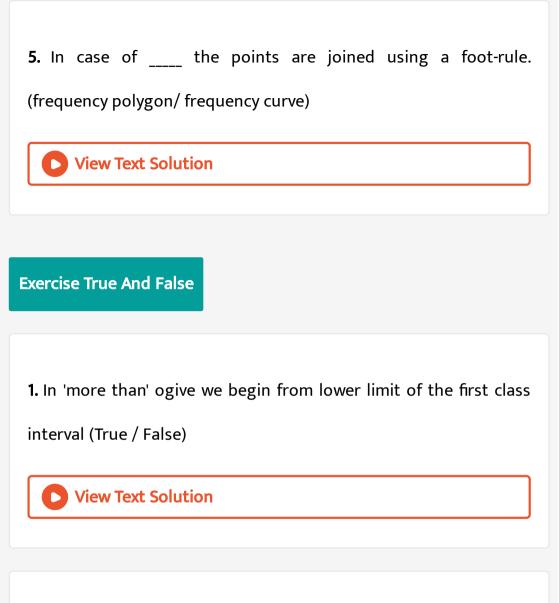   C. U-shaped curve

    D. bell-shaped curve

Answer: D

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Exercise Fill In The Blank

1. ____ is a graphical presentation of a frequency distribution of a continuous series . (Histogram / Polygon)

2. Frequency curve is a simple form of _____ which is drawn by freehand smoothed curves. (frequency polygon / histogram)

3. In case of _____ ogive, the cumulative total tends to increase. (less than / more than)

4. A curve based on a series where there are two classes with highest frequencies is called _____ curve. (Bi-modal / mixed)

5. In case of _____ the points are joined using a foot-rule. (frequency polygon/ frequency curve)

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Exercise True And False

1. In 'more than' ogive we begin from lower limit of the first class interval (True / False)

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2. When a curve is drawn based on a series where there are two classes with highest frequencies is called bimodal curve. (True / False)

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3. Positively skewed curve have their tail more spread towards right. (True / False)

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Exercise Concept Based Objective

1. What are the frequency diagrams?

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2. What is meant by a histogram?

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3. Define frequency polygon.

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4. What is a frequency curve?

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5. What is meant by an ogive?

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Exercise Essential Practicals

1. Make a frequency polygon and histogram using the given data :

Marks Obtained	10–20	20–30	30–40	40–50	50–60	60–70
Number of Students	5	12	15	22	14	4

2. Draw 'less than' and 'more than' ogive curves from the following data :

Marks	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Number of Students	7	10	20	13	12	19	14	9

3. Present the data given in the table below in a histogram :

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Frequency	4	10	16	22	26	18	8	2

4. Draw a histogram from the following data relating to the monthly pocket allowance of the students of Class XI of a school :

Size	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Number of Students	5	10	15	20	25	15	10	5

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5. We are given the following marks secured by 25 students in an examination .

23,28,30,32,35,36,36,40,41,43,44,44,45,48,49,52,53,54,56,56,58,61,62,65,68.

(i)Arrange this data in the form of a frequency distribution taking the following class intervals.

20-29,30-39,40-49,50-59, and 60-69

(ii) Draw the frequency polygon and ogive for the above data.

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6. Present the following data in the form of a histogram :

Mid-point	115	125	135	145	155	165	175	185	195
Size	6	55	48	72	116	60	38	22	3

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7. The frequency distribution of marks obtained by students in a class test is given below .

Draw frequency polygon and ogive.

Marks	0–10	10–20	20–30	30–40	40–50
Number of Students	3	10	14	10	3

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8. (i)Construct a histogram and frequency polygon of the following distribution :

Marks	0–10	10–20	20–30	30–40	40–50
Number of Students	8	18	35	25	14

(ii) Show that the area under frequency polygon is equal to the area under histogram.

9. Draw a frequency polygon from the following data by using (i) histogram , and (ii) without using histogram :

Daily Wages (in ₹)	10–15	15–20	20–25	25–30	30–35
Number of Workers	40	70	60	80	60

10. Draw 'less than' as well as 'more than' ogives for the following data :

Weight (in kg)	30–34	35–39	40–44	45–49	50–54	55–59	60–64
Frequency	3	5	12	18	14	6	2

1. Data represented through a histogram can help in finding graphically the :

    A. mean

    B. mode

    C. median

    D. all of the above

Answer:

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2. Ogives can be helpful in locating graphically the :

    A. mode

B. mean

C. median

D. none of the above

Answer:

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3. Width of rectangles in a histogram should essentially be equal. (true /false)

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4. Histogram can only be formed with continuous classification of data. (true/false)

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5. Histogram and column diagram are the same method of presentation of data. (true/false)

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6. Mode of a frequency distribution can be known graphically with the help of histogram. (true/false)

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7. Median of a frequency distribution cannot be known from the ogives. (true/false)

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