

EXERCISE # 1

A. Very Short Answer Type Questions

- Q.1** The class marks of distribution are :
6, 10, 14, 18, 22, 26, 30
Find the class size and the class interval.
- Q.2** The class marks of distribution are : 47, 52, 57, 62, 67, 72, 77, 82, 87, 92, 97, 102.
Determine the class size, the class limits and the true class limits.
- Q.3** Find the range of the following array of data :
70, 65, 71, 36, 55, 61, 62, 41, 40, 39, 35.
- Q.4** Draw the ogive of the following distribution table:

Class interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	10	5	8	6	6	4

- Q.5** The weights (in kilograms) of 25 students are given as follows :

Weights	35	36	37	38
Frequency	—	—	—	—

35, 38, 36, 37, 38, 35, 37, 36, 35, 38, 36, 36, 37, 37, 35, 38, 36, 35, 36, 37, 37, 38, 36, 38, 37.
Complete the following frequency table:

- Q.6** The ages of ten students of a group are given below. The ages have been recorded in years and months :
8-6, 9-0, 8-4, 9-3, 7-8, 8-11, 8-7, 9-2, 7-10, 8-8
(i) What is the lowest age?
(ii) What is the highest age?
(iii) Determine the range?

- Q.7** The marks scored by 55 students in a test are given below :

Marks	No. of students
0-5	2
5-10	6
10-15	13
15-20	17
20-25	11
25-30	4
30-35	2

Prepare a cumulative frequency table.

- Q.8** If the heights of 5 persons are 140 cms, 150 cms, 152 cms, 158 cms and 161 cms respectively, find the mean height.
- Q.9** Find the mean of all factors of 10.
- Q.10** Find the mean of first 10 even natural numbers.
- Q.11** Following are weights (in kg) of 10 new born babies in a hospital on a particular day :
3.4, 3.6, 4.2, 4.5, 3.9, 4.1, 3.8, 4.5, 4.4, 3.6.
Find the mean \bar{X} .
- Q.12** The number of children in 10 families of a locality are :
2, 4, 3, 4, 2, 0, 3, 5, 1, 1, 5. Find the mean number of children per family.
- Q.13** Calculate the mean for the following distribution:
x : 5 6 7 8 9
f : 4 8 14 11 3
- Q.14** Find the mean of the following distribution:
x : 10 12 20 25 35
f : 3 10 15 7 5
- Q.15** Find out the mode of the following marks obtained by 15 students in a class:
Marks : 4, 6, 5, 7, 9, 8, 10, 4, 7, 6, 5, 9, 8, 7, 7
- Q.16** Find the mode from the following data:
125, 175, 225, 125, 225, 175, 325, 125, 375, 225, 125
- Q.17** Find the mode for the following series:
7.5, 7.3, 7.2, 7.2, 7.4, 7.7, 7.7, 7.5, 7.3, 7.2, 7.6, 7.2

Find arithmetic mean in each of the following :

Q.18

Class-interval	0-6	6-12	12-18	18-24	24-30
Frequency	7	5	10	12	6

Q.19

Class-interval	0-10	10-20	20-30	30-40	40-50
Frequency	8	10	9	12	11

Q.20

Class-interval	0-8	8-16	16-24	24-32	32-40
Frequency	5	9	10	8	8

Q.21

Class-interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	6	4	3	2

Q.22 Find the mode of the following series :

Wages (Rs.)	No. of persons
0 - 25	10
25 - 50	30
50 - 75	40
75 - 100	25
100 - 125	20
125 - above	15

Q.23 Compute the mode for the following data :

Class	Frequency
10 - 20	24
20 - 30	42
30 - 40	56
40 - 50	66
50 - 60	108
60 - 70	130
70 - 80	154
80 - 90	140

B. Short Answer Type Questions

Q.24 A cumulative frequency distribution table is given. Convert this into a frequency distribution table.

Marks	below 45	below 60	below 75	below 90
Number of student	0	8	23	48

Q.25 Draw a frequency table for the following data:

Class	C.F.
111-120	6
121-130	11
131-140	16
141-150	20
151-160	27
161-170	36
171-180	42
181-190	45
191-200	50

Q.26 Construct a c.f. table for the following data :

Class	Frequency
4-7	3
8-11	10
12-15	12
16-19	8
20-23	5
24-27	9

Q.27 The heights (in cm) of 30 students of class IX are given below :

155, 158, 154, 158, 160, 148, 149, 150, 153, 159, 161, 148, 157, 153, 157, 162, 159, 151, 154, 156, 152, 156, 160, 152, 147, 155, 163, 155, 157, 153

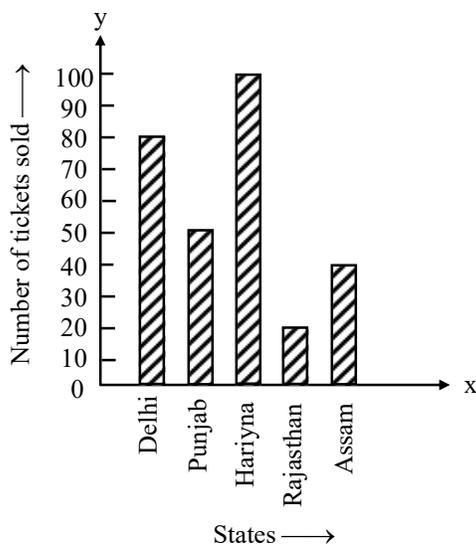
Prepare a frequency distribution table with 160-164 as one of the class intervals

Q.28 The water bills (in rupees) of 32 houses in a certain street for the period 1.1.98 to 31.3.98 are given below :

56, 43, 32, 38, 56, 24, 68, 85, 52, 47, 35, 58, 63, 74, 27, 84, 69, 35, 44, 75, 55, 30, 54, 65, 45, 67, 95, 72, 43, 65, 35, 59.

Tabulate the data and present the data as cumulative frequency table using 70-79 as one of the class intervals.

Q.29 Read the bar graph shown in Fig. and answer the following questions :



- What is the information given by the bar graph?
- How many tickets of Assam State Lottery were sold by the agent ?
- Of which state, were the maximum number of tickets sold?
- State whether true or false.

The maximum number of tickets sold is three times the minimum number of tickets sold.

- Of which state were the minimum number of tickets sold?

Q.30 The following table gives the route length (in thousand kilometers) of the Indian Railways in some of the years :

Year	Route length (in thousand km)
1960-61	56
1970-71	60
1980-81	61
1990-91	74
2000-2001	98

Represent the above data with the help of a bar graph.

Q.31 The distribution of heights (in cm) of 96 children is given below. Construct a histogram and a frequency polygon on the same axes.

Height (in cm):	No. of Children
124 to 128	5
128 to 132	8
132 to 136	17
136 to 140	24
140 to 144	16
144 to 148	12
148 to 152	6
152 to 156	4
156 to 160	3
160 to 164	1

Q.32 The mean of five numbers is 27. If one number is excluded, their mean is 25. Find the excluded number.

Q.33 The mean weight per student in a group of 7 students is 55 kg. The individual weights of 6 of them (in kg) are 52, 54, 55, 53, 56 and 54. Find the weight of the seventh student.

Q.34 The weights (in kg) of 15 students are : 31, 35, 27, 29, 32, 43, 37, 41, 34, 28, 36, 44, 45,

42, 30. Find the median. If the weight 44 kg is replaced by 46 kg and 27 kg by 25 kg, find the new median.

ANSWER KEY

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1. Class size = 4, Ist Class interval = 4 – 8
2. Class size = 5, Class limit for first class = 44.5, 49.4.
3. 36
4. C.f. (10, 15, 23, 29, 35, 39)
5. 5, 7, 7,6
6. (i) 7 years, 8 months (ii) 9 years, 3 months (iii) 1 year, 7 months
8. 152.2 9. 4.5 10. $x + 4$ 11. 4
12. 3 13. 7.025 14. 20 15. 7 marks
16. 125 17. 7.2 18. 15.75 19. 26.6
20. 21 21. 20.5 22. Rs.60 23. 76.32
29. (i) Number of tickets of different state lotteries sold by an agent on a day.
(ii) 40 (iii) Haryana (iv) False (v) Rajasthan
32. 35 33. 61 kg 34. 35 kg, 35 kg

EXERCISE # 2

A. Long Answer Type Questions

Q.1 For the following data, construct a histogram:

C.I.	10-14	15-19	20-24	25-29	30-34
Frequency	300	980	800	580	290

Q.2 Draw a histogram for the given data :

C.I.	25-29	30-34	35-39	40-44	45-49	50-50
Frequency	5	15	23	20	10	7

Q.3 Find the unknown for the following distribution:

C.I.	Frequency	C.F.
10-20	12	x_1
20-30	x_2	25
30-40	10	x_3
40-50	x_4	43
50-60	x_5	48
60-70	x_5	48

Q.4 To solve a problem, time taken by the students as follows :

37, 31, 27, 18, 59, 45, 54, 40, 32, 43, 39, 49, 45, 40, 59, 53, 52, 50, 40, 59, 60, 23, 21, 20, 22

- Construct a frequency distribution data using interval of 10.
- Draw a histogram to represent the distribution.

Q.5 Construct a frequency polygon for the following data :

C.I.	0-10	10-20	20-30	30-40	40-50
Frequency	85	40	45	25	5

Q.6 Draw a histogram and a frequency polygon for the following data :

C.I.	Frequency
0-50	12
51-100	18
101-150	27
151-200	20
201-250	17
251-300	06

Q.7 Draw a histogram and a frequency polygon from the following data :

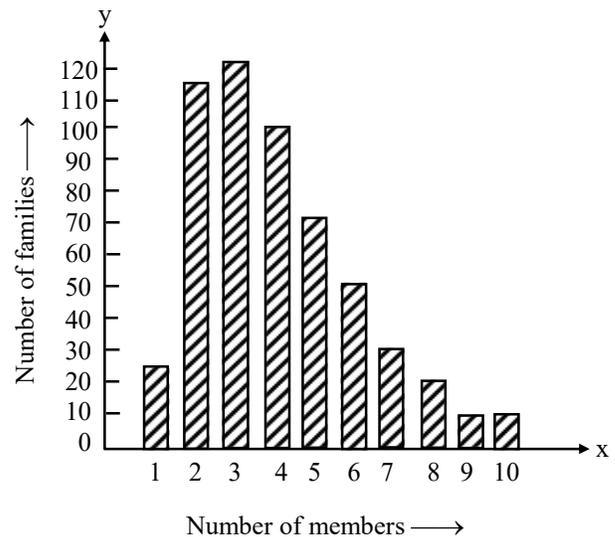
C.I.	Frequency
21-25	21
26-30	22
31-35	50
36-40	110
41-45	87
46-50	51
51-55	18
56-60	23

Q.8 Thirty children were asked about the number of hours they watched T.V. programmes in the previous week. The results were found as follows :

1 6 2 3 5 12 5 8 4 8
10 3 4 12 2 8 15 1 17 6
3 2 8 5 9 6 8 7 14 12

- Make a grouped frequency distribution table for this data, taking class width 5 and one of the class intervals as 5-10.
- How many children watched television for 15 or more hours a week ?

Q.9 Read the bar graph given in fig. and answer the following questions :



- What is the information given by the bar graph?
- What is the number of families having 6 members ?

- (iii) How many members per family are there in the maximum number of families ? Also tell the number of such families.
- (iv) What are the number of members per family for which the number of families are equal? Also, tell the number of such families ?

Q.10 The investment (in crores of rupees) of Life Insurance Corporation of India in different sectors are given below :

Sectors	Investment (in ten crores of rupees)
Central Government Securities	45
State Government Securities	11
Securities guaranteed by the Government	23
Private Sectors	18
Socially oriented sectors (Plan)	46
Socially oriented sectors (Non-Plan)	11

Represent the above data with the help of a bar graph.

Q.11 The following data gives the value (in crores of rupees) of the Indian export of cotton textiles for different years :

Years	1982	1983-84	1984-85	1985-86	1986-87
Value of Exports of Cotton Textiles (in crores of rupees)	300	325	475	450	550

Represent the above data with the help of a bar graph. Indicate with the help of a bar graph the year in which the rate of increase in exports is maximum over the preceding year.

Q.12 If \bar{X} is the mean of the ten natural numbers $x_1, x_2, x_3, \dots, x_{10}$, show that

$$(x_1 - \bar{X}) + (x_2 - \bar{X}) + \dots + (x_{10} - \bar{X}) = 0$$

Find arithmetic mean in each of the following :

Q.13

Class-interval	Frequency
0-50	10
50-100	15
100-150	30
150-200	35
200-250	25
250-300	15

Q.14

Class-interval	Frequency
0-50	8
50-100	15
100-150	32
150-200	26
200-250	12
250-300	7

Q.15

Class-interval	Frequency
10-15	5
15-20	6
20-25	8
25-30	12
30-35	6
35-40	3

Q.16

Class-interval	Frequency
18-24	12
24-30	16
30-36	24
36-42	16
42-48	8
48-54	4

Q.17 Draw a histogram to represent the data :

x	f
1-2	5
2-3	3
3-5	6
5-7	12
7-10	9
10-15	10
15-17	4

ANSWER KEY

3. $x_1 = 12$ $x_2 = 13$ $x_3 = 35$ $x_4 = 8$ $x_5 = 5$

9. (i) Number of families with different number of members in a locality.

(ii) 50

(iii) 3, 120

(iv) 9 and 10, 5

11. 1986–87

12. 0

13. 161.54

14. 145

15. 24.625

16. 33.3