Exercise 23.2

Q.1 The marks obtained by 40 students of class VIII in an examination are given below.

16, 17, 18, 3, 7, 23, 18, 13, 10, 21, 7, 1, 13, 21, 13, 15, 19,
24, 16, 3, 23, 5, 12, 18, 8, 12, 6, 8, 16, 5, 3, 5, 0, 7, 9, 12, 20
2, 23.

Divide the data into five groups, namely 0-5, 5-10 10-15, 15-20, and 20-25 and prepare a grouped frequency table.

Sol:

Range of Marks	No. of students
0-5	9
5-10	9
10-15	7
15-20	9
20-25	6

Q.2: The marks scored by 20 students in a test are given below:

54, 42, 68, 56, 62, 71, 78, 51, 72, 53, 44, 58, 47, 64, 41,
57, 89, 53, 84, 57.

Complete the following frequency table:

Sol:

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Sol:

Marks	Tally Marks	No. of children
40-50	IIII	4
50-60	IIII III	8
60-70	III	3
70-80	III	3
80-90	II	2

The class-Interval with the greatest freq. is 50-60

Q.3 The following is the distribution of weights (in kg) of 52 persons:

weight (kg)	persons
30-40	10
40-50	15
50-60	17
60-70	6
70-80	4

(i) What is the lower limit of class 50-60?

(ii) Find the class marks of the classes 40-50, 50-60,

(iii) What is the Class-size.

Sol: (i) lower limit of class 50-60 is 50.

(ii) Class mark of $40-50 = \frac{40+50}{2} = \frac{90}{2} = 45$

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Again, class mark of 50-60 . i.e - $\frac{50+60}{2}$

$= \frac{110}{2} = 55$

(iii) Class size of 40-50 , i.e 10 .

Q.4 Construct a frequency table for the following weights (in gm) of 35 mangoes using the equal class intervals , one of them is 40-45 (45 not included) :

30, 40, 45, 32, 43, 50, 55, 62, 70, 70, 61, 62, 53, 52, 50, 42, 35, 37, 53, 55, 65, 70, 73, 74, 45, 46, 58, 59, 50, 62, 74, 34, 35, 70, 68.

(i) what is the class mark of the class interval 40-45 ?

(ii) what is the range of the above weights?

(iii) How many classes are there?

Solution :

Weights (in gms)	No. of mangoes.
30-35	5
35-40	2
40-45	4
45-50	3
50-55	5
55-60	3
60-65	5
65-70	5
70-75	3

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(i') Class mark for class interval 40-45

$$\text{Class mark} = \frac{40+45}{2} = \frac{85}{2} = 42.5$$

(ii) Range = highest value − lowest value

= 74 − 30

= 44

(iii) No. of classes = 9

Q.5 Construct a frequency table with class-intervals (0-5) (5 not included) of the following marks obtained by a group of 30 students in an examination.

0, 5, 7, 10, 12, 15, 20, 22, 25, 27, 8, 11, 17, 3, 6, 9, 17, 19, 21, 29, 31, 35, 37, 40, 42, 45, 49, 4, 50, 16

Sol:

Marks	No. of Students
0-5	3
5-10	5
10-15	3
15-20	5
20-25	3
25-30	3
30-35	1
35-40	2
40-45	2
45-50	2
50-55	1

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Q6 The Marks scored by 40 students of class VIII in a mathematics are given below:

81, 55, 68, 79, 85, 43, 29, 68, 54, 73, 47, 35, 72, 64, 95, 44, 50, 77, 64, 35, 79, 52, 45, 54, 70, 83, 62, 64, 72, 92, 84, 76, 63, 43, 54, 38, 73, 68, 52, 54

Prepare a frequency distribution with class size of 10 marks.

Sol:

Marks	Frequency
20-30	1
30-40	3
40-50	5
50-60	8
60-70	9
70-80	8
80-90	34
90-100	2

Q.7 The heights (in cm) of 30 students of class VIII 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 class-Intervals.

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Sol:

Height (cm)	No. of students
145–149	4
150–154	9
155–159	12
160–164	5

Q8 The monthly wages of 30 workers in a factory are given below

830, 835, 890, 810, 835, 869, 845, 898, 890, 820, 860, 832, 833, 855, 845, 804, 808, 812, 840, 885, 835, 836, 878, 840, 868, 890, 806, 840, 890

Prepare the data in the form of frequency distribution with class-size 10.

Sol:

Wages	No. of workers
800–809	3
810–819	2
820–829	1
830–839	8
840–849	5
850–859	1
860–869	3
870–879	1
880–889	1
890–899	5

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Q.9 Construct a frequency table with equal class Intervals from the following data on the monthly wage of 28 labourers working in a factory, taking one of the class interval as 210-230 (230 not included)

220, 268, 258, 242, 210, 268, 272, 242, 311, 290, 300, 320, 319, 304, 302, 318, 306, 292, 254, 278, 210, 240, 280, 316, 306, 215, 256, 236.

Solution :

Wages	no. of workers.
210-230	4
230-250	4
250-270	5
270-290	3
290-310	7
310-330	5

Q.10 The daily minimum temperature in degree Celsius recorded in a certain Arctic region are as follows

-12.5, -10.8, -18.6, -8.4, -10.8, -4.2, -4.8, -6.7, -13.2, -11.8, -2.3, 1.2, 2.6, 0, -2.4, 0, 3.2, 2.7, 3.4, 0, -2.4, -2.4, 0, 3.2, 2.7, 3.4, 0, -2.4, -5.8, -8.9, -14.6, -12.3, -11.5, -7.8, -2.9

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Represent them as a frequency distribution table taking -19.9 to -15 as the first class interval.

Sol:

Temperature	Frequency
-19.9 to -15	1
-15 to -11.1	6
-11.1 to -6.2	6
-6.2 to -1.3	9
-1.3 to 3.6	13

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