Exercise 14C

Question 12:
The given frequency distribution table is as below:

Class Intervals	1-10	11-20	21-30	31-40	41-50	51-60
Frequency	8	3	6	12	2	7

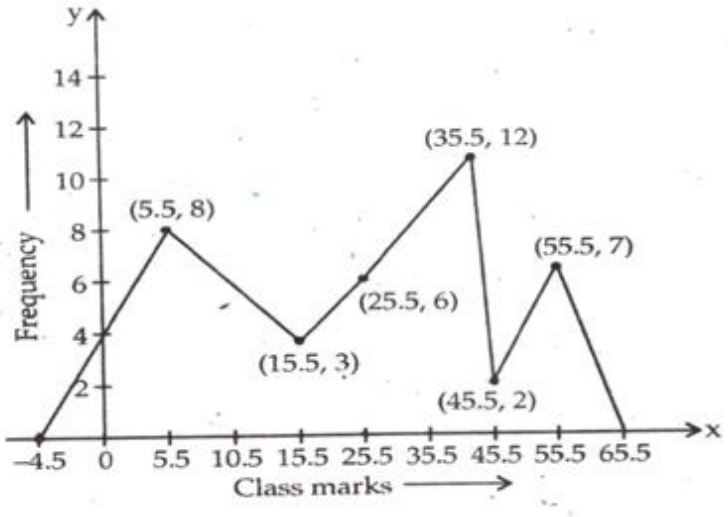
This table has inclusive class intervals and so these are to be converted into exclusive class intervals (i.e true class limits).
These are (0.5-10.5), (10.5-20.5), (20.5-30.5), (30.5-40.5), (40.5-50.5), and (50.5-60.5)
In order to draw a frequency polygon, we need to determine the class marks.

$$\text{Class marks of a class interval} = \frac{upper\ \ limit\ +\ lower\ \ limit}{2}$$

Take imaginary class interval (-9.5-0.5) at the beginning and (60.5-70.5) at the end , each with frequency zero. So we have the following table

Class Intervals	True class Intervals	Class marks	Frequency
(-9)-0	(-9.5)-0.5	-4.5	0
1-10	0.5-10.5	5.5	8
11-20	10.5-20.5	15.5	3
21-30	20.5-30.5	25.5	6
31-40	30.5-40.5	35.5	12
41-50	40.5-50.5	45.5	2
51-60	50.5-60.5	55.5	7
61-70	60.5-70.5	65.5	0

Now, take class marks along x-axis and their corresponding frequencies along y-axis.
Mark the points and join them.
Thus, we obtain a complete frequency polygon as shown below:


y
14
12
10
8
6
4
2
Frequency
(5.5, 8)
(35.5, 12)
(55.5, 7)
(25.5, 6)
(15.5, 3)
(45.5, 2)
x
–4.5
0
5.5
10.5
15.5
25.5
35.5
45.5
55.5
65.5
Class marks

********** END **********