Exercise 9C

Question 7:
As the class 85 - 95 has the maximum frequency it is modal class

$$x_k = 85,\ f_k = 32,\ f_{k-1} = 30,\ f_{k+1} = 6 \text{ and } h = 10$$

$$\text{Mode, } m_o = x_k + \left[h \times \frac{(f_k - f_{k-1})}{(2f_k - f_{k-1} - f_{k+1})}\right]$$

$$= 85 + \left[10 \times \frac{(32 - 30)}{(64 - 30 - 6)}\right]$$

$$= 85 + \frac{5}{7} = 85 + 0.71 = 85.71$$

Hence, mode = 85.71

Question 8:
The given series is converted from inclusive to exclusive form and on preparing the frequency table, we get

Class	Frequency
0.5 - 5.5	3
5.5 - 10.5	8
10.5 - 15. 5	13
15.5 - 20.5	18
20.5 - 25. 5	28
25.5 - 30.5	20
30.5 - 35.5	13
35.5 - 40.5	8
40.5 - 45.5	6
45.5 - 50.5	3

As the class 20.5 - 25.5 has maximum frequency, so it is modal class

$x_k = 20.5,\ f_k = 28,\ f_{k-1} = 18,\ f_{k+1} = 20$ and $h = 5$

$$\text{Mode, } m_o = x_k + \left[h \times \frac{(f_k - f_{k-1})}{(2f_k - f_{k-1} - f_{k+1})} \right]$$

$$= 20.5 + \left[5 \times \frac{(28 - 18)}{(56 - 18 - 20)} \right]$$

$$= 20.5 + \left[\frac{5 \times 10}{18} \right]$$

$$= 20.5 + 2.78$$

$$= 23.28$$

Hence, mode = 23.28

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