Exercise 9B

Question 1:

Class	Frequency f_i	C.F.
0 - 10	3	3
10 - 20	6	9
20 - 30	8	17
30 - 40	15	32
40 - 50	10	42
50 - 60	8	50
	$N = \sum f_i = 50$	

Now, $N = 50 \Rightarrow \left(\frac{N}{2}\right) = 25$

The cumulative frequency just greater than 25 is 32 and corresponding class is 30 - 40.

Thus, the median class is 30 - 40

l = 30, h = 10, f = 15, c = C.F. preceding class 30 - 40 is 17 and $\frac{N}{2} = 25$

$$\text{Median} = l + \left[h \times \frac{\left(\frac{N}{2} - c\right)}{f}\right] = 30 + \left[10 \times \frac{(25-17)}{15}\right]$$
$$= (30 + 5.33) = 35.33$$

Hence the median is 35.33

Question 2:

We prepare the frequency table, given below

Marks	No. of students f_i	C.F.
0 - 7	3	3
7 - 14	4	7
14 - 21	7	14
21 - 28	11	25
28 - 35	0	25
35 - 42	16	41
42 - 49	9	50
	$N = \sum f_i = 50$	

Now, $N = 50 \Rightarrow \left(\frac{N}{2}\right) = 25$

The cumulative frequency is 25 and corresponding class is 21 - 28.

Thus, the median class is 21 - 28

l = 21, h = 7, f = 11, c = C.F. preceding class 21 - 28 is 14 and $\frac{N}{2} = 25$

$$\text{Median} = l + \left[h \times \frac{\left(\frac{N}{2} - c\right)}{f}\right] = 21 + \left[7 \times \frac{(25 - 14)}{11}\right]$$

$$= (21 + 7) = 28$$

Hence the median is 28.

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