Exercise 9B

Question 3:

We prepare the frequency table given below:

Daily wages	Frequency f_i	C.F.
0 - 100	40	40
100 - 200	32	72
200 - 300	48	120
300 - 400	22	142
400 - 500	8	150
	$N = \sum f_i = 150$	

Now, N = 150, therefore $\left(\frac{N}{2}\right) = 75$

The cumulative frequency just greater than 75 is 120 and corresponding class is 200 - 300.

Thus, the median class is 200 - 300

l = 200, h = 100, f = 48

c = C.F. preceding median class = 72 and $\left(\frac{N}{2}\right) = 75$

$$\text{Median}, m_e = l + \left[h \times \frac{\left(\frac{N}{2} - c\right)}{f}\right] = 200 + \left(100 \times \frac{(75 - 72)}{48}\right)$$

$$= 200 + 6.25 = 206.25$$

Hence the median of daily wages is Rs. 206.25.

Question 4:

We prepare the frequency table, given below:

Class	Frequency f_i	C.F
5 - 10	5	5
10 - 15	6	11
15 - 20	15	26
20 - 25	10	36
25 - 30	5	41
30 - 35	4	45
35- 40	2	47
40 - 45	2	49
	$\Sigma f_i = 49$	

Now, N = 49 $\Rightarrow \frac{N}{2} = \frac{49}{2} = 24.5$

The cumulative frequency just greater than 24.5 is 26 and corresponding class is 15 - 20.

Thus, the median class is 15 - 20

$\therefore$ l = 15, h = 5, f = 15

c = CF preceding median class = 11 and $\left(\frac{N}{2}\right) = 24.5$

$$\text{Median } m_e = l + \left[h \times \frac{\left(\frac{N}{2} - c\right)}{f}\right] = 15 + \left(5 \times \frac{(24.5 - 11)}{15}\right)$$

$$= 15 + \left(5 \times \frac{13.5}{15}\right) = 15 + 4.5 = 19.5$$

Median of frequency distribution is 19.5

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