

Exercise 9B

Question 3:

We prepare the frequency table given below:

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

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

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

= 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	C.F
	fi	
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
	Σ 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

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

Median
$$m_e = I + \left[h \times \frac{\left(\frac{N}{2} - c \right)}{f} \right] = 15 + \left(5 \times \frac{(24.5 - 11)}{15} \right)$$
$$= 15 + \left(5 \times \frac{13.5}{15} \right) = 15 + 4.5 = 19.5$$

Median of frequency distribution is 19.5

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