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Question 4

Step 1: Identifying the data and getting the (Cf)

Grades	frequency (f)	Cumulative Freq (Cf)
0 – 20	4	4
20 – 40	12	16
40 – 60	9	25
60 – 80	20	45
80 – 100	15	60

Step 2: finding the **median class**

* total No of studat $= \Sigma f = 60$
* Median position $= (N/2) = 60/2 = 30$

$\therefore$ the Commulative frequency that is just before 30 is 25, and the next class interval is 60 – 80

$\therefore$ 60 – 80 is the median class.

Step 3: Applying the median formular

$$\text{Median} = L + \left(\frac{\frac{N}{2} - Cf}{f_m}\right) * h$$

where:

L = Lower boundy of the median class = 60

N = Total frequency = 60

Cf = cumulative frequency before median class = 25

f_m = frequency of the median class = 20

h = class width = 20

Step 4: Substituting the values

$$\text{Median} = 60 + \left(\frac{30 - 25}{20}\right) * 20$$

$$= 60 + \left(\frac{5}{20}\right) * 20$$

$$= 60 + (0.25 \times 20)$$

$$= 60 + 5$$

$$= 65 //$$

$\therefore$ the median grade $= 65 //$