

$$\bar{X} = A + \frac{\sum fu}{\sum f}$$

$$= 35 + \frac{-70}{160}$$

$$= \frac{5600 - 70}{160}$$

$$= \frac{\cancel{5590}}{\cancel{160}} = \frac{5530}{160} = 34.56 \text{ Ans.}$$

$$= \cancel{34.625}$$

$$= \cancel{34.63}$$

(B)	C.I	C.I	f	X	fX	u = X - A	Fu
	6-10	5.5-10.5	20	8	160	-10	-200
	11-15	10.5-15.5	30	13	390	-5	-150
	16-20	15.5-20.5	50	(18) x	900	0	0
	21-25	20.5-25.5	40	23	920	5	200
	26-30	25.5-30.5	10	28	280	10	100
			$\sum f = 150$		$\sum fX = 2650$		$\sum fu = -50$

Short cut method

Lcd, $A = \text{Assumed mean} = 18$

$$\bar{X} = A + \frac{\sum fu}{\sum f} = 18 + \frac{-50}{150} = 18 - 0.33 = 17.67 \text{ Ans.}$$

Simple method

$$\bar{X} = \frac{\sum fX}{\sum f} = \frac{2650}{150} = 17.67 \text{ Ans.}$$

Q.26. The arithmetic mean of 15 values was calculated as 20.2. Later, it was found that two values 23 and 35 were wrongly taken as 32 and 53. Find the correct mean.

$$\bar{X} = \frac{\sum X}{N}$$

$$20.2 = \frac{\sum X}{15}$$

$$\text{or, } \sum X = 15 \times 20.2 = 303 \text{ (wrong)}$$

$$\begin{aligned} \text{correct } \sum X &= 303 - 32 - 53 + 23 + 35 \\ &= 303 + 58 - 85 \\ &= 361 - 85 \\ &= 276 \end{aligned}$$

$$\bar{X} = \frac{276}{15}$$

$$= 18.4 \text{ Ans.}$$

Q.27. The average marks secured by 50 students was 44. Later, on it was found that a score of 36 was misread as 56. Find the correct average marks obtained by the students.

$$\bar{X} = \frac{\sum X}{N}$$

$$44 = \frac{\sum X}{50}$$

$$\sum X = 2200 \text{ (Wrong)}$$

$$\begin{aligned} \text{Correct, } \sum X &= 2200 - 56 + 36 \\ &= 2144 + 36 \\ &= 2180 \end{aligned}$$

$$\bar{X} = \frac{2180}{50}$$

$$= 43.6 \text{ Ans.}$$

Q. 28. The arithmetic mean of weekly income of 50 families is Rs. 2800. But in course of counting the income of one family of Rs. 2050 was mistak as Rs. 2500. Find the correct arithmetic mean.

$$\bar{X} = \frac{\sum X}{N}$$

$$2800 = \frac{\sum X}{50}$$

$$\sum X = 1,40,000 \text{ (Wrong)}$$