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MATRIC NO:- 19|ENG 02|005

for Group A D

C.I	f	x	fx	f(x - $\bar{x}$ ) <sup>2</sup>
1-5	0	3	0	0 (3 - 17.8) <sup>2</sup> = 0
6-10	7	8	56	7 (8 - 17.8) <sup>2</sup> = 672.28
11-15	10	13	130	10 (13 - 17.8) <sup>2</sup> = 230.4
16-20	2	18	36	2 (18 - 17.8) <sup>2</sup> = 0.08
21-25	1	23	23	1 (23 - 17.8) <sup>2</sup> = 27.04
26-30	5	28	140	5 (28 - 17.8) <sup>2</sup> = 520.2
31-35	4	33	132	4 (33 - 17.8) <sup>2</sup> = 924.16

$$n = 29$$

$$\sum f = 29 \quad \sum fx = 517 \quad \sum f(x - \bar{x})^2 = 2374.16$$

$$\bar{x} = \frac{\sum fx}{\sum f} = \frac{517}{29}$$

$$\bar{x} = 17.8$$

$$\text{Variance} = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{2374.16}{29}$$

$$\text{Variance} = 81.9$$

$$\text{Standard deviation} = \sqrt{\text{Variance}}$$

$$= \sqrt{81.9}$$

$$\text{Standard deviation} = 9.05$$

for Group B 1)

C.I	f	xc	fxc	$f(x-\bar{x})^2$
1-5	2	3	6	$2(3-20.1)^2 = 584.82$
6-10	4	8	32	$4(8-20.1)^2 = 585.64$
11-15	7	13	91	$7(13-20.1)^2 = 352.87$
16-20	20	18	360	$20(18-20.1)^2 = 88.2$
21-25	16	23	368	$16(23-20.1)^2 = 134.56$
26-30	10	28	280	$10(28-20.1)^2 = 624.1$
31-35	4	33	132	$4(33-20.1)^2 = 665.64$

$$\sum f = 63$$

$$\sum fxc = 1269$$

$$\sum f(x-\bar{x})^2 = 3035.83$$

$$\bar{x} = \frac{\sum fxc}{\sum f} = \frac{1269}{63}$$

$$\text{Mean } (\bar{x}) = 20.1 //$$

$$\text{Variance} = \frac{\sum f(x-\bar{x})^2}{\sum f} = \frac{3035.83}{63}$$

$$\text{Variance} = 48.2$$

$$\text{Standard deviation} = \sqrt{\text{Variance}}$$

$$= \sqrt{48.2}$$

$$\text{S.D} = 6.94 //$$

1) for Group A

$$\text{Coefficient of variation} = \frac{\text{S.D}}{\text{mean}} \times \frac{100}{1}$$

$$= \frac{9.05}{17.8} \times \frac{100}{1}$$

$$\text{C.V} = \frac{50.84\%}{50.8\%} //$$

for Group B

$$\text{Coefficient of variation} = \frac{\text{S.D}}{\text{Mean}} \times \frac{100}{1}$$

$$= \frac{6.94}{20.1} \times \frac{100}{1}$$

$$\text{C.V} = 34.5\% //$$

(ii) Group B has a less variable distribution and it is more uniform and homogenous.