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COMPUTER ENGINEERING
19/ENG02/026
STA 132

Sol

GROUP A

Cl	f	x	fx	$(x-\bar{x})$	$(x-\bar{x})^2$	$f(x-\bar{x})^2$
1-5	0	3	0	-14.83	219.93	0
6-10	7	8	56	-9.83	96.63	676.41
11-15	10	13	130	-4.83	23.33	233.3
16-20	2	18	36	0.17	0.03	0.06
20-25	1	23	23	5.17	26.73	26.73
25-30	5	28	140	10.17	103.43	517.15
31-35	4	33	132	15.17	230.13	920.52
	$\Sigma f = 29$		$\Sigma fx = 517$			$\Sigma f(x-\bar{x})^2 = 2374.17$

(i) Mean $= \frac{\Sigma fx}{\Sigma f} = \frac{517}{29} = 17.83$

$\therefore$ Mean $(\bar{x}) = 17.83$

(ii) Standard Deviation $(S) = \sqrt{\frac{\Sigma f(x-\bar{x})^2}{\Sigma f - 1}}$

$= \sqrt{\frac{2374.17}{28}}$

$= 9.21$

$\therefore$ Standard Deviation $(S) = 9.21$

(iii) Coefficient of Variation, $C.V = \frac{S.D}{\text{mean}} \times 100$

$= \frac{9.21}{17.83} \times 100$

$= 51.65$

∴ Coefficient of variation, C.V $= 51.65$

GROUP B

CL	f	x	fx	$(x-\bar{x})$	$(x-\bar{x})^2$	$f(x-\bar{x})^2$
1 - 5	2	3	6	-17.14	293.78	587.56
6 - 10	4	8	32	-12.14	147.38	589.52
11 - 15	7	13	91	-7.14	50.98	356.82
16 - 20	20	18	360	-2.14	4.58	91.60
21 - 25	16	23	368	2.86	8.18	130.88
26 - 30	10	28	280	7.86	61.78	617.80
31 - 35	4	33	132	12.86	165.38	661.52
	$\Sigma f = 63$		$\Sigma fx = 1269$			$\Sigma f(x-\bar{x})^2 = 3035.74$

(i) Mean $= \frac{\Sigma fx}{\Sigma f} = \frac{1269}{63} = 20.14$

∴ mean $(\bar{x}) = 20.14$

(ii) SD, $s = \sqrt{\frac{\Sigma f(x-\bar{x})^2}{\Sigma f - 1}}$

$= \sqrt{\frac{3035.74}{62}}$

$= 6.99$

(iii) Coefficient of variation $=$, $C.V = \frac{S.D}{mean} \times 100$

$= \frac{6.99}{20.14} \times 100$

$= 34.71$

∴ Coefficient of variation, C.V $= 34.71$

(c) Group B has less variable distribution