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DEPT: MECHANICALS

MATRIC no: 19/ENCOG/028

STAT 132

| CI    | $x$ | $F_A$             | $F_B$             | $F$             | $(x - \bar{x}_A)^2$                    | $(x - \bar{x}_B)^2$                    | $F_A x$              | $F_B x$               |
|-------|-----|-------------------|-------------------|-----------------|--|--|----------------------|-----------------------|
| 1-5   | 3   | 0                 | 3                 | 3               | 0                                      | -439.1146                              | 0                    | 6                     |
| 6-5   | 8   | 7                 | 4                 | 11              | 568595/841                             | 386.3258                               | 56                   | 32                    |
| 11-15 | 13  | 10                | 7                 | 17              | 19606/841                              | 163.1391                               | 130                  | 91                    |
| 16-20 | 18  | 2                 | 20                | 22              | 150/841                                | 500/841                                | 36                   | 360                   |
| 21-25 | 23  | 1                 | 16                | 17              | 22500/841                              | 360000/841                             | 23                   | 369                   |
| 26-30 | 28  | 5                 | 10                | 15              | 517.39                                 | 1036.78                                | 140                  | 280                   |
| 31-35 | 33  | 4                 | 4                 | 8               | 920.1085                               | 920.8083                               | 132                  | 132                   |
|       |     | $\Sigma F_A = 29$ | $\Sigma F_B = 63$ | $\Sigma F = 92$ | $\Sigma (x - \bar{x}_A)^2 = 2374.7379$ | $\Sigma (x - \bar{x}_B)^2 = 3373.4243$ | $\Sigma F_A x = 517$ | $\Sigma F_B x = 1269$ |

$$\bar{x} = \frac{\Sigma Fx}{\Sigma F}$$

$$\bar{x}_A = \frac{\Sigma F_A x}{\Sigma F_A} = \frac{517}{29} = 17.8276$$

$$\bar{x}_B = \frac{\Sigma F_B x}{\Sigma F_B} = \frac{1269}{63} = 20.1429$$

$$S_A = S_B = \sqrt{\frac{\Sigma F_B (x - \bar{x}_B)^2}{\Sigma F_B - 1}} = \sqrt{\frac{3373.4243}{63 - 1}} = \sqrt{\frac{3373.4243}{62}} = 7.5763$$

$$S_A = \sigma_A = \sqrt{\frac{\Sigma F_A (x - \bar{x}_A)^2}{\Sigma F_A - 1}} = \sqrt{\frac{2374.7379}{29 - 1}} = \sqrt{\frac{2374.7379}{28}} = 9.2081$$

$$= 9.2081$$

$$\textcircled{ii} C_{VA} = \frac{\sigma_A}{\bar{x}_A} \times 100 = 51.6513\% //$$

$$C_{VB} = \frac{\sigma_B}{\bar{x}_B} \times 100 = 38.6199\% //$$

$\textcircled{iii}$  Group B has Less Variable Distribution and is Homogeneous