Victoria University of Bangladesh

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Course title: Statistics.

Course Code: STA-235

Batch: 22nd (evening)

Ans to the Que NO: 1/A

Mean = $\frac{\Sigma x}{n}$

$\bar{x} = \frac{\Sigma x}{n} = \frac{74.26}{15} = 4.95$

Medium = 3.18

Mode : using empiriecy formola—

= 3 x Medium − 2 x mean

= 3 x 3.18 − 2 x 4.95

= − 0.36

$\therefore Sk = \frac{3(\text{mean} - \text{medium})}{S}$

$= \frac{3(4.95 - 3.18)}{5.22}$

$= 1.017$

$S = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n-1}}$

$= \sqrt{\frac{(0.09 - 4.95)^2 + \cdots (16.40 - 4.95)^2}{15-1}}$

$= 5.22$

P.T.O

The value is 1.017 so the range would be (1-2) and the therefor the skewed should be: Moderatly possitively skewed Distribution.

## Ans to the Que No 2/A

$$\text{Unhappy with major} = \frac{129}{129+101}$$

$$= 0.56 \text{ . Ans.}$$

## Ans to the Que No 2/B.

The Student happy with the communication major $= \frac{33}{101} = 0.326$ . Ans.

## Ans to the Que No 2 (c)

History major were happy :-

$$\Rightarrow \frac{43+33}{101}$$

$$= \frac{76}{101}$$

$$= 0.75 \text{ Ans.}$$

P.T.O

## Ans to the Que NO 2/D.

psychology major and is unhappy with major :.

$$\frac{57+27}{129} = 0.65 \text{ Ans.}$$

## Ans to the Que NO 3

(ii)

$n = 5$

$x$ is the binomial variate with probility $= \frac{82}{100} = \frac{41}{50}$

$$f(x; 5, \tfrac{1}{5}) = \binom{5}{x}\left(\frac{41}{50}\right)^{x}\left(\frac{41}{50}\right)^{5-x}$$ for n = next 5 term

(1) $P[\text{exactly } 5] = P[x=5] = \binom{5}{5}\left(\frac{41}{50}\right)^{5}\left(\frac{41}{50}\right)^{5-5}$

$$= \frac{5!}{5!(5-5)!} \times 0.3040$$

$$= 0.3040$$

P.T.O

3/II

$$P[\text{at least 4 heads}] = P[x \geq 4] = P[x=4] + P[x=5]$$

$$= \binom{5}{4}\left(\frac{41}{50}\right)^4\left(\frac{41}{50}\right)^{5-4} + \binom{5}{5}\left(\frac{41}{50}\right)^5\left(\frac{41}{50}\right)^{5-5}$$

$$= 5 \times 0.3707 + 0.3707$$

$$= 2.224 \text{ Ans.}$$

3/III

$$P[\text{none}] = P[x=0] = \binom{5}{0}\left(\frac{41}{50}\right)^0\left(\frac{41}{50}\right)^{5-0}$$

$$= \frac{5!}{0!(5-0)!} \times \left(\frac{41}{50}\right)^5$$

$$= 0.3707 \text{ Ans.}$$

3/IV

Mean is The $= np$

$$= 5 \times \left(\frac{41}{50}\right)_{10}$$

$$= 4.1 \text{ Ans.}$$

Variance is $= npq$

$$= 5 \times \frac{41}{50} \times \frac{9}{50}$$

$$= 0.738 \text{ Ans}$$

P.T.O

## Ans to the Que No 5

5/A $P(u<55) = P\left(\frac{u-\mu}{6} < \frac{55-\mu}{6}\right)$

$= P\left(z < \frac{55-48}{7}\right)$

$= P(z<1)$

$= P(-\infty < z < 1)$

$= 0.8413$ (using Normal table)

that is the 84.13% of the student obtained.

5/B $P(u>95) = P\left\{\left(\frac{u-\mu}{6}\right) > \left(\frac{95-\mu}{6}\right)\right\}$

$= P\left(z > \frac{95-48}{7}\right)$

$= P(z > 6.71)$

$= P=(-\alpha > z > 6.71)$

5/C $P(75 < u < 90) = P\left(\frac{75-\mu}{6} < \frac{x-\mu}{6} < \frac{90-\mu}{6}\right)$

$= P\left(\frac{75-48}{7} < z < \frac{90-48}{7}\right)$

$= P(3.85 < z < 6)$

$= P(-\infty < z < 6) - P(-\infty < z < 3.85)$

END