

1)

1) Binomial distribution

$$p(x) \Rightarrow {}^n C_x p^x q^{n-x}$$

$$x \sim B(n, p)$$

$n \Rightarrow$ Number of trials

$p \Rightarrow$ probability of success

$q \Rightarrow$ probability of failure ($q \Rightarrow 1-p$)

$x \Rightarrow$ Number of x in trials.

Poisson distribution:

$$p(x) \Rightarrow \frac{e^{-m} m^x}{x!}$$

$$x \sim p(m)$$

$m \Rightarrow$ mean ($m = np$)

ii)

Procedure for hypothesis testing

Step-1) State NULL hypothesis H_0

Alternative hypothesis H_1

Step-2) Decide the Nature of test

(One tailed / two tailed based on H_1)

\neq in $H_1 \Rightarrow$ Two tailed

\leq in $H_1 \Rightarrow$ Right tailed

$>$ in $H_1 \Rightarrow$ Left tailed

Step-3) Obtain Z_α value which depends upon α -value and the Nature of test.

Step-4) Choose the appropriate formula & calculate test statistic, (i.e.) Z value

Step 5) Comparison and Conclusion

If $|Z| < |Z_\alpha|$

$H_0 \Rightarrow$ accepted

$H_1 \Rightarrow$ rejected

there is no significant difference at $\alpha\%$ LOS

