

## Section - 4.

Q2) A coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased at 5% level of significance.

Suppose the coin is unbiased then the probability of getting the head in a toss =  $1/2$

$\therefore$  Expected number of successes =  $1/2 \times 400 = 200$

The observed value of successes = 216.

Thus the excess of observed value over expected value =  $216 - 200 = 16$

Also SD of a simple sampling =  $\sqrt{npq} = \sqrt{(400 \times \frac{1}{2} \times \frac{1}{2})} = 10$

$$Z = \frac{x - np}{\sqrt{npq}} = \frac{16}{10} = 1.6$$

Notes

Call