**Problem​ ​Statement**

A die marked A to E is rolled 50 times. Find the probability of getting a “D” exactly 5

times.

**Solution:**

n = 50, n - k = 45, k = 5

the probability of success = probability of getting a “D” = s = 1/5

the probability of failure = probability of not getting a “D” = 1 - s = 4/5

When we substitute these values in the formula for Binomial distribution we get,

P (exactly 5 out of 20 answers incorrect) = C (50, 5) \* (1/5 )^ 5\* ( 4/5 ) ^ 45

P (5 out of 50) = 50! / (5!(50−5)!)\*  (1/5 )^ 5\* ( 4/5 ) ^ 45

= 0.295

Thus the required probability is 0.295 approximately.