Assignment 4.4

Problem Statement 1:

A test is conducted which is consisting of 20 MCQs (multiple choices questions) with every MCQ having its four options out of which only one is correct. Determine the probability that a person undertaking that test has answered exactly 5 questions wrong.

Note: Solution submitted via github must contain all the detailed steps.

Solution

This problem we can solve using binomial distribution formula.

Here,

x = 5,

total no of trials: n = 20,

probability of answering wrong: p = ¾ = 0.75

$$P(x) = \frac{n!}{x!(n-x)!} p^x (1-p)^{n-x}$$

P(5) = (20!) / (5! * 15!) * (0.75 ^ 5) (0.75 ^ 15)

= 3.42649582307785749435424804687 5 e-6

Hence Answer is : 3.42649582307785749435424804687 5e-6