**Assignment Number 8**

GEOMETRIC & NEGATIVE BINOMIAL DISTRIBUTION

Register Number: 1740256

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**Aim** – The probability is 0.75 that an applicant for driver’s licence will pass the test for a given trial. What is the probability that an applicant will finally pass the test on the 4th trial?

**Question 2**

**Aim** – While taping a T.V cereal, there is a probability of 0.3 that an actor will get his lines correct on any tape. What is the probability that he gets his lines correct for the 1st time on the 6th tape?

**Question 3**

**Aim** – The probability that a target is destroyed in any 1 shot is 0.5. What is the probability that it will get destroyed in the 6th attempt?

**Question 4**

**Aim** – If the probability is 0.4 that a child exposed to a contagious disease will catch it. What is the probability that the 10th child exposed to the disease will be the 3rd to catch the disease?

**Question 5**

**Aim** – If the probability is 0.75 that a person will believe a rumour about a certain politician, then find the probability that the 8th person to hear the rumour will be the 5th to believe it?

**Question 6**

**Aim** – A scientist needs 3 diseased rabbits for an experiment. He has 20 rabbits available and inoculates them one at time with a serum, quitting if he gets 3 positive reactions. If the probability is 0.25 that a rabbit can contract the disease from the serum. What is the probability that the scientist is able to get 3 diseased rabbits from 20?

**Question 7**

**Aim** – A boy is throwing stones at a target. What is the probability that his 10th throw is his 5th hit if the probability of hitting the target at any time is 0.5?

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Negative binomial distribution can be done using the command –

NEGBINOM which denotes number of failures, number of success, probability of success, cumulative value.

Cumulative value is the logical value which is true when we need cumulative values and false when we need p.m.f.