# **Binomial Distribution**

1. The incidence of a certain disease is such that on an average, 15% of workers suffer from it. If some 20 workers are chosen at random, find the probability that

Exactly 5 workers suffer from the disease

More than 12 workers suffer from the disease

At most 10 workers suffer from the disease

1. The prevalence of a disorder in a certain group of people is 35%. If 20 people from that group are chosen at random, what is the probability that:

None of them have that disorder

10 of them have that disorder

At most 10 of them have that disorder

At least 14 of them have that disorder

# **Poisson Distribution**

1. The number of calls received per day by a Customer Care division is observed to follow Poisson Distribution with mean calls as 56. Find the following:
2. Probability that it may get more than 70 calls in a day
3. Probability that less than 20 calls are received in a day
4. The number of customers served at a counter per hour are 4. Find the following:
   1. Probability that more than 5 customers will be served in an hour
   2. Probability that less than 3 customers will be served in an hour

# **Normal Distribution**

1. Suppose IQ scores are normally distributed with mean 100 and standard deviation 15. What is the 95th percentile of the distribution of IQ scores?
2. In an insurance company, daily amount of claims is normally distributed with mean $1678 with standard deviation $500. Find the following:

Probability that amount exceeds $2000

What is the minimum amount of claims for the top 10% of the daily claims?

Probability that the amount is between $1000 and $1900.