



### **Tutorial-3**

1. The number of monthly breakdowns of a computer is a random variable, having a Poisson distribution with mean equal to 1.8. find the probability that this computer will function for a month.
  - i. Without a breakdown
  - ii. With only one breakdown
  - iii. With atleast one breakdown
2. The time (in hours) required to repair a machine is exponentially distributed with parameter  $\lambda=1/2$ 
  - (i) What is the probability that the repairs time exceeds 2 hour?
  - (ii) What is the conditional probability that the repair takes 10 hour given that its duration exceeds 9 hour?
3. In normal distribution 31% of items are under 45 and 8% are over 64 find the mean and standard deviation of the given distribution.
4. Find the MGF of Exponential distribution and hence find its mean and Variance. Also prove the memory less property of the exponential distribution.