**Course Code : MAT2001**　　　　　**Course Name : Statistics for Engineers**

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1. Write R code to solve the following problems:

   (a) In a large consignment of electric bulbs 10 % are defective. A random sample
   of 20 is taken for inspection. Find the probability that

   (i) All are good bulbs,

   (ii) At most there are 3 defective bulbs,

   (iii) Exactly there are three defective bulbs.

   (b) Out of 1000 balls 50 are red and the rest white. If 60 balls are picked at
   random, what is the probability of picking up (i) 3 red balls (ii) not more
   than 3 red balls in the sample. Assume poisson distribution for the number
   of red balls picked up in the sample.

   (c) In a test on 2000 electric bulbs, it was found that the life of a particular make,
   was normally distributed with an average life of 2040 hours and S.D. of 60
   hours. Estimate the number of bulbs likely to burn for

   (i) more than 2150 hours,

   (ii) less than 1950 hours and

   (iii) more than 1920 hours but less than 2160 hours.