**Jaypee University of Engineering & Technology,Guna** Probability Theory and Random Process (18B11MA511) **Tutorial-I**

1.What is the chance that a leap year selected at random will contain 53 Sundays. 2.Two unbiased dice are thrown. Find the probability that

(i) the first die shows 6. (ii) the total of the numbers on the dice is 8.

(iii) both the dice show the same number. (iv) the total of the numbers on the dice is greater than 8. (v) the total of the numbers on the dice is 13.

(vi) the total of the numbers on the dice is any number from 2 and 12, both inclusive.

1. (a) Four cards are drawn at random from a pack of 52 cards. Find the probability that

(i) they are a king, a queen, a jack and an ace. (ii) two are kings and two are queens.

(iii) two cards are black and two are red. (iv) there are two cards of hearts and two cards of diamonds.

1. A man is dealt 4 spade cards from an ordinary pack of 52 cards. If he is given three more cards, find the probability p that at least one of the additional cards is also a spade.
2. A card is drawn from an ordinary pack. A gambler bets that it is either a spade or an ace. What are the odds against his winning the bet?
3. A, B and C are three arbitrary events. Find the expression for the events noted below, in control of A, B and C.
   1. only A Occurs. (ii) both A and B, but not C occur. (iii) all three events occur

(iv) at least one occurs (v) ) at least two occurs (vi) one and no more occurs

(vii) non occurs

7.(a) The probability that a contractor will get a plumbing contract is 2/3 and the

probability that he will get an electric contract is 4/9. If the probability of getting at least one contract is 4/5, what is the probability that he will get both ?

(b) If *P**A*  0.4 , *P**B*  0.7 and *P**A*  *B*  0.3 find *P**A*  *B* .

(c) If *P**A*  0.35 , *P**B*  0.75 and *P**A*  *B*  0.95 find *P**A*  *B* .