	BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA ASSIGNMENT OF PROBABILTY	
1	**Assume that in a family, each child is equally likely to be a boy or a girl. A family with three children is chosen at random. The probability that the eldest child is a girl given that the family has at least one girl is** **(A)$\frac{4}{7}$ (B) $\frac{1}{2}$ (C) $\frac{1}{3}$ (D) $\frac{3}{4}$**	
2	**If A and B are two independent events, then the probability of occurrence of at least of A and B is given by** **(a) 1 – P(A) P(B) (b) 1 – P(A) P(B′)** **(c) 1 – P(A′) P(B′) (d) 1 – P(A′) P(B)**	
3	**If E and F are events such that 0 < P(F) < 1, then** **(a) P(E|F)+P(E′|F)=1 (b) P(E|F)+P(E|F′)=1 (c) P(E′|F)+P(E|F′)=1** **(d) P(E|F′)+P(E′|F′)=0**	
4	**A and B throw a pair of dice alternately. A wins the game, if he gets a total of 7 and B wins the game, if he gets a total of 10. If A starts the game, then find the probability that B wins.**	
5	**P speaks truth in 70% of the cases and Q in 80% of the cases. In what percent of cases are they likely to agree in stating the same fact? Do you think, when they agree, means both are speaking truth?**	
6	**Let X denote the number of colleges where you will apply after your results and P(X = x) denotes your probability of getting admission in x number of colleges. It is given that** $P(X=x)=\begin{cases} kx & , \text{ if } x=0 \text{ or } 1 \\ 2kx & , \text{ if } x=2 \\ k(5-x) & , \text{ if } x=3 \text{ or } 4 \\ 0 & , \text{if } x>4 \end{cases}$ **where k is a positive constant. Find the value of k. Also, find the probability that you will get admission in** **(i) exactly one college** **(ii) at most 2 colleges** **(iii) at least 2 colleges.**	
7	**A bag X contains 4 white balls and 2 black balls, while another bag Y contains 3 white balls and 3 black balls. Two balls are drawn (without replacement) at random from one of the bags and were found to be one white and one black. Find the probability that the balls were drawn from bag Y.**	

8	**A bag contains 4 balls. Two balls are drawn at random (without replacement) and are found to be white. What is the probability that all the balls in the bag are white?**	
9	**A bank offers loan to its customers on different types of interest namely, fixed rate, floating rate and variable rate. From the past data with the bank, it is known that a customer avails loan on fixed rate, floating rate or variable rate with probabilities 10%, 20% and 70% respectively. A customer after availing loan can pay the loan or default on loan repayment. The bank data suggests that the probability that a person defaults on loan after availing it at fixed rate, floating rate and variable rate is 5%, 3% and 1% respectively. Based on the above information, answer the following:** **(i) What is the probability that a customer after availing the loan will default on the loan repayment?** **(ii) A customer after availing the loan, defaults on loan repayment. What is the probability that he availed the loan at a variable rate of interest?**