**ASSIGNMENT NO.- 9[Ch-13(Probability)]**

**Class -XII**

1. 10% of the bulbs produced in a factory are of red colour and 2% of red are defective.If one bulb is

 picked up at random,determine the probability of its being defective,if it is red.

2. A family has 2 children.Find the probability that both are boys,if it is known that (i) at least one of

 the children is a boy (ii) the elder child is a boy.

3. A soldier fires three bullets on enemy.The probability that the enemy will be killed by one bullet is

 0.7 .What is the probability that the enemy is still alive?

4. A problem in mathematics is given to two students A and B whose chances of answering are $\frac{1}{2}$

 and $\frac{1}{3}$ respectively.What is the probability that the problem is solved?

5. If A and B are two events such that $P\left(A\right)=\frac{1}{4} , P\left(B\right)=\frac{1}{3}$ and $P\left(A∪B\right)=\frac{1}{2}$ ,show that A and B

 are independent events.

6. If $P\left(A\right)=0.4 , P\left(B\right)=p ,P\left(A∪B\right)=0.6$ and A and B are given to be independent events ,find

 the value of $'p^{'}.$

7. A man is known to speak truth 3 out of 4 times.He throws a die and reports that it is a six.Find the

 probability that it is actually a six.

8. A bag contains 4 red and 4 black balls and another bag contains 2 red and 6 black balls.One of the

 two bags is selected at random and a ball is drawn from the bag which is found to be red.Find the

 probability that the ball is drawn from the first bag.

9. A card from a pack of 52 playing cards is lost.From the remaining cards of the pack , 3 cards are

 drawn at random(without replacement) and are found to be all spades.Find the probability of the

 lost card being a spade.

10. A discrete random variable X has the following probability distribution:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **P(X)** | C | 2C | 2C | 3C | C2 | 2C2 | 7C2+C |

 Find the value of C.Also,find the mean of this distribution.

11. Two cards are drawn simultaneously(or successively without replacement) from a well shuffled

 pack of 52 cards.Find the mean and variance of the number of red cards.

12. From a lot of 15 bulbs,which include 5 defectives,a sample of 2 bulbs is drawn at

 random(without replacement).Find the probability distribution of the number of defective

 bulbs.

13. Five cards are drawn successively with replacement from a well shuffled deck of 52 cards.What

 is the probability that : (a) all the five cards are spades? (b) only three cards are spades?

14. An experiment succeeds thrice as often as it fails.Find the probability that in the next five trials

 there will be at least 3 successes.

15. A new treatment for baldness is known to be effective in 70% of the cases treated.Four bald

 members from different families are treated.Find the probability that

 (a) exactly two members are successfully treated.

 (b) at least one member is successfully treated.