CLASS –XI **SUBJECT – MATHEMATICS**
ASSIGNMENT- 2 **TOPIC - PROBABILITY**

Q1. Find the probability that a leap year, selected at random, will contain 53 Sundays. (Ans. 2/7)

Q2. A box contains 10 bulbs of which 3 are defective. If a random sample of 5 bulbs is drawn, find the probability that the sample contains (i) exactly one defective bulb (ii) exactly 2 defective bulbs (iii) no defective bulbs. Ans (i) $\frac{5}{12}$ (ii) $\frac{5}{12}$ (iii) $\frac{1}{12}$

Q3. If A and B are two mutually exclusive events and P(A) = $\frac{1}{4}$ P(B) = $\frac{2}{5}$, P(A U B) = $\frac{1}{2}$ then

Find (i) P(A ∩ B) (ii) P(A ∩ $\overline{B}$) (iii) (B – A)

Q4. In single throw of three dice, find the probability of getting a total of 17 or 18. (Ans. $\frac{1}{54}$)

Q5. The letter of word "SOCIETY" are placed at random in a row. What is probability that 3 vowels came together ? $\frac{1}{17}$

Q6. A card is drawn at random from well-shuffled deck of 52 cards. Find probability that it is neither ace, nor a king? $\frac{11}{13}$

Q7. In a lottery of 50 tickets numbered from 1 to 50, 2 tickets are drawn simultaneously. Find the probability that :-

(i) both the tickets have prime numbers on it ($\frac{21}{245}$) (ii)None of the tickets drawn has a prime number on it. $\frac{17}{35}$

Q8. Out of the students attending a lecture, 50% could not see what was written on the board and 40% could not hear. What the lecturer was saying. Most unfortunate 30% fell into both of these categories. What is the probability that a student picked at random was able to hear and see satisfactorily. $\frac{2}{5}$

Q9. If A, B and C are mutually exclusive and exhaustive events and it is known that P(A U B) = 0.63 Calculate P(c).

Q10. The probability that a student will pass final examination in both Hindi & Eng is 0.5 & probability of passing neither is 0.1. If probability of passing Eng examination is 0.75, what is probability of passing Hindi examination. (Ans. 0.65)

Q11. A box contains 9 red, 7 white and 4 black balls. If two balls drawn at random, find the probability that :-

(i) both balls are red $\frac{8}{95}$ (ii)1 ball is white $\frac{91}{190}$ (iii) balls are of same colour $\frac{63}{190}$ (iv) 1 is white and other red. $\frac{63}{190}$ ( )

Q12. One number is chosen from numbers 1 to 200. What is the probability that it is divisible by 4 or 6. $\frac{67}{200}$

Q13. The probability that a person will get an electric contract is $\frac{2}{5}$ and the probability that he will not get plumbing contract is $\frac{4}{7}$. If the probability of getting atleast one contract is $\frac{2}{3}$, what is the probability that ( ) he will get both ? $\frac{17}{105}$

Q14(i) A and B are 2 events such that P(A) = 0.42, P(B) = 0.48 and P (A and B) = 0.16. Determine (a) P(not A) (b) P (A or B)

(ii) E and F are two events such that P(E) = 0.4, P(F) = 0.5, P(EUF) = 0.6, find P (E ∩ F).

(iii) P(E) = 0.60, P(E or F) = 0.85, P (E and F) = 0.42 Find P(F).

Q15. In a single throw of two dice, find the probability that neither a doublet not a total of 9 will appear.