

CHAPTER:-PROBABILITY
WORKSHEET(HOTS)

- A committee of 5 teachers is to be formed out of 6 male teachers and 4 female teachers to prevent bullying in the school. In how many ways can this be done when (i) at least 2 female teachers are included
(ii) at most 2 female teachers are included.
- Find the probability that when a hand of 7 cards is drawn from a well-shuffled deck of 52 cards, it contains
(i) all kings (ii) 3 kings (iii) at least 3 kings.
- In a job interview for 4 posts, 5 boys and 3 girls appeared. If selection of each candidate is equiprobable, then find the probability that
(i) 3 boys and 1 girl or 1 boy and 3 girls are selected
(ii) at most 1 girl is selected.
- If A, B and C are three events such that $P(A) = 0.3$, $P(B) = 0.4$, $P(C) = 0.8$, $P(A \cap B) = 0.08$, $P(A \cap C) = 0.28$ and $P(A \cap B \cap C) = 0.09$. If $P(A \cup B \cup C) \geq 0.75$, Prove that $P(B \cap C)$ lies in the interval $[0.23, 0.48]$.
- Two students Anil and Ashima appeared in an examination. The probability that Anil will qualify the examination is 0.05 and that Ashima will qualify the examination is 0.10. The probability that both will qualify the examination is 0.02. Find the probability that:
(i) both Anil and Ashima will not qualify the examination
(ii) at least one of them will not qualify the examination
(iii) only one of them will qualify the examination.
- Three coins are tossed once. Find the probability of getting
(i) at most two heads
(ii) at least two heads
(iii) exactly two heads.
- If A, B and C are three events associated with a random experiment, Prove that $P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(B \cap C) - P(A \cap C) + P(A \cap B \cap C)$
- In an essay competition, the odds in favour of competitors P, Q, R and S are 1:2, 1:3, 1:4 and 1:5 respectively. Find the probability that one of them wins the competition.
- Four cards are drawn at a time from a pack of 52 cards. Find the probability of getting all the four cards of the same suit.
- An integer is chosen at random from the numbers ranging from 1 to 50. What is the probability that the integer chosen is a multiple of 2 or 3 or 10?