

# INDIAN SCHOOL MUSCAT

CLASS-12

DEPARTMENT OF MATHEMATICS

W.S ( 9 )

## PROBABILITY

- 1) In a class, having 60% boys, 5% of boys and 10% of girls have an IQ of more than 150. A student is selected at random and found to have an IQ of more than 150. Find the probability that the selected student is a boy.
- 2) A pair of dice is thrown 6 times. Getting a total of 7 on the two dice is considered a success. Find the Probability of getting (i) at least 5 successes (ii) exactly 5 successes.
- 3) A pair of dice is thrown 4 times . If getting a doublet is considered a success, find the probability distribution of number of successes.
- 4) Two cards are drawn simultaneously from a well packed deck of 52 cards . Find the mean and standard deviation of the number of the kings
- 5) Three Bags contain balls as shown in the table below

Bag	Number of white balls	Number of black balls	Number of red balls
I	1	2	3
II	2	1	1
III	4	3	2

A bag is chosen at random and two balls are drawn from it .They Happen to be white and red. What is probability that they came from the III bag.

- 6) On a multiple choice examinations with three possible answers ( out of which only one is correct) for each of the five questions, what is the probability that a candidate should get four or more correct answers just by guessing.
- 7) Suppose that 5% of men and 0.25% of women have grey hair , A Grey Haired person is selected at random . What is the probability of this person being a male. Assume that there are equal number of males and Females.
- 8) A random Variables X has the following probability distribution

X	0	1	2	3	4
P(X)	0	k	2k	2k	3k

Find (i) k (ii)  $P(X < 4)$  (iii)  $P(X \leq 2)$  (iv)  $P(0 < X < 3)$

- 9) Bag 1 contains 3 red and 4 black balls and Bag 2 Contains 4 red and 5 Black balls. Two balls are transferred at random from Bag1 to Bag2. The ball so drawn is red in colour. Find the probability that the transferred balls were both black.
- 10) In an examination , an examinee either guesses or copies or knows the answer of multiple choice question with 4 choice. The probability that he makes a guess is  $\frac{1}{3}$  and the probability he copies is  $\frac{1}{6}$ . Find the probability that his answer is correct, given that he copied it is  $\frac{1}{8}$ . Find the probability that he knew the answer to the question, given that he correctly answered it.

- 11) By Examining the chest X ray, probability that T.B is detected when a person is actually suffering is 0.99 the probability that the doctor diagnose incorrectly that a person has TB on the basis of Xray is 0.001. In a certain city 1 in 1000 person suffers from TB. A person selected at random is diagnosed to have TB . What is the chance that he actually has TB.
- 12) In a group of 50 scouts in a camp, 30 are well trained in first aid, remaining are well trained in hospitality and not first aid. 2 scouts are selected at random.Find the probability distribution of the no. of selected scouts who are well trained in first aid.Find the mean of the distribution.Write one more value which is expected from a scout.
- 13) In a group of 30 scientists working on an experiment,20 never commit error in their work and report results elaborately.Two scientists are selected at random .Find the probability distribution of no. of selected scientists who never commit error in work.Also find the mean of the distribution.What values are described in this question.
- 14) It is known that 10% of certain articles manufactured are defective. What is the probability that in random sample of 12 such articles , 9 are defective?
- 15) The probability of a shooter hitting a target is  $\frac{3}{4}$  . How many minimum number of times must he /she fire so that the probability of hitting the target at least once is more than 0.99?