J.E.E. Main/ Advanced Foundation - XI Maths Worksheet

Time: 60 min **Chapter#16. Probability** **Full Marks:**

Q.1 A coin is tossed and a die is thrown. Find the probability that the outcome will be a head and a number greater than 4. (2 marks)

Q.2 In a class of 60 students, 32 like Maths, 30 like Biology and 24 like both Maths and Biology. If one of these students is selected at random, find the probability that the selected student (3 marks)

(a) likes Maths or Biology
(b) likes neither Maths nor Biology
(c) likes Maths but not Biology.

Q.3 A fair coin with 1 marked on one face and 4 on the other and a fair die are both tossed, write the sample of the experiment.

Q.4 Give an example of a sure event and an impossible event. (1 mark)

Q.5 A box contains 10 red marbles, 20 blue marbles and 30 green marbles, 5 marbles are drawn from the box, what is the probability that
(i) all will be blue?
(ii) at least one will be green?

Q.6 A die is thrown, find the probability of the following events :

(i) A prime number will appear.
(ii) A number less than 6 will appear.
(iii) A number greater than or equal to 3 will appear.

Q.7 Three coins are tossed. Describe :
(i) two events which are mutually exclusive.
(ii) three events which are mutually exclusive and exhaustive.

Q.8 If $\frac{2}{11}$ is the probability of an event, what is the probability of the event 'not A'. (2 marks)

Q.9 Four cards are drawn at random from a pack of 52 playing cards. Find the probability of getting: (5 marks)

(a) all the four cards of the same suit.
(b) two red cards and two black cards.
(c) all cards of the same color.
(d) one card from each suit.

Q.10 The probability that a student will pass the final examination in both English and Hindi is 0.5 and the probability of passing neither is 0.1. If the probability of passing the English examination is 0.75, what is probability of passing the Hindi examination?

Q.11 Two dice are thrown and the sum of the numbers which come up on the dice is noted. Let us consider the following events associated with this experiment

A : 'the sum is even'
B : 'the sum is multiple of 3'
C : 'the sum is less than 4'
D : 'the sum is greater than 11'

Which pairs of these events are mutually exclusive?

Q.12 One card is drawn from a well shuffled deck of 52 cards. If each outcome is equally likely, calculate the probability that the card will be (2 marks)
(i) a diamond (ii) not an ace.

Q.13 Three dice are thrown simultaneously. Find the probability that: (5 marks)

(a) all of them show the same face.
(b) all show different faces.
(c) two of them show the same face.

Q.14 A bag contains 5 white and 3 black balls. Four balls are successively drawn out without replacement. What is the probability that they are alternatively of different colours? (2 marks)

Q.15 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, and
(iii) only one of them will qualify the examination.

Q.16 Tickets are numbered from 1 to 25. They are well shuffled and a ticket drawn at random . What is the probability that the drawn ticket has a prime number?

Q.17 The probability that a person visiting a doctor will have his blood test done is 0.75 and the probabilitythat he will be admitted is 0.30. The probability that he will have his blood test done or be admitted is 0.45. Find the probability that a person visiting the doctor will have his blood test done and be admitted? (3 marks)

Q.18 Find the probability that in a random arrangement of the word 'society' all the three vowels come together. (3 marks)

Q.19 In a lottery, a person choses six different natural numbers at random from 1 to 20, and if these six numbers match with the six numbers already fixed by the lottery committee, he wins the prize. What is the probability of winning the prize in the game?
[Hint : Order of the numbers is not important]

Q.20 Find the probability that a leap year selected at random will contain 53 Mondays.
(3 marks)
