CLASS X – MATHEMATICS – CHAPTER 15 PROBABILITY

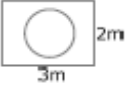Name: Date:

Q01. Why is tossing a coin considered is be way of deciding which team should get the ball at the beginning of a football match?

Q02. An unbiased die is thrown what is the probability of getting an even number.

Q03. Two unbiased coins are tossed simultaneously find the probability of getting two heads.

Q04. One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting a Jack of hearts

Q05. 18 cards numbered 1, 2, 3, ...,18 is put in a box and mixed thoroughly. A card is drawn at random from the box. Find the probabilities that the card bears

(i) an even number   (ii) a number divisible by 2 or 3

Q06. A bag contains 5 red balls, 4 green balls and 7 white balls. A ball is drawn at random from the box. Find the probability that the ball drawn is

(i) white   (ii) neither red nor white

Q07. A box contains 20 balls bearing numbers 1,2,3, 4.........,20. A ball is drawn at random from the box what is the probability that the number on the ball is.

(i) an odd number   (ii) Divisible by 2 or 3   (iii) Prime number

Q08. A card is drawn at random from a well shuffled deck of playing cards. Find the probability that the card drawn is

(i) a card of spades of an ace   (ii) a red king   (iii) neither a king nor a queen

(iv) either a king or a queen   (v) a face card

(vi) cards which is neither king nor a red card.

Q09. A bag contains 5 red and some blue balls

(i) If probability of drawing a blue ball from the bag is twice that of a red ball. Find the number of blue balls in the bag.

(ii) If probability of drawing a blue ball from the bag is four times that of a red ball. Find the number of blue balls in the bag.

Q10. A game consists of tossing a one-rupee coin 3 times and noting its outcome each time. Hanif wins it all the tosses give the same result i.e. three heads or three fails and loses otherwise. Calculate the probability that hanif will lose the game

Q11. Gopi buys a fish a fish from a shop for his aquarium. The shopkeeper taker out one fish at random from a tank containing 5 male fish and 8 female fish. What is the probability that the fish taken out is a male fish?

Q12. A lot consists of 144 ball pens of which 20 are defective and the others are food. Arti will buy a pen if it is good but will not buy if it is defective. The shopkeeper draws one pen at random and gives it to her. What is the probability that

(i) She will buy it   (ii) she will not buy it?

Q13. Harpreet tosses two different coins simultaneously (say one is of Rs 1 and other is Rs 2) what is the probability that she gets "at least one head"?

Q14. A box contains 3 blue marble, 2 white marbles, if a marble is taken out at random from the box, what is the probability that it will be a

(i)white one   (ii) Blue one   (iii) Red one

Q15. The Integers from 1 to 30 inclusive are written on cards (one number on one card). These card one put in a box and well mixed. Joseph picked up one card. What is the probability that his card has

(i) number 7   (ii) an even number   (iii) a prime number

Q16. A bag contains lemon flavoured candies only. Malini takes out one candy without looking into the bag. What is the probability that she takes out

(i) an orange flavoured candy?   (ii) a lemon flavoured candy?

Q17. A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball from the bag is twice that of a red, find the number of blue balls in the bag.

Q18. Cards marked with numbers 1,2,3,……..25 are placed in a box and mixed thoroughly and one card is drawn at random from the box what is the probability that the number on the card is

(i) a prime number?   (ii) a multiple of 3 or 5?   (iii) an odd number

(iv) neither divisible by 5 nor by 10?   (v) perfect square   (vi) a two-digit number.

Q19. One card is drawn from a well shuffled deck of 52 playing cards. Find the probability of getting

(i) a non-face card   (ii) a black king or a red queen

Q20. A child has a dice whose six faces show the letters as given below   A   B   C   D   E   A

The die is thrown once what is the probability of getting

(i) A   (ii) D

Q21. A bag contains 35 balls out of which x are blue

(i) if one ball is drawn at random, what is the probability that it will be a blue ball?

(ii) if 7 more blue balls put in bag. The probability of drawing a blue ball will be double than in find x

Q22. A game of chance consist of spinning an arrow which comes to rest pointing at one of the numbers 1,2,3,4,5,6,7,8 and these are equally likely outcomes. What is the probability that it will point at

(i) 8   (ii) an odd number   (iii) a number greater than 2   (iv) a number less than 9

Q23. A box contains 90 dicer which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears

(i) a two-digit number   (ii) a perfect square number   (iii) a number divisible by 5.

Q24. A box contains 5 red marbles, 8 white marbles and4 green marbles, one marble is taken out of the box at random what is the probability that the marble out will be

(i) red   (ii) white   (iii) not green

Q25. Five cards- the ten, Jack, queen, king and ace of diamonds are well shuffled with their face downwards. One card is than picked up at random

(i) What is the probability that the card is the queen?

(ii) if the queen is drawn and put aside what is the probability that the second card picked up is

(i) an ace   (ii) a queen?

Q26. Savita and Kavita are friends. What is the probability that both will have

(i) different birthdays?   (ii) The same birthday? (Ignoring a leap year)

Q27. A die is thrown once find the probability of getting

(i) a number greater than 4   (ii) a number between 2 and 6   (iii) a prime number

(iv) a number less than or equal to 4 (v) a no. divisible by 2   (vi) an odd number

Q28. Suppose you drop a die at random on the rectangular region shown in the fig. what is the probability that it will land inside the circle with diameter 1m?

Q29. (i) A lot of 20 bulbs contain 4 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective?

(ii) Suppose the ball drawn in is not defective and is not replaced. Now one bulb is drawn at random from the rest. What is the probability that the bulb is not defective?

Q30. A bag contains 5 red balls, 8 white balls 4 green balls and 7 black balls. If one ball is drawn at random, find the probability that it is

(i) black   (ii) red

Q31. A carton consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects Jimmy a trader. Will only accept the shirts which are good, but sujatha, another trades, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. What is the probability that

(i) It is acceptable to Jimmy?   (ii) It is acceptable to Sujatha?

Q32. A card numbered 1,2, 3……16,17 is put in a box and mixed thoroughly. One person draws a card from the box. Find the probability that the no. on the card is

(i) odd   (ii) divisible by 2   (iii) divisible by 2 and 3 both

Q33. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn is

(i) a black queen   (ii) a Jack a queen or a king   (iii) neither an ace nor a king

Q34. There are 401 students in class X of whom 25 are girls and 15 are boys. The class teacher has to select one student as a clan representative. She writer the name of each student on a separate card. The card being identical and she puts cards in a bag and stirs thoroughly she then draws one card from the bag. What is the probability that the name written on the card is the name of a

(i) girl   (ii) boy?

Q35. A piggy bank contains hundred 50P coins, fifty Rs 1 coins, twenty Rs 2 coins and ten Rs 5 coins. If it is equally likely that one of the coins will fall out when the hand is turned upside down. What is the probability that the coin

(i) will be a 50P coin   (ii) will not be a ₹5 coin?

Q36. (a) A black die and a white die are thrown at the same time. Write all the possible outcomes. What is the probability that the sum of the two numbers that turn up is 8?

(b) Find the probability of obtaining

(i) a total of 6   (ii) a total of 10   (iii) The same no. on both dice

Q37. If two dice are thrown one find the probability of getting 9?

Q38. A card is drawn from a well shuffled deck of playing cards. Find the probability of a face card

Q39. What is the probability of having 53 Mondays in a leap year?

Q40. Cards bearing numbers 3 to 20 are placed in a bag and mixed thoroughly. A card is taken out from the bag at random what is the probability that the number on the card taken out is an even number?

Q41. A bag contains 5 red 4 black and 3 green balls. A ball is taken out of the bag at random find the probability that the selected ball is

(i) of red colour   (ii) not of green colour

Q42. From a well shuffled pack of 52 cards black aces and black queens are removed. From the remaining cards a card is drawn at random find the probability of drawing a king or a queen

Q43. Which of the following experiments have equally likely outcomes? Explain.

(i) a driver attempts to start a car. The car starts or does not start.

(ii) A player attempts to shoot a basketball she/he shoots or misses the shot

(iii) A baby is born. It is a boy or a girl.

Q44. Find the probability that a number selected at random from the numbers 1,2, 3….,35 is a

(i) Prime number   (ii) multiple of 7   (iii) multiple of 3 or 5

Q45. From a pack of 52 playing cards, Jacks, queens, kings and aces of red colour are removed. From the remaining a card is drawn at random. Find the probability that the card drawn is

(i) a black queen   (ii) a red card

(iii) a black Jack   (iv) an honourable card