



# SHIKSHA CLASSES

Sub. : Maths  
Std. : X<sup>th</sup> - CBSE

Question Paper  
14 : Probability

Marks : 30  
Time : 1 Hour.

Section : A (Each 1 Mark)

## Multiple choice Questions (MCQs).

- Q.1 : If an event occurs surely, then its probability is
- a) 0                      b) 1                      c)  $\frac{1}{2}$                       d)  $\frac{3}{4}$
- Q.2 : If the probability of an event is 0.65, then the probability of not happening of that event is.....
- a) 0.35                      b) 0.035                      c) 1 : 25                      d) 3
- Q.3 : Two friends were born in the year 2000. The probability that they have the same birth date is .....
- a)  $\frac{1}{2000}$                       b)  $\frac{2}{365}$                       c)  $\frac{1}{365}$                       d)  $\frac{1}{366}$
- Q.4 : If an event cannot occur, then its probability is.....
- a) 1                      b)  $\frac{3}{4}$                       c)  $\frac{1}{2}$                       d) 0
- Q.5 : A die is thrown once. The probability of getting an even number is.....
- a)  $\frac{1}{3}$                       b)  $\frac{1}{6}$                       c)  $\frac{1}{4}$                       d)  $\frac{1}{2}$
- Q.6 : Which of the following can be the probability of an event?
- a) -0.04                      b) 1.004                      c)  $\frac{18}{25}$                       d)  $\frac{8}{7}$
- Q.7 : A bag contains lemon flavoured candies only. Shalini takes out one candy without looking into the bag. The probability she takes out an orange flavoured candy is
- a)  $\frac{1}{2}$                       b) 0                      c) 1                      d)  $\frac{2}{3}$
- Q.8 : A single letter is selected at random from the word 'PROBABILITY'. The probability that it is a vowel is

- a)  $\frac{3}{11}$       b)  $\frac{4}{11}$       c)  $\frac{2}{11}$       d)  $\frac{5}{11}$

Q.9 : The probability of getting 53 friday's in a leap year is

- a)  $\frac{1}{7}$       b)  $\frac{2}{7}$       c)  $\frac{4}{7}$       d)  $\frac{5}{7}$

**For question number 10 to 11 two statements are given one labeled Assertion and other labeled Reason select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below**

- a) Both Assertion (A) & Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A).  
b) Both Assertion (A) & Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).  
c) Assertion (A) is true but Reason (R) is false.  
d) Assertion (A) is false but Reason (R) is true.

Q.10 : **Assertion (A):** The probability of a sure event is 1.

**Reason (R):** Let E be an event. Then  $0 \leq P(E) \leq 1$ .

Q.11 : **Assertion:** If a box contains 5 white, 2 red and 4 black marbles, then the probability of not drawing a white marble from the box is  $\frac{5}{11}$ .

**Reason:**  $P(\bar{E}) = 1 - P(E)$ , where E is any event.

**Section : B (Each 2 Marks)**

Q.12 : If a number x is chosen at random from the numbers -2, -1, 0, 1, 2. What is the probability that  $x^2 < 2$  ?

Q.13 : The number x is selected from the numbers 1, 2, 3 and then a second number y is randomly selected from the numbers 1, 4, 9. What is the probability that the product xy of the two numbers will be less than 9?

**OR**

Find the probability that a leap year selected at random will contain 53 sundays.

**Section : C (Each 3 Marks)**

Q.14 : 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 (iii) not green

Q.15 : 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 trader will only reject the shirts which have major defect. One shirt is drawn at random from the cartoon, what is the probability, that it is acceptable to (i) Jimmy (ii) Sujatha?

**OR**

A piggy bank contains hundred 50 paisa coins, fifty Rs. 1 coins, twenty Rs. 1 2 coins and ten Rs. 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned up side down, what is the probability that the coin (i) Will be a 50 paisa coin? (ii) Will not be Rs. 5 coin?

**Section - D(Each 5 Marks)**

Q.16 : Two dice are thrown simultaneously. Find the probability of getting.

- i) an even number as the sum.
- ii) the sum as a prime number
- iii) a multiple of 2 on one die and a multiple of 3 on the other.
- iv) Same number on both dice i.e. a doublet.
- v) 11 (Eleven) as the sum.

**OR**

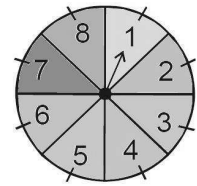
One card is drawn from a pack of 52 cards each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is :

- i) An ace
- ii) Either red or king
- iii) Red and a king
- iv) a face card
- v) Five (5) of spade.

**Section : E**

Q.17 : **Case Study :**

One day Rahul visited park along with his friend. There he saw a game of chance that consists of spinning an arrow (as shown in below figure) that comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 and these are equally likely outcomes.



- i) Find the probability that the arrow will point at 2. 1
- ii) Find the probability that the arrow will point at a prime number. 1
- iii) Find the probability that the arrow will point at a number divisible by 3. 2

**OR**

Find the probability that the arrow will point at a number greater than 2.

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