

Board – CBSE

Class – 9

Topic – Probability

Multiple Choice Question Type

- If $P(E) = 0.37$, then $P(\text{not } E)$ will be
(A) 0.37 (B) 0.63
(C) 0.57 (D) None of these
- Probability of getting even number in a single throw of dice is
(A) $\frac{1}{2}$ (B) $\frac{1}{6}$
(C) $\frac{5}{6}$ (D) None of these
- There are 5 prizes on 1000 tickets of a lottery of company. Probability of winning prize is
(A) $\frac{199}{200}$ (B) $\frac{1}{200}$
(C) $\frac{198}{200}$ (D) None of these
- Probability of drawing an ace from a deck of 52 cards is
(A) $\frac{1}{52}$ (B) $\frac{1}{26}$
(C) $\frac{1}{13}$ (D) $\frac{3}{52}$
- There are 5 red and 3 black balls in a bag. Probability of drawing a black ball is
(A) $\frac{5}{8}$ (B) $\frac{1}{2}$
(C) $\frac{3}{8}$ (D) None of these
- If the probability of winning a game is 0.3, then probability of losing it is
(A) 0.6 (B) 0.7
(C) 0.5 (D) None of these

7. Probability of drawing **10** of a black suit from a deck of 52 cards is
- (A) $\frac{1}{52}$ (B) $\frac{1}{26}$
(C) $\frac{1}{13}$ (D) None of these
8. A dice is thrown once. Probability of getting a number 3 or 4 is
- (A) $\frac{1}{6}$ (B) $\frac{2}{3}$
(C) $\frac{1}{2}$ (D) $\frac{1}{3}$
9. There are 50 tickets numbered from 1 to 50 in a box. Probability of drawing a ticket bearing prime number is
- (A) $\frac{13}{50}$ (B) $\frac{3}{10}$
(C) $\frac{17}{50}$ (D) None of these
10. Probability of a leap year having 53 Sundays is
- (A) $\frac{1}{7}$ (B) $\frac{3}{7}$
(C) $\frac{2}{7}$ (D) None of these

ANSWERS

1. (B) 2. (A) 3. (B) 4. (C) 5. (C)
6. (B) 7. (B) 8. (D) 9. (B) 10. (C)

Long Answer Type

- The record of a weather station shows that out of the past 250 consecutive days, its weather forecast were correct 175 times.
 - What is the probability that on a given day it was correct?
 - What is the probability that it was not correct on a given day?
- A die is thrown once. Find the probability of getting a prime number.
- A coin is thrown once. Find the probability of getting a head.
- From a group of 2 boys and 3 girls, we select a child. Find the probability of this child being a girl.
- A coin is tossed 200 times and is found that the tail comes up for 120 times. Find the probability of getting a tail.
- If a coin is tossed for a certain number of times. How many times the coin was tossed, if the probability of getting a head is 0.4 and it appeared up for 24 times?
- In a GK test a student was given 50 questions one by one. He gave the correct answer for 30 questions. Find the probability of giving correct answers.
- Define a (i) Theorem, (ii) Axiom and (iii) Conjecture.
- Prove that the product of two even natural numbers is divisible by 16.
- A coin is tossed 150 times and it is found that head comes 1115 times and tail 35 times. If a coin tossed at random, what is the probability of getting
 - a head
 - a tail
- A bag-I contains four cards numbered 1, 3, 5 and 7 respectively. Another bag-II contains here cards numbered 2, 4 and 6 respectively. A card is drawn at random from each bag. Find the probability that the sum of two cards drawn is 9.
- A bag contains 7 white, 3 red and 4 black balls. A ball drawn at random. Find the probability that it is a red or a black ball.
- In a single throw of two dice, find the probability of getting a total of 8.
- One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting a face card.
- Two unbiased coins are tossed once. What is the probability of getting exactly one head?
- What is the probability of a sure event?
- How many faces a common die has?
- When a die is thrown once, what can be the greatest possible score?
- If two dice are thrown together, then what must be the greatest possible score?

20. Eleven bags of wheat flour, each marked 5 kg actually contained the following weights of flour (in kg):

4.97 5.05 5.08 5.03 5.00 5.06 5.08 4.98 5.04 5.07 5.00

Find the probability that any of these bags chosen at random contains more than 5 kg of flour.

21. Given below is the frequency distribution table regarding the concentration of sulphur dioxide in the air in parts per million (ppm) of a certain city for 30 days:

Conc. of SO ₂	0.00-0.04	0.04-0.08	0.08-0.12	0.12-0.16	0.16-0.20	0.20-0.24
No. of days	4	8	9	2	4	3

Find the probability of concentration of sulphur dioxide in the interval (0.12 – 0.16) on any of these days.

22. Answer the following:

(i) If $P(E) = 0.2$, find $P(\text{not } E)$.

(ii) "Probability of an event cannot be greater than 1". Is the statement true or false?

(iii) What is the probability of a sure event?

(iv) If a coin is tossed 40 times and 19 times head appears and 21 times tail appears, write the probability of getting a head in a trial out of these 40 trials of the experiment.

23. A type manufacturing company kept a record of the distance covered before a tyre needed to be replaced. The table show the result of 1000 cases:

Distance (in km)	Less than 4000	4000 to 9000	9000 to 14000	More than 14000
Frequency	20	210	325	445

If a tyre of this company is bought, what is the probability that:

(i) it will need to be replaced before it has covered 4000 km?

(ii) it will last more than 9000 km?

(iii) it will need to be replaced after it has covered between 4000 km and 14000 km?

24. A survey was conducted by car manufacturing company in a metropolitan city on 1000 persons having monthly income from Rs. 30,001 to Rs. 50000. The data about the number of persons in various categories is as under.

Monthly income (in Rs.)	Number of cars		
	1	2	More than 2
30,001 – 40,000	400	50	25
40,001 – 50,000	100	300	125

Find the probability that a person selected at random

- (i) In the income slab 40,001 – 50,000 have more than 2 cars.
- (ii) In the income slab 30,001 to 50,000 have two cars.

25. A die having six faces is tossed 80 times and the data is as below:

Outcome	1	2	3	4	5	6
Frequency	10	20	10	28	8	4

Find: (i) $P(1)$ (ii) $P(4)$ (iii) $P(6)$ (iv) $P(5)$.

26. The blood groups of 30 students of class IX are recorded as follows:

A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O,
A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O

A student is selected at random from the class from blood donation. Find the probability that the blood groups of the student chosen is:

- (i) A (ii) B (iii) AB (iv) O

27. The following table gives the lifetime of 400 lamps:

Lifetime (in hrs)	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
No. of lamps	14	56	60	86	74	62	48

A bulb is selected at random. Find the probability that the life time of the selected bulb is:

- (i) less than 400 hours
- (ii) between 300 to 800 hours
- (iii) at least 700 hours

28. Given below is the frequency distribution of wages (in Rs.) of 30 workers in a certain factory

Wages (in Rs.)	110-130	130-150	150-170	170-190	190-210	210-230	230-250
No. of workers	3	4	5	6	5	4	3

A worker is selected at random. Find the probability that his wages are:

- (i) less than Rs. 150
- (ii) at least Rs. 210
- (iii) more than or equal to 150 but less than 210