PROBABILITY

OBJECTIVE SECTION
[BASIC/STANDARD]

I. MULTIPLE CHOICE QUESTIONS

1. Which of the following, can be the probability of an event ?

(*a*) –0.04 (*b*) 1.004 (*c*) $\frac{18}{23}$ (*d*) $\frac{8}{7}$

2. A card is selected at random from a well shuffled deck of 52 cards. The probability of its being a face card is

(*a*) $\frac{3}{13}$ (*b*) $\frac{4}{13}$ (*c*) $\frac{6}{13}$ (*d*) $\frac{9}{13}$

3. A bag contains 3 red balls, 5 white balls and 7 black balls. What is the probability that a ball drawn from the bag at random will be neither red nor black ?

(*a*) $\frac{1}{5}$ (*b*) $\frac{1}{3}$ (*c*) $\frac{7}{15}$ (*d*) $\frac{8}{15}$

4. If an event cannot occur, then its probability is :

(*a*) 1 (*b*) $\frac{3}{4}$ (*c*) $\frac{1}{2}$ (*d*) 0

5. Which of the following cannot be the probability of an event ?

(*a*) $\frac{1}{3}$ (*b*) 0.1 (*c*) 3% (*d*) $\frac{17}{16}$

6. An event is very unlikely to happen. Its probability is closest to :

(*a*) 0.0001 (*b*) 0.001 (*c*) 0.01 (*d*) 0.1

7. If the probability of an event is p, the probability of its complementary event will be :

(*a*) $p - 1$ (*b*) p (*c*) $1 - p$ (*d*) $1 - \frac{1}{p}$

8. The probability expressed as a percentage of a particular occurrence can never be

(*a*) less than 100 (*b*) less than 0
(*c*) greater than 1 (*d*) anything but a whole number

9. If P(A) denotes the probability of an event A, then

(*a*) $P(A) < 0$ (*b*) $P(A) > 1$ (*c*) $0 \le P(A) \le 1$ (*d*) $-1 \le P(A) \le 1$

10. A card is selected from a deck of 52 cards. The probability of its being a red face card is:

(*a*) $\frac{3}{26}$ (*b*) $\frac{3}{13}$ (*c*) $\frac{2}{13}$ (*d*) $\frac{1}{2}$

11. The probability that a non leap year selected at random will contain 53 Sundays is:

(*a*) $\frac{1}{7}$ (*b*) $\frac{2}{7}$ (*c*) $\frac{3}{7}$ (*d*) $\frac{5}{7}$

12. When a die is thrown, the probability of getting an odd number less than 3 is:

(*a*) $\frac{1}{6}$ (*b*) $\frac{1}{3}$ (*c*) $\frac{1}{2}$ (*d*) 0

13. A card is drawn from a deck of 52 cards. The event E is that the card is not an ace of hearts. The number of outcomes favourable to E is :

(*a*) 4 (*b*) 14 (*c*) 21 (*d*) 51

14. The probability of getting a bad egg in a lot of 400 is 0.035. The number of bad eggs in the lot is :

(*a*) 7 (*b*) 14 (*c*) 21 (*d*) 28

15. A girl calculates that the probability of her winning the first prize in a lottery is 0.08. If 6000 tickets are sold, how many tickets has she bought ?

(*a*) 40 (*b*) 240 (*c*) 480 (*d*) 750

16. One ticket is drawn at random from a bag containing tickets numbered 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is

(*a*) $\frac{1}{5}$ (*b*) $\frac{3}{5}$ (*c*) $\frac{4}{5}$ (*d*) $\frac{1}{3}$

17. Someone is asked to take a number from 1 to 100. The probability that it is prime is :

(*a*) $\frac{1}{5}$ (*b*) $\frac{6}{25}$ (*c*) $\frac{1}{4}$ (*d*) $\frac{13}{50}$

18. A school has five houses A, B, C, D and E. A class has 23 students, 4 from house A, 8 from house B, 5 from house C, 2 from house D and rest from house E. A single student is selected at random to be the class monitor. The probability that the selected student is not from A, B and C is :

(*a*) $\frac{4}{23}$ (*b*) $\frac{6}{23}$ (*c*) $\frac{8}{23}$ (*d*) $\frac{17}{23}$

19. A card is drawn at random from a well shuffled pack of 52 cards. Probability that the card drawn is neither a red card nor a queen :

(*a*) $\frac{5}{13}$ (*b*) $\frac{3}{13}$ (*c*) $\frac{2}{13}$ (*d*) $\frac{6}{13}$

20. An unbiased die is tossed once. The probability of getting a multiple of 2 or 3 :

(*a*) $\frac{1}{6}$ (*b*) $\frac{5}{6}$ (*c*) $\frac{1}{2}$ (*d*) $\frac{2}{3}$

21. A child has dice, whose six faces show the letters as given below :

A	B	C	D	A	D	A

The dice is thrown once. The probability of getting D is :

(*a*) $\frac{1}{6}$ (*b*) $\frac{2}{3}$ (*c*) $\frac{1}{3}$ (*d*) None of these

22. Cards marked with numbers 1, 3, 5, ..., 101 are placed in a bag and mixed thoroughly. A card is then drawn at random from the bag. The probability that the number on the drawn card is a prime number less than 20 is :

(*a*) $\frac{7}{51}$ (*b*) $\frac{5}{51}$ (*c*) $\frac{13}{51}$ (*d*) $\frac{9}{51}$

23. Two dice are thrown simultaneously. The probability of getting doublet of even number:

(*a*) $\frac{1}{12}$ (*b*) $\frac{5}{12}$ (*c*) $\frac{7}{12}$ (*d*) $\frac{3}{4}$

24. A number selected at random from the numbers 1 to 30, the probability that it is a prime number is :

(*a*) $\frac{1}{2}$ (*b*) $\frac{3}{5}$ (*c*) $\frac{2}{5}$ (*d*) $\frac{1}{3}$

II. FILL IN THE BLANKS

1. Tossing a coin is an _____.

2. The theoretical probability is also known as _____ probability.

3. The _____ of the probabilities of all the elementary events of an experiment is 1.

4. P(E) = 1 – _____.

5. The probability of an _____ event is 0.

6. A deck of playing cards has _____ suits.

7. Kings, queens and jacks are called _____ cards.

8. There are _____ aces in a pack of playing cards.

9. Sample space when two coins are tossed simultaneously are _____.

10. Probability of getting a number less than 50 on a die is _____.

III. VERY SHORT ANSWER QUESTIONS

1. A die is thrown. Find the probability of getting 1.

2. Probability of which event is 100%?

3. If a number is chosen at random from the numbers 1 to 20, find the probability of getting a prime number.

4. If a letter of English alphabet is chosen at random, then find the probability that the letter is a vowel.

5. Find the probability of getting a number between 3 and 100 which is divisible by 7.

6. In tossing two coins, find the probability of getting 2 heads.

7. Find the probability of selecting an even prime number from 1 to 50.

8. A dice is thrown once. What is the probability of getting a number greater than 4.

9. Find the probability of getting a factor of 6 in throwing a die.

10. Two friends are born in the year 2010. What is probability that they have the same birthday?

ANSWERS

I. Multiple Choice Questions :

1. (*c*) **2.** (*a*) **3.** (*b*) **4.** (*d*) **5.** (*d*) **6.** (*a*) **7.** (*c*) **8.** (*b*) **9.** (*c*) **10.** (*a*) **11.** (*a*)
12. (*a*) **13.** (*d*) **14.** (*b*) **15.** (*c*) **16.** (*a*) **17.** (*c*) **18.** (*b*) **19.** (*d*) **20.** (*d*) **21.** (*d*) **22.** (*a*)
23. (*a*) **24.** (*d*)

II. Fill in the Blanks :

1. Experiment **2.** classical **3.** sum **4.** $P(\overline{E})$ **5.** impossible **6.** 4 **7.** face **8.** 4
9. (HH, HT, TH, TT) **10.** 1

III. Very Short Answer Questions :

1. $\frac{1}{6}$ **2.** Sure **3.** $\frac{8}{20}$ **4.** $\frac{5}{26}$ **5.** $\frac{1}{7}$ **6.** $\frac{1}{4}$ **7.** $\frac{1}{50}$ **8.** $\frac{1}{3}$ **9.** $\frac{2}{3}$ **10.** $\frac{1}{365}$