

Chapter 14 Probability

UNIT TEST

Duration: 1 hour

Marks: 30

SECTION A

Each carry 1 mark

1. In a survey, it is found that every fifth person possess a vehicle. The probability of a person 'not possessing the vehicle' is:

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

2. A coin is tossed 1000 times and 560 times a 'tail' occurs. The empirical probability of occurrence

of a Head in this case is:

- a) 0.50 b) 0.56 c) 0.44 d) 0.056

3. A man is known to speak truth 3 out of 4 times. He throws a die and a number other than six comes up, then the probability that he reports it is a six is

- a) $\frac{3}{4}$ b) $\frac{1}{4}$ c) $\frac{1}{2}$ d) 1

4. Assertion: If a die is thrown, the probability of getting a number less than 3 and greater than 2 is zero.

Reason: Probability of an impossible event is zero.

Reason:

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(b) Both Assertion (A) and 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.

SECTION B

Each carry 2 marks

5. Cards marked with numbers 5 to 50 are placed in a box and mixed thoroughly. A card is drawn from the box at random. Find the probability that the number on the taken out card is (i) a prime number less than 10 (ii) a number which is a perfect square.

6. If a number is chosen at random from the numbers -3, -2, -1, 0, 1, 2, 3. What is the probability that $x^2 < 4$?

7. 20 tickets on which numbers 1 to 20 are written mixed thoroughly and then a ticket is drawn at random out of them. Find the probability that the number on the drawn ticket is a multiple of 3 or 7.

SECTION C

Each carry 3 marks

8. Two different dice are thrown together. Find the probability that (i) the sum of the numbers appeared is less than 7. (ii) the product of the numbers appeared is less than 18.

9. A die has its faces marked 0, 1, 1, 1, 6, 6. Two such dice are thrown together and the total score is recorded. (i) How many different scores are possible? (ii) What is the probability of getting a total of 7?

SECTION D

Each carry 5 marks

10. The king, the jack and the 10 of spades are lost from a pack of 52 cards and a card is drawn from the remaining cards after shuffling. Find the probability of getting a (i) red card (ii) black jack (iii) red king (iv) 10 of hearts.

11. A pair of dice is thrown once. Find the probability of (i) getting a total of 5 on two dice, (ii) getting a multiple of 2 on one die and a multiple of 3 on the other.

SECTION E

12. A die is numbered in such a way that its faces show the numbers 1, 3, 3, 4, 2, 6. It is thrown twice and the product of the score is noted. Complete the table and answer the questions below:

	1	3	3	4	2	6
1	1	3	3	4	2	6
3		9		12		
3			9			18
4				16		
2			6			12
6		18		24	12	

- Write the probability of getting the product as 18.
- Find the probability of getting the product, as an odd number.
- What is the probability of getting the product as at least 10?
- Determine the probability of getting the product a number which is not a multiple of 3.

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Answers

UNIT TEST

3. b) $\frac{1}{4}$

1. b) $\frac{4}{5}$

2. c) 0.44

4. (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

5. $\frac{1}{23}, \frac{5}{46}$

6. $\frac{3}{7}$

10. $\frac{26}{49}, \frac{1}{49}, \frac{2}{49}, \frac{1}{49}$

7. $\frac{2}{5}$

11. $\frac{1}{9}, \frac{11}{36}$

8. $\frac{5}{12}, \frac{13}{18}$

12. i) $\frac{1}{18}$

ii) $\frac{1}{4}$

iii) $\frac{7}{18}$

iv) $\frac{1}{4}$

9. 6, $\frac{1}{3}$