Mathematics — Ganita Manjari

Chapter 7 Test 1

The Mathematics of Maybe: Introduction to Probability

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Give exact answers unless an approximation is requested.
3. Use the stated fairness and replacement conditions in each question.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Probability measures the:

(A) Length of an event
(B) Likelihood of an event
(C) Time taken by an event
(D) Number of repetitions only

2. Which event is certain when a standard die is rolled?

(A) Obtaining 6
(B) Obtaining an odd number
(C) Obtaining a number below 7
(D) Obtaining 0

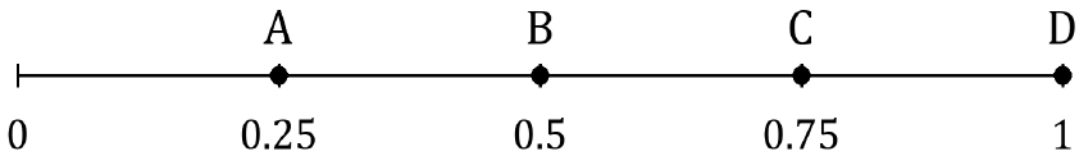
3. Which is the sample space for one coin toss, recording heads (H) or tails (T)?

(A) $\{H, T\}$
(B) $\{HH, TT\}$
(C) $\{H\}$
(D) $\{0,1,2\}$

4. Which number cannot be a probability?

(A) 0
(B) $\frac{3}{4}$
(C) 1
(D) $\frac{5}{4}$

5. Which point represents an even chance?



(A) A
(B) B
(C) C
(D) D

SECTION B

(4 questions × 2 marks = 8 marks)

6. Two fair coins are tossed independently. List the outcomes with exactly one head and find their probability.

7. A fair standard die is rolled. List the prime outcomes and calculate the probability of a prime number.

8. In 80 coin tosses, heads occurs 46 times. Find the number of tails and the experimental probability of tails.

9. A cup is tossed 100 times. Estimate the probability of landing on its side. Explain why three possible positions do not imply probability 1/3 for each.

Position	Bottom	Top	Side
Frequency	20	15	65

SECTION C

(3 questions × 3 marks = 9 marks)

10. One of the 11 letter cards spelling PROBABILITY is chosen uniformly. Find the probabilities of B and of a vowel. Treat A, E, I, O, U as vowels.

11. Three fair coins are tossed independently. List the sample space and find the probability of exactly two heads.

12. In a representative sample of 50 pupils, 18 prefer oranges. Estimate how many of 1200 pupils prefer oranges. Why is your result an estimate?

SECTION D

(1 application question × 3 marks = 3 marks)

13. A game awards a win to A for a number divisible by 3 on a fair die, and to B for every other number. Find both winning probabilities. Reassign one face to make the game fair.