Mathematics — Ganita Manjari

Chapter 7 Test 5

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. A probability of 0.72 corresponds to:

(A) 7.2% (B) 0.72%
(C) 72% (D) 720%

2. A school surveys 60 of its 900 pupils. The population consists of:

(A) The 60 surveyed pupils (B) All 900 pupils
(C) Only pupils who agree (D) The survey questions

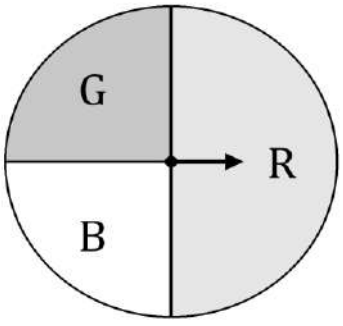
3. Which record can occur in five independent tosses of a fair coin?

(A) Only HTHTH (B) Only records with both H and T
(C) Only records with three heads (D) HHHHH as well as mixed records

4. Why are HT and TH separate outcomes when two labelled coins are tossed?

(A) They specify different results for the labelled coins
(B) Their probabilities must differ
(C) One outcome is impossible
(D) They contain different numbers of heads

5. A spinner is equally likely to stop at any angle. Which label is twice as likely as B?



(A) B (B) G
(C) R (D) All three

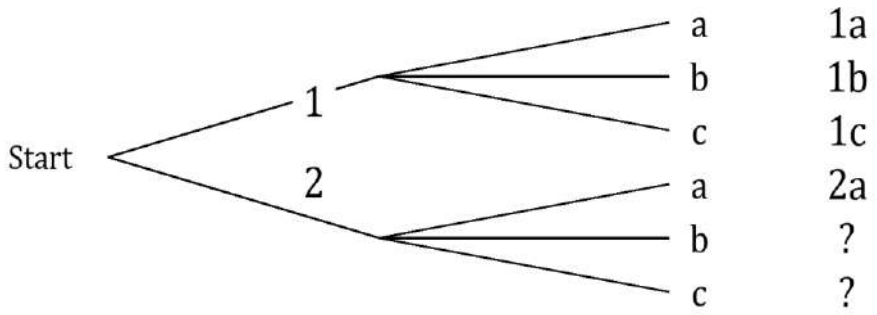
SECTION B

(4 questions × 2 marks = 8 marks)

6. One letter position is selected uniformly from MATHEMATICS. Find the probability of M or T.

7. Player A scores 18 goals in 30 attempts; B scores 24 in 50. Compare their experimental scoring probabilities. Who has the better observed rate?

8. A choice of 1 or 2 is followed by a choice of a, b or c. Complete the two missing outcome labels in the tree and state the sample-space size.



9. An event occurs 17 times in 60 trials. Express its experimental probability as a fraction and as a percentage correct to one decimal place.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Two fair dice are rolled independently. Find the probability that both show the same number. Explain why the probability is not 1/2 merely because the dice can match or not match.

11. Cards 1, 2 and 3 are drawn uniformly twice without replacement. List the branches from each first card and the six complete outcomes and find the probability that the second number is larger than the first.

12. A bag of 1000 sweets is estimated to contain 300 yellow sweets. A representative sample contains 50 sweets. How many yellow sweets would match this estimate exactly? Explain why a sample taken only from the top may mislead.

SECTION D

(1 application question × 3 marks = 3 marks)

13. Two different digits are chosen uniformly in order from 1, 2, 3 to form a two-digit number. A wins for an even number; B wins for an odd number. List the numbers and decide whether the game is fair.