Mathematics — Ganita Manjari

Chapter 7 Test 2

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)

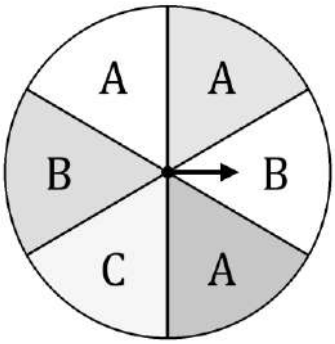
1. What distinguishes a random experiment?

(A) Its next result is uncertain
(B) Its results are always different
(C) It cannot be repeated
(D) Its outcomes are all impossible

2. Among 40 surveyed children, 12 cycle to school. The relative frequency of cycling is:

(A) 12
(B) 40
(C) 0.3
(D) 3.33

3. A fair spinner has six equal sectors. What is the probability of landing on A?



(A) $\frac{1}{3}$
(B) $\frac{1}{2}$
(C) $\frac{1}{6}$
(D) $\frac{2}{3}$

4. Which calculation gives experimental probability?

(A) Trials ÷ occurrences
(B) Possible ÷ favourable
(C) Occurrences − trials
(D) Occurrences ÷ trials

5. An event in a random experiment is:

(A) A subset of the sample space
(B) Always a single outcome
(C) Always the whole sample space
(D) A list of trial dates

SECTION B

(4 questions × 2 marks = 8 marks)

6. A bag has 2 red and 8 blue identical balls. One ball is selected uniformly. Write the colour sample space and explain whether its two outcomes are equally likely.

7. Cards numbered 1 to 12 are equally likely to be drawn. Find the probability of a number divisible by 2 or 3.

8. A fair die shows 3 on 9 of 36 rolls. Calculate the experimental and theoretical probabilities of 3, and their absolute difference.

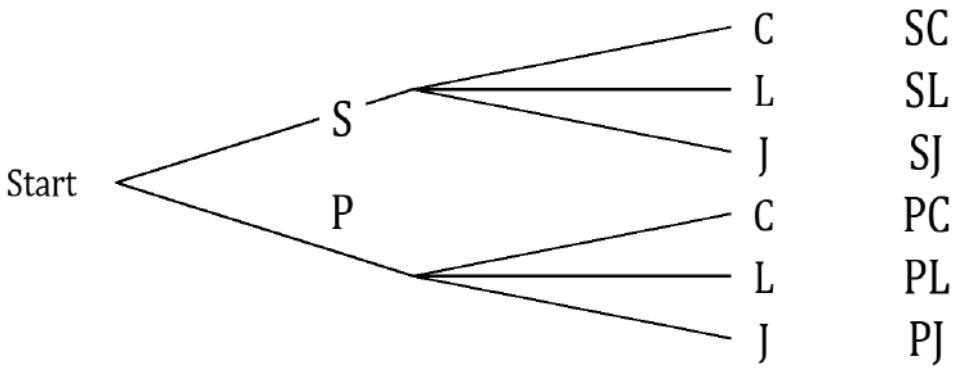
9. A pupil asks only library visitors which school club is most popular. Give one reason the sample may be biased and one way to improve it.

SECTION C

(3 questions × 3 marks = 9 marks)

10. A fair coin and a fair die are used independently. List the outcomes with a tail and a number above 4; find their probability among all combined outcomes.

11. One of two snacks and one of three drinks are chosen independently and uniformly. List all complete choices and find the probability of S with J. Use the displayed abbreviations.



S: samosa P: pakora C: chai L: lassi J: juice

12. A fair coin has shown tails on five consecutive tosses. A student says heads is now certain. State the probability of heads on the next toss and explain the error.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A bag contains 3 red and 5 blue identical counters. How many red counters must be added to make the probability of red 1/2? Verify your answer.