Mathematics — Ganita Manjari

Chapter 7 Test 10

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. Rolling a die is an experiment. Which phrase names an event for this experiment?

(A) Rolling the die
(B) Recording the trial number
(C) Obtaining a factor of 6
(D) Repeating the roll ten times

2. Which claim about randomness is false?

(A) Results may repeat
(B) Outcomes may have unequal chances
(C) Possible outcomes may be known
(D) Every result must differ from the last

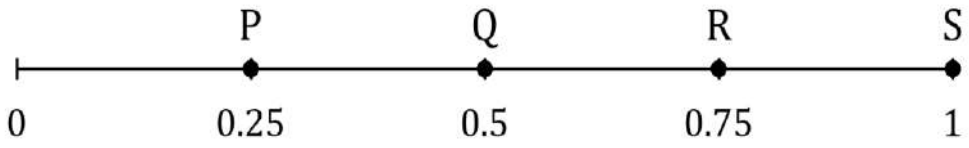
3. Two players have different numbers of attempts. To compare scoring chances, use:

(A) The larger goal count alone
(B) Goals divided by attempts for each player
(C) The larger attempt count alone
(D) The sum of both goal counts

4. An event has probability 1/2. Which conclusion follows?

(A) Both alternatives are equally likely
(B) It occurs once in every two trials
(C) It cannot repeat twice
(D) Its next occurrence is predictable

5. An event has probability equal to point P. Which point gives the probability that it does not occur?



(A) P
(B) Q
(C) R
(D) S

SECTION B

(4 questions × 2 marks = 8 marks)

6. A match may end in a win, loss or draw. Explain why listing only win and loss gives an incomplete sample space. Does listing three outcomes prove each has probability 1/3?

7. A report states that an event had experimental probability 0.35 in exactly 30 trials. Can 0.35 be exact? Explain.

8. A bag contains 6 red, 3 blue and 3 green identical balls. What is the fewest number of added balls needed to make all three colours equally likely? Specify the colours.

9. A fair standard die is rolled. Compare the probability of a non-prime number with that of a composite number. Explain the difference.

SECTION C

(3 questions × 3 marks = 9 marks)

10. One of the 60 pupils in the table is selected uniformly. Find the probabilities of selecting a cyclist, a senior pupil and a senior cyclist.

Group	Cycle	Other travel
Junior	8	22
Senior	12	18

11. Three fair coins are tossed independently in order. List the outcomes in which the first and third results match and find their probability.

12. Two fair dice are rolled independently. Find the probability that their product is odd. Explain which face choices are favourable.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A weather model gives a 30% chance of rain. Design a simulation using ten identical cards numbered 0 to 9, specifying rain labels, a no-rain rule and replacement. Explain why a trial does not predict the actual next day.