Mathematics — Ganita Manjari

Chapter 7 Test 3

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. Which statement is a subjective assessment of probability?

(A) A fair die has six faces
(B) Rain occurred on 18 of 60 recorded days
(C) I feel rain is unlikely because the sky looks clear
(D) A fair coin has two equally likely sides

2. For a standard die, the event "a negative number occurs" is:

(A) Certain
(B) An even chance
(C) More likely than not
(D) Impossible

3. Three coins are tossed and only the number of heads is recorded. Which is the correct sample space?

(A) {1,2,3}
(B) {0,1,2,3}
(C) {0,1,2}
(D) {0,1,2,3,4}

4. One of the displayed cards is chosen uniformly. What is the probability that it is not E?



(A) $\frac{3}{5}$
(B) $\frac{2}{5}$
(C) $\frac{1}{5}$
(D) $\frac{4}{5}$

5. For repeated independent tosses of a fair coin, the relative frequency of heads generally:

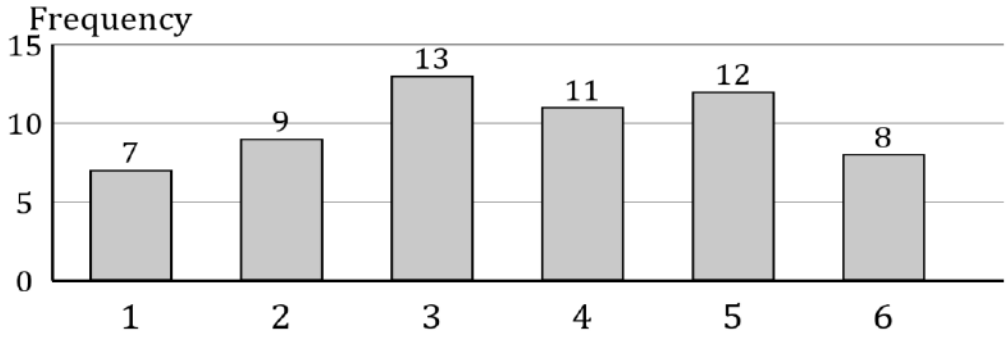
(A) Is exactly 1/2 in every even run
(B) Tends to 1/2 in a long run
(C) Eventually equals 1
(D) Depends only on the last toss

SECTION B

(4 questions × 2 marks = 8 marks)

6. A weather record uses only “rain” and “no rain”. Replace this with a sample space that distinguishes light and heavy rain, and state its size.

7. A die was rolled 60 times. Use the recorded frequencies to estimate the probability of an outcome above 4.



8. In 50 trials, an event has experimental probability 0.38. How many times did it occur, and how many times did it fail to occur?

9. One integer from −4 to 4 inclusive is chosen uniformly. List the sample space and find the probability of a negative integer.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Cards marked A, B and C are drawn uniformly twice, replacing the first card before the second draw. List all ordered outcomes and find the probability of matching letters.

11. Two fair dice are rolled independently. List the ordered pairs whose sum is 7 and calculate the probability of this sum.

12. A representative survey of 80 families finds 30 using buses and 18 using trains. For 2000 families, estimate how many more use buses than trains.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A box has 3 red and 2 blue balls. Two are drawn uniformly without replacement. Find the probability of both red and the probability of the same colour.