# Mathematics

## Practice Test Paper 7

### (Chapter 14: Probability)

### Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

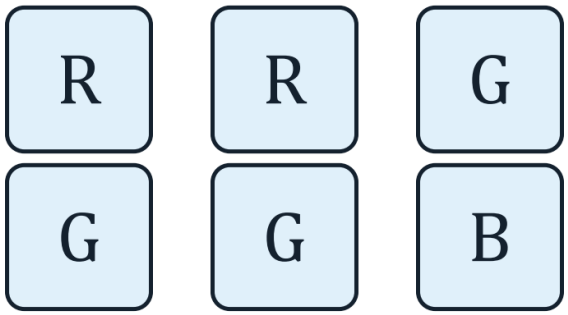
**General Instructions**

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give probabilities in their simplest form. Use of calculators is not allowed.

## SECTION A

(5 questions × 1 mark = 5 marks)

**1.** The six equally likely faces of a fair die are shown. Which label is most likely on one roll?




(A) G
(B) R
(C) B
(D) All are equally likely

**2.** A selected product passes inspection with probability 17/20. What is the probability that it fails?

(A) $\frac{17}{20}$
(B) $\frac{1}{20}$
(C) $\frac{3}{17}$
(D) $\frac{3}{20}$

**3.** A digit is selected at random from 0 to 9. Find the probability of a non-zero even digit.

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

**4.** One card is drawn from a standard well-shuffled deck. Find the probability of the jack of hearts.

(A) $\frac{1}{13}$ (B) $\frac{1}{26}$

(C) $\frac{1}{52}$ (D) $\frac{3}{13}$

**5.** One coupon is selected at random from those in the table. What is the probability of a prize?

| Coupon | Prize | No prize |
|---|---|---|
| Number | 4 | 16 |

(A) $\frac{4}{5}$ (B) $\frac{1}{4}$

(C) $\frac{1}{20}$ (D) $\frac{1}{5}$

## SECTION B

(4 questions × 2 marks = 8 marks)

**6.** A bag contains red and blue balls in the ratio 3 : 2. There are 12 blue balls. Find the total number of balls and the probability of not drawing blue.

**7.** A card is drawn at random from cards numbered 1 to 40. Find the probabilities that its number is (i) a perfect cube and (ii) a perfect square.

**8.** A club has 24 football players, 16 badminton players and 10 chess players. Each member belongs to exactly one group. One member is selected at random. Find P(chess) and P(not football).

**9.** A student answers a true-or-false question by using a fair coin: heads means true and tails means false. Exactly one response is correct. Find the probabilities of a correct and an incorrect answer, and justify using equally likely outcomes.

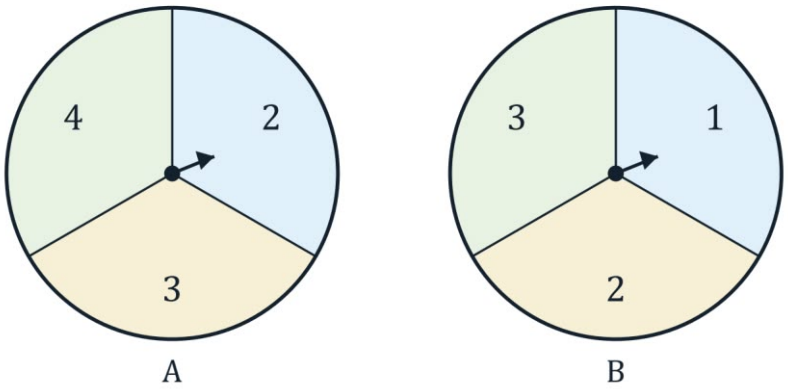
## SECTION C

(3 questions × 3 marks = 9 marks)

**10.** A fair coin is tossed three times independently. Find the probabilities of (i) the first and third results being the same while the middle result differs, and (ii) at least two tails.

**11.** The two black kings and the two red queens are removed from a standard deck. One remaining card is chosen at random. Find the probabilities of (i) black, (ii) a face card and (iii) a red ace.

**12.** The two fair spinners shown are spun independently. Find the probabilities of (i) a sum of 6, (ii) equal numbers and (iii) an even product.




## SECTION D

(Application Based Question - 3 marks)

**13.** A student selects one book at random from the library trolley below. Find the following probabilities.

| Type | Science | History | Fiction | Poetry |
|---|---|---|---|---|
| Books | 12 | 8 | 20 | 10 |

(i) The book is history.

(ii) It is neither fiction nor poetry.

(iii) It is science or poetry.