

**BOARD-PATTERN PRACTICE PAPER · CBSE CLASS 11**

# Probability

Applied Mathematics · Chapter 5 · Matches current CBSE blueprint · Each question PYQ-sourced where indicated

DATE _____	TOTAL MARKS <b>30</b>	DURATION <b>60 min</b>	MARKING <b>As per board</b>	TARGET <b>≥ 24/30</b>
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**GENERAL INSTRUCTIONS**

- All questions are compulsory.
- Section A: 5 MCQs (1 mark each).
- Section B: 3 short-answer questions (2 marks each).
- Section C: 3 long-answer questions (3 marks each).
- Section D: 2 case/long-answer questions (5 marks each).
- Internal choices are not provided. Show all working clearly.
- Use of calculator is NOT permitted.

**Section A — MCQs (1 mark each)**
**5 MARKS · 8 MIN**

- Q1.** If  $P(A) = 0.7$ , then  $P(A')$  equals: (a) 0.3 (b) 0.7 (c) 1 (d) 0 [PYQ 2023 Delhi] **[1 mark]**
- Q2.** Two dice are thrown.  $P(\text{sum} = 7)$  is: (a)  $1/12$  (b)  $1/9$  (c)  $1/6$  (d)  $5/36$  [PYQ 2024 Delhi] **[1 mark]**
- Q3.** A card is drawn from 52.  $P(\text{ace})$  is: (a)  $1/52$  (b)  $1/13$  (c)  $4/13$  (d)  $1/4$  [PYQ 2022 OD] **[1 mark]**
- Q4.** If A, B independent,  $P(A) = 1/3$ ,  $P(B) = 1/4$ , then  $P(A \cap B) =$  (a)  $7/12$  (b)  $1/7$  (c)  $1/12$  (d)  $1/2$  [PYQ 2023 Delhi]
- Q5.**  $P(\text{impossible event}) =$  (a) 1 (b)  $1/2$  (c) 0 (d) undefined [PYQ 2022 Delhi] **[1 mark]**

**Section B — Short Answer (2 marks each)**
**6 MARKS · 12 MIN**

- Q6.** From a well-shuffled pack of 52 cards, one card is drawn. Find the probability that it is a king OR a heart. [PYQ 2024 Delhi] **[2 marks]**
- Q7.** If  $P(A) = 0.4$ ,  $P(B) = 0.5$  and A, B are mutually exclusive, find  $P(A \cup B)$  and  $P(A \cap B)$ . [PYQ 2022 Delhi] **[2 marks]**
- Q8.** Two coins are tossed. Find the probability of getting at least one tail. [PYQ 2023 OD] **[2 marks]**

**Section C — Long Answer (3 marks each)**
**9 MARKS · 18 MIN**

- Q9.** A bag contains 5 red, 4 blue and 3 green balls. Two balls are drawn one after the other without replacement. Find the probability that both balls are red. [PYQ 2024 OD] **[3 marks]**
- Q10.** Given  $P(A) = 1/2$ ,  $P(B) = 1/3$  and  $P(A \cap B) = 1/6$ . Verify whether A and B are independent. Also find  $P(A|B)$  and  $P(B|A)$ . [PYQ 2023 Delhi] **[3 marks]**
- Q11.** In a class of 60 students, 25 like cricket, 20 like football and 10 like both. A student is chosen at random. Find the probability the student likes cricket or football. Also find  $P(\text{likes cricket} | \text{likes football})$ . [PYQ 2024 Delhi] **[3 marks]**

**Section D — Case / Bayes Long Answer (5 marks each)**
**10 MARKS · 22 MIN**

- Q12.** Urn I contains 4 white and 6 black balls. Urn II contains 7 white and 3 black balls. An urn is chosen at random and one ball is drawn from it. The ball is found to be white. Find the probability that it was drawn from Urn II. [PYQ 2024 Delhi] **[5 marks]**
- Q13.** In a factory, machine A produces 60% of items (3% defective) and machine B produces 40% of items (5% defective). An item is picked at random and found defective. Find the probability that it was produced by machine A. Also state which machine is more 'responsible' for the defects. [PYQ 2023 OD] **[5 marks]**

**Marking scheme & model answers** — see companion Answer Key PDF · all PYQs traceable to actual CBSE papers · readyforboards.com · +91 70330 05444