Class 11 Mathematics · Chapter 14: Probability

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

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1. For a sample space S = {ω_1, ω_2, ω_3}, P(ω_1) = 0.3 and P(ω_2) = 0.45. Then P(ω_3) is [1]

(a) 0.75 (b) 0.15
(c) 0.55 (d) 0.25

2. A spinner has eight equal sectors numbered 1 to 8 and is spun once. The number of simple events of its sample space is [1]

(a) 8 (b) 1
(c) 7 (d) 256

3. In a lucky draw at a Diwali mela, the probability that a ticket wins a pressure cooker is 0.05 and that it wins a mixer is 0.12; no ticket wins both. The probability that a ticket wins a cooker or a mixer is [1]

(a) 0.006 (b) 0.17
(c) 0.07 (d) 0.83

4. A bag holds only green and white balls, and one ball is drawn from it. Which of the following is an impossible event? [1]

(a) the ball is green (b) the ball is green or white
(c) the ball is neither green nor white (d) the ball is not white

5. For S = {ω_1, ω_2, ω_3, ω_4}, the assignment P(ω_1) = k, P(ω_2) = 2k, P(ω_3) = 3k, P(ω_4) = 4k is valid. The probability of the event {ω_2, ω_4} is [1]

(a) $\frac{1}{10}$ (b) $\frac{2}{5}$
(c) $\frac{3}{5}$ (d) $\frac{1}{2}$

6. Five friends, among them Ravi and Sana, sit in a row of five chairs at random. Find the probability that Ravi and Sana occupy the two end chairs. [2]

7. A number x is chosen from S = {1, 2, ..., 10}. Let A: 'x is a factor of 12' and B: 'x is odd'. Write the events A ∪ B and A′ ∩ B. [2]

8. A two-digit number is chosen at random. Find the probability that its two digits are equal. [2]

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9. In a school in Jaipur, a student is chosen at random. The probabilities that the student reads a Hindi, an English and a regional-language newspaper are 0.5, 0.4 and 0.2; for Hindi and English 0.15, for English and regional 0.05, for Hindi and regional 0.1, and for all three 0.03. Find the probability that the student reads (i) at least one of the three, (ii) none of them. [3]

10. For events A and B, show that $P(A \cap B') = P(A) - P(A \cap B)$. Hence find the probability that exactly one of A and B occurs when $P(A) = 0.5$, $P(B) = 0.35$ and $P(A \cap B) = 0.1$. [3]

11. Two cards are drawn at random from a well shuffled deck of 52 cards. Find the probability that they are of the same rank (for example, two sevens). [3]