All Branches   Hinglish

Subject: Engineering Mathematics
Chapter: Probability
Topic : Addition theorem, Independent events, Conditional Probability

1. A box contains 5 black balls and 3 red balls. A total of three balls are picked from the box one after another, without replacing them back. The probability of getting two black balls and one red ball is

(a) 3/8   (b) 2/15

(c) 15/28   (d) 1/2

2. Seven car accidents occurred in a week, what is the probability that they all occurred on the same day?

(a) $1/7^7$ (b) $1/7^6$

(c) $1/2^7$ (d) None

3. From a pack of regular playing cards, two cards are drawn at random. What is the probability that both cards will be kings, if first card is NOT replaced?

(a) 1/26   (b) 1/52

(c) 1/169   (d) 1/221

4. A box contains 10 screws, 3 of which are defective. Two screws are drawn at random with replacement. The probability that none of the two screws will be defective

(a) 100%   (b) 50%

(c) 49%   (d) None of these

5. A box contains 5 black and 5 red balls. Two balls are randomly picked one after another from the box, without replacement. The probability for both balls being red is

(a) 1/90   (b) 1/2

(c) 19/90   (d) 2/9

6. A fair unbiased coin was tossed in succession 4 times and resulted in following outcomes
(i) Head
(ii) Head
(iii) Head
(iv) Head.
The probability of obtaining a tail when the coins is tossed again is

(a) 0   (b) 1/2

(c) 4/5   (d) 1/3

7. Consider two events E_1 and E_2 such that $P(E_1) = 1/2$, $P(E_2) = 1/3$ and $P(E_1 \cap E_2) = 1/5$. Which of the following statements is true?

(a) $P(E_1 \cup E_2) = 2/3$

(b) E_1 and E_2 are independent

(c) E_1 and E_2 are not independent

(d) $P(E_1/E_2) = 4/5$

8. E_1 and E_2 are events in a probability space satisfying the following constraints $P(E_1) = P(E_2)$; $P(E_1 \cup E_2) = 1$; E_1 and E_2 are independent then $P(E_1) =$

(a) 0   (b) 1/4

(c) 1/2   (d) 1

9. If P and Q are two random events, then the following is TRUE

(a) Independence of P and Q implies that probability $(P \cap Q) = 0$

(b) Probability $(P \cup Q)$ > Probability (P) + Probability (Q)

(c) If P and Q are mutually exclusive, then they must be independent

(d) Probability $(P \cap Q)$ < Probability (P)

10. A box contains 20 defective items and 80 non-defective items. If two items are selected at random without replacement, what will be the probability that both items are defective?

(a) 1/5   (b) 1/25

(c) 20/99   (d) 19/495

Answer Key

1. (c)
2. (b)
3. (d)
4. (c)
5. (d)

6. (b)
7. (c)
8. (d)
9. (d)
10. (d)