PROBABILITY

INDEPENDENT EVENTS

EXERCISE

Q.1 Events P and Q are independent if $P(A \cap B) = P(A)\ P(B)$. Is it true of false.
(a) False (b) True

Q.2 What characterizes independent events?
(a) If the outcome of one event does not affect the outcome of another
(b) If the outcome of one event affects the outcome of another
(c) Any one of the outcomes of one event does not affect the outcome of another
(d) Any one of the outcomes of one event does affect the outcome of another

Q.3 If a die is rolled twice, what is the probability of obtaining two 3's?
(a) $\frac{1}{66}$ (b) $\frac{1}{16}$ (c) $\frac{1}{63}$ (d) $\frac{1}{36}$

Q.4 What is the formula for events that are independent?
(a) $P(AB) = P(A)\ P(B)$ (b) $P(A \cap B) = P(A)\ P(B)$
(c) $P(A+B) = P(A)\ P(B)$ (d) $P(A-B) = P(A)\ P(B)$

Q.5 What is the probability of getting four heads in a row when flipping a coin?
(a) $\frac{5}{8}$ (b) $\frac{6}{19}$ (c) $\frac{1}{16}$ (d) $\frac{4}{7}$

Q.6 A bag contains gloves in colors blue, red, yellow, and pink. You randomly select a pair of gloves, replace it, and then choose another pair. What is the probability of selecting the pink pair of gloves on both occasions?
(a) $\frac{3}{7}$ (b) $\frac{4}{7}$ (c) $\frac{1}{16}$ (d) $\frac{1}{7}$

Q.7 A box contains socks in colors blue, red, yellow, green, and pink. You randomly select a pair of socks, replace them, and then choose another pair. What is the probability of selecting the yellow pair of socks on both occasions?
(a) $\frac{8}{11}$ (b) $\frac{1}{25}$ (c) $\frac{4}{11}$ (d) $\frac{7}{4}$

Q.8 What is the likelihood of the coin landing on tails and the die showing a 2 when both are tossed?

(a) $\frac{1}{12}$ (b) $\frac{8}{10}$ (c) $\frac{7}{1}$ (d) $\frac{4}{11}$

Q.9 What is the probability of selecting a four and then a queen when a card is randomly chosen from a deck, replaced, and then another card is chosen?

(a) $\frac{7}{11}$ (b) $\frac{7}{100}$ (c) $\frac{1}{169}$ (d) $\frac{9}{11}$

Q.10 What is the probability of drawing a red ball when the first ball drawn is blue, and the balls drawn are replaced in the bag from a collection of 4 red, 2 green, and 7 blue balls?

(a) $\frac{28}{169}$ (b) $\frac{8}{11}$ (c) $\frac{4}{128}$ (d) $\frac{14}{11}$

Q.11 What is the probability of drawing the second ball to be white when the first ball drawn is green, and the balls are replaced in the bag from a collection of 3 red, 2 white, and 4 green balls?

(a) $\frac{1}{9}$ (b) $\frac{2}{9}$ (c) $\frac{8}{81}$ (d) $\frac{2}{81}$

Q.12 What is the probability of drawing a green ball as the second one, given that the first ball drawn is red and the balls are replaced in the bag, from a collection of 3 red, 2 white, and 4 green balls?

(a) $\frac{3}{9}$ (b) $\frac{4}{27}$ (c) $\frac{4}{3}$ (d) $\frac{4}{17}$

ANSWER KEY

1. (b)

2. (a)

3. (d)

4. (b)

5. (c)

6. (c)

7. (b)

8. (a)

9. (c)

10. (a)

11. (c)

12. (b)