

Important Assertion and Reason Questions On Probability

Directions: In the following questions a statement of assertion (A) is followed by a statement of reason(R). Mark the correct choice as:

Choose the correct option for the following questions:

- (A). Both Assertion (A) and Reason (R) are true, and Reason is the correct explanation of Assertion.
- (B). Both Assertion (A) and Reason (R) are true, but Reason is not the correct explanation of Assertion.
- (C). Assertion (A) is true, but Reason (R) is false.
- (D). Assertion (A) is false, but Reason (R) is true.

Question 1:

Assertion (A): The probability of an event is always between 0 and 1.

Reason (R): Probability measures the chance of occurrence of an event.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 2:

Assertion (A): The probability of getting a head when a coin is tossed is: $P(E)=\frac{1}{2}$

Reason (R): A coin has two equally likely outcomes.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 3:

Assertion (A): The sum of probabilities of all possible outcomes of an experiment is 1.

Reason (R): One of the outcomes must occur in a random experiment.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 4:

Assertion (A): The probability of an impossible event is 0.

Reason (R): An impossible event cannot occur.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 5:

Assertion (A): The probability of a sure event is 1.

Reason (R): A sure event always occurs.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 6:

Assertion (A): The probability of getting an even number on a die is: $P(E)=\frac{3}{6}=\frac{1}{2}$

Reason (R): The even numbers on a die are 2, 4, and 6.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 7:

Assertion (A): Experimental probability may differ from theoretical probability.

Reason (R): Experimental probability depends on actual observations.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 8:

Assertion (A): The probability of getting a number greater than 6 on a standard die is 0.

Reason (R): A standard die has outcomes from 1 to 6 only.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 9:

Assertion (A): The probability of selecting a vowel from the word "MATHS" is 0.

Reason (R): The word "MATHS" contains no vowels.

Options:

- A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (D). A is false, but R is true.

“MATHS” contains the vowel A.

Question 10:

Assertion (A): If the probability of an event is 0.7, then the probability of the event not occurring is 0.3.

Reason (R): The sum of probabilities of complementary events is 1.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 11:

Assertion (A): The probability of drawing a red card from a deck of cards is: $P(E) = \frac{26}{52} = \frac{1}{2}$

Reason (R): A deck of cards contains 26 red cards.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 12:

Assertion (A): The probability of getting a prime number on a die is: $P(E) = \frac{3}{6} = \frac{1}{2}$

Reason (R): The prime numbers on a die are 2, 3, and 5.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 13:

Assertion (A): Experimental probability approaches theoretical probability as the number of trials increases.

Reason (R): Larger observations generally produce more reliable results.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 14:

Assertion (A): The probability of getting an odd number on a die is equal to the probability of getting an even number.

Reason (R): A die has three odd and three even numbers.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 15:

Assertion (A): The probability of selecting a consonant from the word "BOOK" is: $P(E) = \frac{2}{4} = \frac{1}{2}$

Reason (R): The consonants in "BOOK" are B and K.

Options:

- (A). Both A and R are true, and R is the correct explanation of A.
- (B). Both A and R are true, but R is not the correct explanation of A.
- (C). A is true, but R is false.
- (D). A is false, but R is true.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

