Probability - Unit No. 13 Test # 1

Time: 30 Minutes Total Marks: 20

Part A – Multiple Choice Questions (1 × 5 = 5 marks)

1. Which of the following is a likely event?

- (a) Getting 7 on a die
- (b) Getting a red card from a deck
- (c) Getting heads and tails simultaneously
- (d) Drawing all jokers from a standard deck

2. Probability of certain event is:

- (a) 1
- (b) 0
- (c) 0.5
- (d) undefined

3. The chance of occurrence of a particular event is called:

- (a) probability
- (b) event
- (c) outcome
- (d) sample

4. In a deck of 52 cards, how many queens are there?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

5. What is the sum of the probabilities of an event and its complement?

- (a) 0
- (b) 1
- (c) 2
- (d) 0.5

Part B – Short Questions (2 × 5 = 10 marks)

1. Define Probability.

2. In a toss of 3 coins, what is the probability of getting exactly two heads?

3. If 8 out of 25 items are defective, find the relative frequency and expected frequency of non-defective items.

4. From a deck of 52 cards, what is the probability of getting a queen or a jack?

5. Find the probability of getting at least 4 as sum of dots on two dice.

Part C – Long Question (5 × 1 = 5 marks)

1. A coin is tossed and a die is rolled simultaneously. Find the probability of getting head and an even number. Also, find the probability of not getting this outcome.

Probability - Unit No. 13 Test # 2

Time: 30 Minutes Total Marks: 20

Part A – Multiple Choice Questions (1 × 5 = 5 marks)

1. Expected frequency is calculated by:

- (a) Relative frequency × sample size
- (b) P(A) × N
- (c) Number of outcomes / total
- (d) N × P(A)

2. In a deck of 52 cards, how many queens are there?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

3. What is the sum of the probabilities of an event and its complement?

- (a) 0
- (b) 1
- (c) 2
- (d) 0.5

4. Which of the following is a likely event?

- (a) Getting 7 on a die
- (b) Getting a red card from a deck
- (c) Getting heads and tails simultaneously
- (d) Drawing all jokers from a standard deck

5. What is the probability of getting a head in one toss of a fair coin?

- (a) 0.25
- (b) 0.5
- (c) 0.75
- (d) 1

Part B – Short Questions (2 × 5 = 10 marks)

1. Define Relative Frequency.

2. What is the expected frequency of sum greater than 8 when 2 dice are rolled 500 times?

3. From a deck of 52 cards, what is the probability of getting a queen or a jack?

4. Find the relative frequency of 2 defective items from a batch of 750 samples where 94 have 2 defects.

5. What is the probability of getting a vowel from the word 'MATHEMATICS'?

Part C – Long Question (5 × 1 = 5 marks)

1. From a survey, students liked Biryani (40), Chicken (21), Sweets (25), Juice (7), BBQ (15). Calculate the percentage of each preference and identify the most and least liked food items.

Probability - Unit No. 13 Test # 3

Time: 30 Minutes Total Marks: 20

Part A – Multiple Choice Questions (1 × 5 = 5 marks)

1. The chance of occurrence of a particular event is called:

- (a) probability
- (b) event
- (c) outcome
- (d) sample

2. What does relative frequency estimate?

- (a) actual outcome
- (b) expected frequency
- (c) probability
- (d) sample

3. What is the probability of an impossible event?

- (a) 1
- (b) 0
- (c) 0.5
- (d) cannot be determined

4. In a deck of 52 cards, how many queens are there?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

5. What is the sum of the probabilities of an event and its complement?

- (a) 0
- (b) 1
- (c) 2
- (d) 0.5

Part B – Short Questions (2 × 5 = 10 marks)

1. Define Expected Frequency.

2. Find the relative frequency of 2 defective items from a batch of 750 samples where 94 have 2 defects.

3. What is the probability of getting a vowel from the word 'MATHEMATICS'?

4. If 8 out of 25 items are defective, find the relative frequency and expected frequency of non-defective items.

5. What is the probability of getting a red ball from an urn containing 10 red, 5 green and 8 blue balls?

Part C – Long Question (5 × 1 = 5 marks)

1. Three coins are tossed. Find the probabilities of getting: (i) exactly 3 heads, (ii) at least 2 tails, (iii) not exactly 2 heads.

Probability - Unit No. 13 Test # 4

Time: 30 Minutes Total Marks: 20

Part A – Multiple Choice Questions (1 × 5 = 5 marks)

1. In a deck of 52 cards, how many queens are there?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

2. What is the sum of the probabilities of an event and its complement?

- (a) 0
- (b) 1
- (c) 2
- (d) 0.5

3. Expected frequency is calculated by:

- (a) Relative frequency × sample size
- (b) P(A) × N
- (c) Number of outcomes / total
- (d) N × P(A)

4. The chance of occurrence of a particular event is called:

- (a) probability
- (b) event
- (c) outcome
- (d) sample

5. What is the probability of an impossible event?

- (a) 1
- (b) 0
- (c) 0.5
- (d) cannot be determined

Part B – Short Questions (2 × 5 = 10 marks)

1. Define Favourable Outcome.

2. What is the expected frequency of sum greater than 8 when 2 dice are rolled 500 times?

3. Find the probability of getting at least 4 as sum of dots on two dice.

4. What is the probability of getting a vowel from the word 'MATHEMATICS'?

5. Find the probability of not getting a 3 or 4 while rolling a fair die.

Part C – Long Question (5 × 1 = 5 marks)

1. Find the expected frequency of x given the probability distribution: P(x) = {0.11, 0.21, 0.17, 0.18, 0.09, 0.17, 0.07} repeated 200 times.

Probability - Unit No. 13 Test # 5

Time: 30 Minutes Total Marks: 20

Part A – Multiple Choice Questions (1 × 5 = 5 marks)

1. What is the sum of the probabilities of an event and its complement?

- (a) 0
- (b) 1
- (c) 2
- (d) 0.5

2. In a deck of 52 cards, how many queens are there?

- (a) 2
- (b) 4
- (c) 6
- (d) 8

3. Probability of certain event is:

- (a) 1
- (b) 0
- (c) 0.5
- (d) undefined

4. Each element of the sample space is called:

- (a) event
- (b) experiment
- (c) sample point
- (d) outcomes

5. What is the probability of an impossible event?

- (a) 1
- (b) 0
- (c) 0.5
- (d) cannot be determined

Part B – Short Questions (2 × 5 = 10 marks)

1. Define Sample Space.

2. In a toss of 3 coins, what is the probability of getting exactly two heads?

3. What is the probability of getting a red ball from an urn containing 10 red, 5 green and 8 blue balls?

4. What is the expected frequency of sum greater than 8 when 2 dice are rolled 500 times?

5. What is the probability of selecting number between 17 to 22 from cards labelled 1 to 30?

Part C – Long Question (5 × 1 = 5 marks)

1. Calculate and compare the relative frequencies of 0, 1, and 2 defects from a sample batch of 750 items: 0 defects = 120, 1 defect = 140, 2 defects = 94.