**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: E-Statistics and Probability**

**Grade: 7**

**Unit: 13. Probability**

**Type of Assessment: Formative**

**SLO: (M-07-E-05)** Explain and compute the probability of certain events, impossible events and complement of an event (including real world word problems).

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** A fair coin is tossed. What is the probability of getting (i) a head (ii) a tail?

**(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| 1. When we toss a coin, there are two possible outcomes: head and tail. Since the coin is fair and only one face (head or tail) can come up, the number of equally likely, mutually exclusive and exhaustive outcomes is 2, i.e. . There is only one outcome favorable to the occurrence of a head, i.e. . Thus the probability of getting a head is   P (head).   1. Since there is one outcome favorable to the occurrence of a tail, the probability of getting a tail is   P (tail). | 1. Application of probability concept in the given scenario. 2. Formula. 3. Answer. | 1. Marks   02 Marks  01 Mark |

**Name and Signature of Developer**

**Zubair Mustafa**

**Reviewer Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Name and Signature of Reviewer**

**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: E-Statistics and Probability**

**Grade: 7**

**Unit: 13. Probability**

**Type of Assessment: Formative**

**SLO: (M-07-E-05)** Explain and compute the probability of certain events, impossible events and complement of an event (including real world word problems).

**Type of Task:** Constructed response

**Level of SLO:** Application

**Task:** If one dice is thrown, what is the probability of getting a number greater than 2?

**(05) Marks**

**Level of Item:** Application

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| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| 1. The sample space S is:   S and  6.   1. Let A be the event that the number thrown is greater than 2.   Then A and  4.   1. P(A) | 1. Sample space. 2. Application of formula in the given scenario. 3. Answer. | 1. Marks 2. Marks 3. Mark |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: E-Statistics and Probability**

**Grade: 7**

**Unit: 13. Probability**

**Type of Assessment: Summative**

**SLO: (M-07-E-05)** Explain and compute the probability of certain events, impossible events and complement of an event (including real world word problems).

**Type of Task:** Constructed response

**Level of SLO:** Application

**Task:** What is the probability of rolling a 3 or a 4 when rolling a dice once?

**(05) Marks**

**Level of Item:** Application

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
|  | 1. Concept of Mutually exclusive events or disjoint if they cannot both occur at the same time. 2. Calculations 3. Answer | 1. Marks     02 Marks    01 Mark |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: E-Statistics and Probability**

**Grade: 7**

**Unit: 13. Probability**

**Type of Assessment: Formative**

**SLO: (M-07-E-05)** Explain and compute the probability of certain events, impossible events and complement of an event (including real world word problems).

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Each of the 10 letters of the word “**STATISTICS**” is written on a card. A card is drawn at random. Find the probability that the card has: **(05) Marks**

1. The written letter ‘S’
2. The written letter ‘T’
3. The written letter ‘I’
4. The written letter ‘A’
5. The written letter ‘C’

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| The word STATISTICS contain 10 letters. Of these, the three S’s are alike, the three T’s are alike, the two I’s are alike. There is one A and one C. Thus the probability are:   1. P(S) 2. P(T) 3. P(I) 4. P(A) 5. P(C) | Total number of elements,  Probability of S  Probability of T  Probability of I  Probability of A  Probability of C | 01 Mark  04 Marks |

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**Grade: 7**

**Unit: 13. Probability**

**Type of Assessment: Formative**

**SLO: (M-07-E-05)** Explain and compute the probability of certain events, impossible events and complement of an event (including real world word problems).

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** A number is chosen at random from a set of whole numbers from 1 to 50. Calculate the probability that the chosen number is not a perfect square.

**(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Let  be the event of choosing a perfect square.  Let  be the event that the number chosen is not a perfect square.  = {1, 4, 9, 16, 25, 36, 49}  Number of elements in ,  Total number of elements,    The probability that the number chosen is not a perfect square is | **Complementary events:**  If  and  are complementary events, then.  Calculations  Answer | 01 Mark  03 Marks  01 Mark |

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**Name and Signature of Reviewer**