**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-16)** Construct linear equations in two variables such as; , where a and b are not zero.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Find two positive integers whose sum is 10. **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Let one number be  and the second number be  then:If Hence is a solution of the equation Similarly, Hence  is another solution of the equation Similarly,are also solutions of the given equation.Note: A linear equation in two variables may have infinite number of solutions. | 1. Equation
2. Calculations/ simplify
3. Answer
 |  02 Marks 02 Marks 01 Mark |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-16)** Construct linear equations in two variables such as; , where a and b are not zero.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Which ordered pair is a solution of? **(05) Marks**

1. (2, 4) (ii) (4, 2)

 **Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| (i) Test (2, 4): , it means the values of  and  given, put these values in given equation we get(ii) Test (4, 2): , it means the values of  and given, put these values in given equation we getSo (2, 4) is a solution of. | 1. Substitute the values
2. Calculations/ simplify
3. Answer
 | 1. Marks

 02 Marks  01 Mark |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-17)** Recall solving linear equations in one variable.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Solve linear equation  **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Given equation is | 1. Calculations/ simplify
2. Answer
 | 04 Marks01 Mark |

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**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-17)** Recall solving linear equations in one variable.

**Type of Task:** Constructed response

**Level of SLO:** Application

**Task:** Find the two consecutive numbers whose sum is 21. **(05) Marks**

**Level of Item:** Application

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Let the two consecutive numbers be  and , then by the given conditionIf , then Thus required numbers are 10 and 11. | 1. Equation
2. Calculations/ simplify
3. Answer
 | 02 Marks02 Marks01 Mark |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-21)** Find values of x and y from the graph and solve simultaneous linear equations using eliminations and substitution methods.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Solve the following system of equations by elimination method. **(05) Marks**



**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Step (A):Step (B):To eliminate  in both equations, coefficients of  should be equal. To make the coefficient of  equal, multiply equation (1) by 5. | 1. Eliminate
2. Calculations/ simplify
3. Answer
 | 02 Marks02 Marks01 Marks |
| Step (C):Subtract equation (2) from equation (3) |  |  |
|   |
| Step (D):Divided both sides by 7Step (E):Put in equation (2)Check: Substituting,  into equation (1) or (2). |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-21)** Find values of x and y from the graph and solve simultaneous linear equations using eliminations and substitution methods.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Solve the following system of equations by substitution method. **(05) Marks**



**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Step (A):Step (B):Select either of the two equations and find the value of one variable say, in terms of the other that is. By (1) | 1. Substitution
2. Calculations/ simplify
3. Answer
 | 02 Marks02 Marks01 Marks |
| Step (C):Substitute equation (3) in equation (2)  |  |  |
| Step (D): Substituting  into equation (3).  |  |  |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-20)** Recognize and state the equation of a horizontal line and a vertical line.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Sketch the graph of the equations. (i)  (Horizontal line) (ii)  (vertical line).

 **(05) Marks**

**Level of Item:** Comprehension



|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| Given line is horizontal i.e. parallel to the x-axis. When, the y-coordinate is. So, the y-coordinate of every point is a constant that indicates how far above or below the x-axis, the line is drawn.An horizontal lines has no x-intercept for Given line is a vertical i.e. parallel to the y-axis. When, the x-coordinate is 6. So, the x-coordinate of every point is a constant that indicates how far towards the right or left of the y-axis, the line is drawn.A vertical line has no y-intercept for. | Knowledge of the horizontal and vertical lines. |  05 Marks |

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**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 8. Linear Equations**

**Type of Assessment: Formative**

**SLO: (M-07-B-19)** Plot the graph of the linear equation  where  and of linear equations in two variables.

**Type of Task:** Constructed response

**Level of SLO:** Comprehension

**Task:** Sketch the graph of the linear equation. **(05) Marks**

**Level of Item:** Comprehension



|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill Observed** | **Score** |
| To draw a line such as , we need to know at least two points on the line. The easiest points to find are those at which the line crosses the x-axis and y-axis. On the x-axis, y=0; On the y-axis, x=0.Take the line When x=0, then  is one point on the line.When y=0, then is a second point on the line. | 1. Calculations/simplify

 1. Graph
 |  03 Marks  02 Marks |

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