**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 01)** Recall recognizing simple patterns from various number sequences.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Identify the following pattern and find next two terms. **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Identify the following patterns 13,18,23 \_\_\_, \_\_\_\_, \_\_\_,  1st Find the pattern find difference of two consecutive terms.  Difference of two consecutive terms is 18-13= 5  23 -18 = 5  Adding 5 to previous term to find the next term. | Find the pattern  Find difference to two terms  Adding 5 to previous term to find the next term. | (02 Marks)  (02 Marks)  (01 Mark) |

**Name and Signature of Developer**

**Asma Riaz**

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 03)** Find term of a sequence when the general term (nth term) is given.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find first three terms of sequence when its general term is an = 2n + 2. **(03) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Find first five term of  an = 2n + 2  1st term put n = 1  a1 = 2 (1) + 2  = 2 + 2  a1= 4  2nd term put n = 2  a2 = 2 (2) + 2  = 4 + 2  a2 = 6  3rd term put n = 3  a3 = 2 (3) + 2  = 6+2  a3=8 | Finding 1st term  2nd Term  3rd Term | (01 Mark)  (01 Mark)  (01 Mark) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 06)** Recall variables as a quantity which can take various numerical values.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** In expression 2x2 + 5x-2+3x+4x2, Find like unlike. **(03) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| In expression,  2x2+5x-2+3x+4x2  Finding like terms  2x2, 4x2  5x,3x  Unlike terms  2x2, 5x,2  Constant term  2 | Like terms  Unlike terms  Constant term | (01 Mark)  (01 Mark)  (01 Mark) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 09)** Identify a monomial, a binomial and a trinomial as a polynomial.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Identify Monomial, binomial, trinomial in the given expression knowledge 3x3-2x2+5x-3, 4x, 6, 7x2+3x+2. **(03) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Identify Monomial, binomial, trinomial in the given expression  3x3-2x2+4x-6  Monomial  4x,6  Bionomical  7x2+3x+2  Trinomial  3x3-2x2+5x-3 | Finding Monomial  Binomial  Trinomial | (01 Mark)  (01 Mark)  (01 Mark) |

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**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 10)** Add and subtract two or more polynomials.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find sum of polynomial 9x2+x-3, 6x2-3x+4 **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Find Sum of Polynomial  9x2+x-3, 6x2-3x+4  By Vertical Method  9x2+x-3  6x2-3x+4  15x2-2x+1 | Manipulation with Coefficients  Answer | (04 Marks)  (01 Mark) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 11)** find the product of: monomial with monomial - monomial with binomial/trinomial - binomials with binomial/trinomial.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find the product of (x-3) (3x+1) **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Find Product of  (x-3) (3x+1)  = x (3x+1) -3 (3x+1)  = 3x2+x-9x-3  = 3x2-8x-3 | Manipulation with Coefficients  Answer | (04 Marks)  (01 Mark) |

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**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 12)** Simplify algebraic expressions (by expanding products of algebraic expressions by a number, a variable or an algebraic expression) involving addition, subtraction, and multiplication division.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find Product appropriate by using formula (x+2) (x+3) **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Find Product of appropriate by using formula  (x+2) (x+3)  = x2+(2+3) x+ (2) (3)  = x2 + 5x+6 | Knowledge  Formula  Calculation | (01 Mark)  (01 Mark)  (03 Marks) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 13)** Explore the following algebraic identities and use them to expand expressions:

(𝑎 + 𝑏) 2 = 𝑎2 + 𝑏2 + 2𝑎𝑏

(𝑎 − 𝑏) 2 = 𝑎2 + 𝑏2 − 2𝑎𝑏

(𝑎 + 𝑏)(𝑎 − 𝑏) = 𝑎2 − 𝑏2.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find the square by using identity (x+3y)2

**(03) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| (a+b)2= a2+2ab+b2  (x+3y)2= x2+2(x) (3y) +(3y)2  =x2+6xy+9y2 | Formula  Application  Calculation | (01 Mark)  (01 Mark)  (01 Mark) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 13)** Explore the following algebraic identities and use them to expand expressions:

(𝑎 + 𝑏) 2 = 𝑎2 + 𝑏2 + 2𝑎𝑏

(𝑎 − 𝑏) 2 = 𝑎2 + 𝑏2 − 2𝑎𝑏

(𝑎 + 𝑏)(𝑎 − 𝑏) = 𝑎2 − 𝑏2.

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Find Square by using identity (x-2)2. **(03) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| (a-b)2= a2-2ab+b2  = (x)2-2(x) (2)+(2)2  = x2-4x+4 | Formula  Application  Calculation | (01 Mark)  (01 Mark)  (01 Mark) |

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**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Formative**

**SLO: (M -07 -B – 14)** Factorize algebraic expressions (by taking out common terms and by regrouping)

**Type of Task:** Constructed Response

**Level of SLO:** Comprehension

**Task:** Factorize 5na-5ny+5y-5a **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Factorize  5na – 5ny + 5y -5a  = 5n (a-y) +5 (y-a)  = 5n (a-y) – 5 (a-y)  = (5n-5) (a-y) | Rearranging the expression  Taking Common  Pairing Factor and Answer | (01 Mark)  (02 Marks)  (02 Marks) |

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**Template for Essay Type Item**

**Subject: Mathematics**

**Domain: B-Algebra**

**Grade: 7**

**Unit: 6. Algebra**

**Type of Assessment: Summative**

**SLO: (M -07 -B – 15)** Factorize quadratic expressions (by middle term breaking method).

**Type of Task: Constructed Response**

**Level of SLO:** Comprehension

**Task:** Factorize t2-12t+35 **(05) Marks**

**Level of Item:** Comprehension

|  |  |  |
| --- | --- | --- |
| **Expected Response** | **Skill observed** | **Score** |
| Factorize  t2-12t+35  = t2 – 5t-7t+35  = t (t-5) – 7 (t-5)  = (t-7) (t-5) | Locate the middle term  Break the middle terms depending upon the product of leading coefficient and last term.  Taking common and find answer. | (01 Mark)  (02 Marks)  (02 Marks) |

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