Math Understood 7
NCP SLO Matching Grid

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Students' Learning Outcomes		
SLOs	Domain A: Numbers and Operations	Covered in Math Understood 7
M-07-A-01	With increasing degree of challenge, use the concept of place value for whole numbers, integers, rational numbers and decimal numbers.	12-14
M-07-A-02	Round off whole numbers, integers, rational numbers, and decimal numbers to a required degree of accuracy, significance or decimal places (up to 3 decimal places).	15-18
M-07-A-03	Use knowledge of rounding off to give an estimate to a calculation; to check the reasonableness of the solution.	
M-07-A-04	Recall H.C.F and L.C.M.	29-30
M-07-A-05	Recall - Recognise, identify and represent integers (positive, negative and neutral integers) and their absolute or numerical value.	14-15
M-07-A-06	Identify and represent (on a number line) rational numbers.	
M-07-A-07	Represent whole numbers, integers, and decimal numbers on a number line.	
M-07-A-08	Identify and convert between various types of fractions.	18-19
M-07-A-09	Compare (using symbols <, >, =, ≤ and ≥) and arrange (in ascending or descending order) whole numbers, integers, rational numbers and decimal numbers.	19-21
M-07-A-10	Verify associative and commutative properties of rational numbers.	25-28
M-07-A-11	Verify associative, commutative, and distributive properties of rational numbers.	
M-07-A-12	Solve real-world word problems involving operations on rational numbers.	22-24
M-07-A-13	Recognise the order of operations and use it to solve mathematical expressions involving whole numbers, decimals, fractions, and integers.	
M-07-A-14	Calculate rate and average rate of quantities.	40

M-07-A-15	Calculate increase and decrease in a ratio based on change in quantities.	39-41
M-07-A-16	Explain and calculate direct and inverse proportion and solve real-world word problems related to direct and inverse proportion.	41-47
M-07-A-17	Identify and differentiate between selling price, cost price, loss, discount, profit percentage, and loss percentage.	48-51
M-07-A-18	Explain income tax, property tax, general sales tax, value-added tax, zakat, and ushr.	51-59
M-07-A-19	Solve real-world word problems involving profit, loss, discount, commission, tax, zakat, and ushr.	48-59
M-07-A-20	Recognise and calculate squares of numbers up to 3-digits.	30-33
M-07-A-21	Find the square roots of perfect squares of (up to 3-digits) natural numbers, fractions, and decimals.	33-38
M-07-A-22	Solve real-world word problems involving squares and square roots.	
M-07-A-23	Use language, notation, and Venn Diagrams to represent different sets and their elements. (natural numbers, whole numbers, integers, even numbers, odd numbers, prime numbers)	2-4
M-07-A-24	Identify and differentiate between: - subset and superset - proper and improper - equal and equivalent - disjoint and overlapping.	4-6
M-07-A-25	Describe and perform operations on sets (union, intersection, difference and complement).	8-10
M-07-A-26	Verify the following: $A \cap B' \emptyset$ $A \cup A' = U$ $(A \cup B)' = A' \cap B'$ $(A \cap B)' = A' \cup B'$	7

SLOs	Domain B: Algebra	
M-07-B-01	Recall recognizing simple patterns from various number sequences.	60-62
M-07-B-02	Recall how to continue a given number sequence and find: - term to term rule - position to term rule	
M-07-B-03	Find terms of a sequence when the general term (nth term) is given.	
M-07-B-04	Solve real-life problems involving number sequences and patterns.	
M-07-B-05	Students will know Muhammad bin Musa Al- Khwarizmi as the founding father of Algebra.	62
M-07-B-06	Recall variables as a quantity which can take various numerical values.	62
M-07-B-07	Recognise open and close sentences, like and unlike terms, variable, constant, expression, equation, and inequality.	62-64
M-07-B-08	Recognise polynomials as algebraic expressions in which the powers of variables are whole numbers.	
M-07-B-09	Identify a monomial, a binomial, and a trinomial as a polynomial.	
M-07-B-10	Add and subtract two or more polynomials.	64-66
M-07-B-11	Find the product of: - monomial with monomial - monomial with binomial/trinomial - binomials with binomial/trinomial	66-68
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.	
M-07-B-13	Explore the following algebraic identities and use them to expand expressions: $(a + b)^2 = a^2 + b^2 + 2ab$ $(a - b)^2 = a^2 + b^2 - 2ab$ $a^2 - b^2 = (a + b)(a - b)$	69

M-07-B-14	Factorise algebraic expressions (by taking out common terms and by regrouping).	69-72
M-07-B-15	Factorise quadratic expressions (by middle term breaking method).	
M-07-B-16	Construct linear equations in two variables such as; $ax + by = c$, where a and b are not zero.	78-79
M-07-B-17	Recall solving linear equations in one variable.	73-77
M-07-B-18	Introduction to Cartesian coordinate system.	79-80
M-07-B-19	Plot the graph of the linear equation $ax + b = 0$ where a $\neq 0$ and of linear equations in two variables.	80-82
M-07-B-20	Recognise and state the equation of a horizontal line and a vertical line.	80-81
M-07-B-21	Find values of 'x' and 'y' from the graph.	82
SLOs	Domain C: Measurement	
M-07-C-01	Convert different units of distance.	86-87
M-07-C-02	Convert 12-hour clock to 24-hour clock and vice versa.	87-89
M-07-C-03	Convert between different units of time and speed.	
M-07-C-04	Calculate arrival time, departure time, and journey time in a given situation (on the previous day and the next day).	
M-07-C-05	Solve real-world word problems involving distance, time, and average speed.	89-91
M-07-C-06	Differentiate between uniform and average speeds.	
M-07-C-07	Calculate the area and perimeter of the shaded/unshaded region in composite shapes.	94-97
M-07-C-08	Calculate the circumference and area of a circle.	91-94
M-07-C-09	Calculate the surface area and volume of any simple 3-D shape including right prisms and cylinders.	97-102
M-07-C-10	Convert between standard units of area (m^2, cm^2, mm^2 and vice versa) and volume (m^3, cm^3 and mm^3 and vice versa).	86-87
M-07-C-11	Solve real-life word problems involving the surface area and volume of right prisms and cylinders.	97-102

SLOs	Domain D: Geometry	
M-07-D-01	Recognise quadrilaterals and their characteristics (parallel sides, equal sides, equal angles, right angles, lines of symmetry etc) Square, rectangle, parallelogram, rhombus trapezium, and kite.	106-107
M-07-D-02	Differentiate between convex and concave polygons.	104
M-07-D-03	Translate an object and give precise description of transformation.	118-120
M-07-D-04	Know that the perpendicular distance from a point to a line is the shortest distance to the line.	115
M-07-D-05	Describe the properties of a circle; centre, radius, diameter, chord, arcs, major and minor arc, semi-circle, and segment of a circle.	110-111
M-07-D-06	Calculate unknown angles in quadrilaterals using the properties of quadrilaterals (square, rectangle, parallelogram, rhombus, trapezium, and kite).	108-109
M-07-D-07	Understand the relationship between interior and exterior angles of polygons and between opposite interior and exterior angles in a triangle.	103-106
M-07-D-08	Calculate the interior and exterior angles of a polygon and the sum of interior angles of a polygon.	104-105
M-07-D-09	Recognise identity and draw lines of symmetry in 2-D shapes and rotate objects using rotational symmetry; and find the order of rotational symmetry.	115-118
M-07-D-10	Calculate unknown angles in a triangle.	108-109
M-07- D-11	Construct different types of triangles (equilateral, isosceles, scalene, acute-angled, right-angled, and obtuse-angled).	112-115

SLOs	Domain E: Statistics and Probability	
M-07-E-01	- Recognise drawing and interpreting of bar graphs, line graphs, and pie charts. - Differentiate between a histogram and a bar graph. - Construct and compare histograms for both discrete and continuous data with equal interval range. - Select and justify the most appropriate graph(s) for a given data set and draw simple conclusions based on the shape of the graph.	123-131
M-07-E-02	Recognise the difference between discrete, continuous, grouped and ungrouped data.	121-122
M-07-E-03	Calculate the mean, median, and mode for ungrouped data and the mean for grouped data and solve related real-world problems; Compare, choose, and justify the appropriate measures of central tendency for a given set of data.	131-134
M-07-E-04	Construct frequency distribution tables for given data (i.e., frequency, lower class limit, upper class limit, class interval and mid-point) and solve related real-world problems.	122-123
M-07-E-05	Explain and compute the probability of: certain events, impossible events, and complement of an event (including real-world word problems).	134-136