Unit Code: J560/05
Qual Name: GCSE Mathematics - Paper 5 (Higher tier)
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Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Additional Notes/Comments
1	1	6	1	6.01 Algebraic expressions	Simplify algebraic products and quotients using the law of indices, 3.01 also tested. Solve a linear equation in one unknown (6.03 also tested)	
1	2	4	3	10.01 Units and measure	Use and convert simple units in context - rate of growth	Common question
1	3	4	2	11.02 Combined events and probability diagrams	Complete a tree diagram and use to calculate the probability of a combined event	Common question
1	4	5	3	2.01 Fractions	Calculations with fractions in context	
1	5	6	3	5.01 Calculations with ratio	Division in a given ratio in the context of interior and exterior angle of a triangle, 8.03 and 8.04 also tested	
1	6	6	3	2.02 Decimal fractions	Convert a recurring decimal to an exact fraction and vice versa	
1	7	7	2, 3	8.05 Circles	Apply rules for cyclic quadrilaterals and angle subtended at centre and circumference	
1	8	7	2, 3	7.01 Graphs of equations and functions	Sketch the graph of a quadratic function, identifying the turning point and value of the y-intercept , by completing the square on a quadratic expression. 6.01 and 7.03 also tested	

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1	9	6	3	11.02 Combined events and probability diagrams	Multiplication law of probability and conditional probability in context	
2	1	2	1	3.02 Standard form	Multiply numbers in standard form without a calculator	
2	2	6	1	2.03 Percentages	Calculate a percentage profit and express a percentage change as a decimal to find an original value	Common question
2	3	8	2	12.03 Analysing data	Plot and interpret scatter diagrams for bivariate data and recognise correlation	
2	4	6	3	2.03 Percentages	Increase and decrease a quantity by a simple percentage in context	Common question
2	5	3	1	3.03 Exact calculations	Simplify a surd and evaluate a fractional power, 3.01 also tested	
2	6	7	3	6.05 Language of functions	Find an algebraic expression for an inverse function and use a composite function to solve an equation	
2	7	2	2, 3	7.01 Graphs of equations and functions	Correct errors in the sketch of a graph of an exponential function	
2	8	3	2	9.04 Similarity	Prove that two triangles are similar	
2	9	6	3	10.03 Area calculations	Use area of a sector of a circle, exact calculations (3.03 also tested) and exact trigonometric ratios (10.05 also tested) to find a length perpendicular to the radius	

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2	10	6	2	6.03 Algebraic equations	Use a graph to find approximate roots and know that the coordinates of the points of intersection of a curve and a straight line are the solutions to the simultaneous equations for the line and curve	
3	1	5	1	4.01 Approximation and estimation	Round values to one significant figure to estimate the answer to a calculation including a root. 2.01 Adding fractions is tested in part (a)	
3	2	3	1	1.02 Whole number theory	Find the LCM of two whole numbers from their prime factorisations	
3	3	6	3	6.01 Algebraic expressions	Describe errors in questions on simplifying algebra and substitution. 3.01 Powers and 6.02 kinematic formulae also tested	Common question
3	4	4	3	5.01 Calculations with ratio	Solve a ratio problem in context	
3	5	6	3	8.02 Ruler and compass constructions	Construct an angle bisector and identify the loci of points in a real-world problem. 10.01 Writing a scale in the form 1 : k and using a scale also tested	Common question
3	6	7	2, 3	12.03 Analysing data	Calculate interquartile range from a box plot, draw and interpret a box plot	
3	7	3	1	5.02 Direct and inverse proportion	Formulate an equation and solve a problem involving a quantity in inverse proportion to a root of another quantity	
3	8	6	3	7.01 Graphs of equations and functions	Sketch the graph of a quadratic function, identifying the turning point, by completing the square on a quadratic expression. 6.01 also tested	
3	9	5	2, 3	9.01 Plane isometric transformations	Describe fully a single transformation equivalent to performing a sequence of transformations on a simple shape	

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3	10	6	2	7.01 Graphs of equations and functions	Use the equation of a circle, find the radius and centre and the distance between 2 points on the circumference. 3.03b also tested	
4	1	3	1	2.03 Percentages	Percentage change in context	Common question
4	2	3	1	6.03 Algebraic Equations	Solve a linear equation with the unknown on both sides of the equation	
4	3	3	1	6.03 Algebraic Equations	Solve a quadratic equation by factorising	Common question
4	4	5	2, 3	8.04 Properties of polygons	Also tested - 8.03 Angles and 5.01 Calculations with ratio. Identify a quadrilateral and use angle properties and properties of triangles within a ratio problem	
4	5	5	3	2.03 Percentages	Also tested - 2.01 Fractions. Express percentage change as a decimal or fractional multiplier and apply in context.	Common question
4	6	4	3	11.01 Basic probability and experiments	Relative frequency in the context of describing a method to estimate an outcome	
4	7	5	1	3.03 Exact calculations	In part (a) 2.02 is tested - convert exact fractions to recurring decimals. In part (b) simplify an expression with surds by rationalising the denominator	
4	8	5	3	11.02 Combined events and probability diagrams	Constuct a Venn diagram to solve a conditional probability problem in context	
4	9	3	2	3.01 Powers and roots	6.01 also tested. Simplify an algebraic product by using negative integer indices to represent reciprocals and fractional indices to represent roots	

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4	10	6	2	6.04b Algebraic inequalities	Solve linear inequalities in two variables by drawing straight lines and representing the solution set on a graph	
4	11	7	3	10.05 Triangle mensuration	Apply exact trigonometric ratios to right angled triangles to find a length. 3.03 is also tested	
5	1	5	1	6.03 Algebraic equations	Solve a linear equation in one unknown. 6.01 also tested - simplify an algebraic expression by multiplying out single terms over brackets	
5	2	5	2	11.02 Combined events and probability diagrams	Complete a sample space diagram. Use the addition law for mutually exclusive events and informally understand and apply the formula p(A or B) = p(A) + p(B) - p(A and B)	Common question
5	3	5	3	1.02 Whole number theory	LCM in the context of time	Common question
5	4	3	3	11.02 Combined events and probability diagrams	Identify errors made in a given tree diagram	Common question
5	5	4	2, 3	9.02 Congruence	Prove that two triangles within parallel lines are congruent	
5	6	4	1	3.01 Powers and roots	Calculate fractional powers and simplify an expression with surds (3.03 also tested)	
5	7	7	2	2.03 Percentages	Express percentage change as a decimal or fractional multiplier and apply to a percentage change problem. Express exponential decay as a formula (5.03 also tested) and recognise graphs of exponential functions (7.01d also tested)	
5	8	5	1	6.01 Algebraic expressions	Simplify algebraic products and quotients using the law of indices	

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5	9	5	2	6.04 Algebraic inequalities	Solve linear inequalities in two variables by drawing straight lines (7.01c also tested) and representing the solution set on a graph	
5	10	7	3	10.03 Area of a trapezium	By using division in a given ratio (5.01 tested) and Pythagoras' theorem (10.05 tested) calculate the area of a trapezium	
6	1	2	1	1.02 Whole number theory	Express a whole number as a product of its prime factors	
6	2	5	1	5.01 Calculations with ratio	Find the ratio of times in the form 1 : n. Interpret a ratio of two parts as a fraction of a whole and convert between fractions and percentages - 2.03 also tested	
6	3	6	3	2.01 Fractions	Add and multiply fractions in context. 4.01 Rounding also tested	Common question
6	4	5	2, 3	8.01 Conventions, notations and terms	Through the context of working out x- and y- coordinates 9.02 Congruence is also tested	Common question
6	5	5	2, 3	2.03 Percentages	Express percentage change as a decimal or fractional multiplier and apply to an original value problem in context	
6	6	4	2	7.01 Graphs of equations and functions	Sketch the graph of y = sin x and identify where a translation of y = cosx crosses the x-axis (7.03 also tested)	
6	7	3	1	6.03 Algebraic equations	Solve a linear equation in one unknown requiring manipulation of an algebraic fraction (6.01 also tested)	
6	8	8	2, 3	12.03 Analysing data	Explain the unsuitability of a given grouped frequency table. Interpret a histogram and use it to calculate an estimate of the mean in context (12.02 also tested)	

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6	9	5	3	10.03 Area calculations	Know and apply area of a triangle = ½absinC, using the exact value of sin30 (10.05 also tested), in the context of calculating a weight of carrots harvested (12.01 also tested)	
6	10	7	2	7.01 Graphs of equations and functions	Sketch the graph of a quadratic function, identifying the turning point and value of the y-intercept , by completing the square on a quadratic expression. 6.01 also tested	