Unit Code: H230/01
Qual Name: AS Level Mathematics A
Qual Title: Paper 1: Pure Mathematics and Statistics

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required
1	1	5	1	1.02	Algebra & Functions	Indices and surds. Manipulation of surds - rationalising.
1	2	4	1	1.02	Algebra & Functions	Use condition for repeated roots of a quadratic. Solving a quadratic inequality.
1	3	6	1	1.05	Trigonometry	Trigonometric equation. Multiple angle.
1	4	9	2	1.07, 1.08	Differentiation. Integration.	Differentiation of simple powers. Indefinite integration of simple powers. Identifying where a function is increasing.
1	5	5	2	1.01	Proof	Proof about integers not divisible by 3.
1	6	7	2	1.02	Algebra & Functions	Sketching a cubic which factorises simply.
1	7	7	2, 3(PS)	1.10	Vectors	Basic operations on vectors. Mid-point. Using vectors to prove a geometrical result.
1	8	6	3(PS)	1.03	Coordinate Geometry in the x-y Plane	Gradient, straight line and circle work.
2	1	2	2	2.01	Statistical Sampling	Types of sampling. Stratified v random sampling. Sampling limitations.
2	2	5	1	2.03, 2.04	Probability. Statistical Distributions	Using the sum of all probabilities = 1. Multiplication and addition of probabilities.
2	3	5	3(M)	2.04	Statistical Distributions	Understand when a binomial distribution applies. Calculation of a simple binomial probability. Setting up the binomial distribution to be used.
2	4	7	2, 3(M)	2.05	Statistical Hypothesis Testing	Hypothesis test using the binomial distribution.
2	5	7	2	2.02	Data Presentation and Interpretation.	Interpreting diagrams. Selecting information from a diagram.
3	1	8	1	1.07	Differentiation	Differentiation of simple powers. Integration of simple powers.
3	2	4	2, 3(PS)	1.03	Coordinate Geometry in the x-y Plane	Understanding of the circle equation.
3	3	10	2, 3(PS)	1.02	Algebra & Functions	Solving a cubic by factorising.Solving a trigonometric equation.
3	4	6	2, 3(PS)	1.07	Differentiation	Finding the coordinates of stationary points. Interpret the solution of an equation graphically.

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3	5	5	2	1.01	Proof	Disproof by counterexample. Proof about integers.
3	6	6	2, 3(PS)	1.05	Trigonometry	Use of ½absinC. Simultaneous equations.
3	7	11	2, 3(PS)	1.06	Exponentials & Logarithms	Derivative of exp(kx). Work with a tangent. Solving an equation involving exponentials.
4	1	3	1	2.02	Data Presentation & Interpretation	The area in a histogram represents frequency. Understanding statistical tables and diagrams.
4	2	4	3(M)	2.02	Data Presentation & Interpretation	Calculation of a mean for data. Understanding an outlier's effect on the mean. Obtaining a median for data.
4	3	6	2	2.02	Data Presentation & Interpretation	Interpreting a table.
4	4	8	2, 3(M)	2.04	Statistical Distributions	Conditions needed for a binomial distribution. Hypothesis test using the binomial distribution.
4	5	4	2, 3(PS)	2.03	Probability	Using a Venn diagram with probabilities.
5	1	6	6	1.07	Differentiation	Differentiation of simple powers. Integration of simple powers.
5	2	5	2	1.10	Vectors	Position vectors of 3 points in a line. Perpendicular vectors.
5	3	8	1	1.05	Trigonometry	Solving a trigonometric equation. Proving a trigonometric identity.
5	4	5	3(PS)	1.04	Sequences & Series	Obtaining a binomial expansion. Evaluating a power from a binomial expansion.
5	5	8	2	1.02	Algebra & Functions	Sketching a cubic curve. Definite integration to find an area. Finding the coordinates of the intercepts.
5	6	13	2, 3(PS)	1.02	Algebra & Functions	Solving a quadratic inequality. Solving a quadratic equation. Using logarithms to solve an equation.
5	7	5	2, 3(PS)	1.02	Algebra & Functions	Simultaneous equations leading to a quadratic.
6	1	5	1	2.02	Data Presentation & Interpretation	The area in a histogram represents frequency
6	2	8	2	2.02	Data Presentation & Interpretation	Understanding a statistical table.
6	3	8	2, 3(M)	2.04, 2.05	Statistical Distributions, Statistical Hypothesis Testing	Hypothesis test using the binomial distribution
6	4	4	2, 3(PS)	2.04	Statistical Distributions	Understand a discrete probability distribution.