Unit Code: H240/01

Qual Name: A level Mathematics A

Qual Title: Pure Mathematics

Question Set	Q. No	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required
1	1	4	1	1.03	Coordinate Geometry in the x-y Plane	Perpendicular gradients. The straight line.
1	2	4	1	1.09	Numerical Methods	Use of the trapezium rule.
1	3	9	2	1.02	Algebra & Functions	Cubic graphs, inequalities
1	4	9	3(M)	1.04	Sequences & Series	Modelling with GP
1	5	11	3(PS)	1.06	Exponentials & Logarithms	Growth and Decay
1	6	13	3(M)	1.07, 1.08	Differentiation and Integration	Differential Equations
2	1	4	3(PS)	1.02	Algebra & Functions	Solve a quadratic in a function of the unknown.
2	2	4	2	1.01	Proof	Proof involving positive integers.
2	3	8	2	1.03	Coordinate Geometry in the x-y Plane	Find the centre and radius of a circle.
2	4	7	1	1.04	Sequences & Series	Binomial expansion with a rational power.
2	5	7	1	1.02	Algebra & Functions	
2	6	6	1	1.07	Differentiation	Parametric equations.
2	7	10	2	1.08	Integration	Definite integration and area. Normal to a curve.
3	1	4	2	1.02	Algebra & Functions	Solve a quadratic inequality.
3	2	8	1	1.1	Vectors	
3	3	8	2	1.07	Differentiation	Implicit differentiation. Product rule.
3	4	8	3(PS)	1.04	Sequences & Series	G.P. Sum to n terms and sum to infinity.
3	5	11	3(PS)	1.05	Trigonometry	acosθ + bsinθ in the form Rcos(θ + α).
3	6	12	2	1.07	Differentiation	Chain rule.
4	1	7	2	1.02	Algebra & Functions	Inverse and Composite
4	2	7	3(M)	1.04	Sequences & Series	Modelling with AP
4	3	6	2	1.07	Differentiation	Differentiation from first principles.
4	4	8	3(M)	1.07	Differentiation	Differential equation.
4	5	11	2	1.09	Numerical Methods	Iteration
4	6	10	3(PS)	1.08	Integration	Integration by parts.
5	1	5	2	1.05	Trigonometry	Small angle approximations.
5	2	10	3(PS)	1.02, 1.07	Algebra & Functions, Differentiation	Optimisation

Question Set	Q.	Total Marks	AO	Spec Ref.	Topic	Question Subject, If required
5	3	3	2	1.01	Proof	Proof by contradiction.
5	4	11	3(M)	1.04, 1.09	Sequences & Series and Numerical Methods	Modelling with A.P. and G.P.
5	5	11	2	1.08, 1.09	Integration and Numerical Methods	Substitution
5	6	10	3(PS)	1.02	Algebra & Functions	Circle geometry
6	1	8	1	1.02	Algebra & Functions	Simplifying with surds and indices
6	2	8	2	1.1	Vectors	Basic operations on vectors.
6	3	9	2, 3(PS)	1.06	Exponentials & Logarithms	Reduction to linear form. Modelling.
6	4	7	2	1.07	Differentiation	Product rule with quadratic and exponential.
6	5	9	3(PS)	1.02	Algebra & Functions	The modulus function.
6	6	9	3(PS)	1.08	Integration	Differential equation with variables separable. Partial fractions.