**THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ACCOUNTING SYLLABUS**

Ⅰ Syllabus Description

The UEC Senior Accounting examination aims to enable students to acquire and develop (after one year of accounting course in senior middle three) the knowledge and ability in the subject. The results of the UEC Senior Accounting examination may serve as a yardstick for students to decide on going for higher studies or looking for a working career.

Ⅱ Exam Objectives

1. Fundamental Knowledge in Accounting or Management Profession
    1.1 Understanding accounting concepts and principles
    1.2 Understanding financial statements

2. Basic Skills and Methods in Accounting or Management Profession
    2.1 Doing accounting calculations
    2.2 Making accounting entries

3. Integrated Applied Ability in Accounting or Management Profession
    3.1 Evaluating financial statements
    3.2 Preparing financial statements for both internal and external use
    3.3 Preparing financial statements after business combination

Ⅲ Structure of Exam Paper

This exam is made up of 2 papers:
Paper 1: Multiple-choice Questions (20%) …………………………………….……….……….…… Duration: 30 minutes
      Answer all 20 questions.

Paper 2: Subjective Questions (80%) …………………………………………….……….………… Duration: 3 hours
      Section A: Compulsory Questions (60%)
            Answer all 3 questions.
            (Covering alteration of share capital, published accounts and business combinations)
      Section B: Elective Questions (20%)
            Answer 1 question out of 2.
            (Covering financial analysis & budgeting and inventory valuation)

Ⅳ Exam Content

1. Alteration of Share Capital

Subject Matter	Knowledge Content and Cognitive Demand
1.1 Issue of Shares	1.1.1 Making entries for calls in arrears 1.1.2 Making entries for forfeiture and reissue of shares 1.1.3 Presenting related items of shares in Statement Of Financial Position

1.2 Increase and Reduction of Share Capital	1.2.1 Understanding different ways of altering share capital
	1.2.2 Understanding reasons for bonus and rights issues
	1.2.3 Understanding bonus and rights issues
	1.2.4 Making entries for increase of share capital:
	  ① Bonus issue/Script issue
	  ② Rights issue
	1.2.5 Understanding reasons, legal procedures and advantages of capital reduction
	1.2.6 Making entries for capital reduction:
	  ① Preparing Capital Reduction account
	  ② Preparing Statement Of Financial Position after capital reduction

1.3 Redemption/ Purchase of Shares and Redemption of Loan Notes	1.3.1 Understanding reasons and conditions for redemption/purchase of shares
	1.3.2 Making the following entries:
	  ① Redemption/Purchase of shares at par/premium, out of:
	    － Proceeds from new issue of shares
	    － Distributable profits
	  ② Redemption of loan notes at par/premium/discount
	1.3.3 Presenting related items in Statement Of Financial Position before and after redemption/purchase of shares

2. Published Accounts

Subject Matter	Knowledge Content and Cognitive Demand

2.1 Published Financial Statements	2.1.1 Understanding purpose of preparing published financial statements
	2.1.2 Understanding internal use and published financial statements
	2.1.3 Preparing published financial statements (IAS 1), including notes, taking preferred share capital as irredeemable and non-cumulative share capital, and taking its dividends as paid in full:
	  ① Statement Of Financial Position
	  ② Statement Of Comprehensive Income:
	    － One-statement approach/Two-statement approach
	    － Expenses classified by function
	    － Other comprehensive income:
	      ➤ Revaluation surplus
	  ③ Statement Of Changes In Equity

Subject Matter	Knowledge Content and Cognitive Demand

2.2 Statement of Cash Flows	2.2.1 Understanding purpose of preparing Statement Of Cash Flow
	2.2.2 Understanding types of cash flow activities:
	  ① Operating activities
	  ② Investing activities
	  ③ Financing activities
	2.2.3 Understanding profit for the year and net cash from operating activities
	2.2.4 Preparing Statement Of Cash Flows (IAS 7), including note:
	  ① Indirect method
	  ② Direct method

3. Business Combinations

Subject Matter	Knowledge Content and Cognitive Demand

3.1 Amalgamation and Absorption of Limited Company	3.1.1 Understanding types of combinations:
	  ① Amalgamation
	  ② Absorption
	  ③ Takeover
	3.1.2 Amalgamation and absorption:
	  ① Buyer's books:
	    － Calculating goodwill/gain on bargain purchase
	    － Making entries
	    － Preparing Statement Of Financial Position after combination
	  ② Seller's books:
	    － Calculating gain/loss on liquidation
	    － Making entries

3.2 Consolidated Accounts/ Group Accounts	3.2.1 Understanding nature of a group
	3.2.2 Understanding purpose of preparing consolidated financial statements
	3.2.3 Understanding elimination of intra-group transactions
	3.2.4 Calculating pre- and post-acquisition profits/losses
	3.2.5 Calculating goodwill/gain on bargain purchase, excluding goodwill impairment
	3.2.6 Making entries for the following items (using acquisition method and partial goodwill method)：
	  ① Acquisition of preferred shares and loan notes of subsidiary
	  ② Intra-group transactions and balances:
	    － Loans
	    － Sales and purchases, including cash and goods in transit
	    － Unrealised profit on closing inventory
	    － Unrealised profit on non-current asset
	    － Dividends:
	      ➤ Dividends paid from pre-acquisition profits
	      ➤ Dividends paid from post-acquisition profits:
	        • Ordinary shares
	        • Preferred shares (irredeemable and non-cumulative)
	  ③ Revaluation of non-current assets of subsidiary
	  ④ Acquisition of subsidiary during an accounting period)

Subject Matter	Knowledge Content and Cognitive Demand
3.2 Consolidated Accounts/ Group Accounts	3.2.7 Preparing Consolidated Statement Of Financial Position of a simple group, wholly/partially owned subsidiary： ① Drawn immediately at the date of acquisition ② Drawn after the date of acquisition 3.2.8 Preparing Consolidated Statement Of Comprehensive Income of a simple group, wholly/partially owned subsidiary, excluding Consolidated Statement Of Changes In Equity： ① When subsidiary has been acquired for more than 1 year ② When subsidiary has been acquired for less than 1 year: 　－ Whole-year method/Part-year method Including only the following intra-group transactions after acquisition: － Sales and purchases － Unrealised profit on closing inventory － Dividends： 　➢ Ordinary shares 　➢ Preferred shares (irredeemable and non-cumulative)

4. Financial Analysis &Budgeting

Subject Matter	Knowledge Content and Cognitive Demand
4.1 Calculation and Interpretation of Accounting Ratios	4.1.1 Understanding general functions of accounting ratios in financial analysis 4.1.2 Calculating of accounting ratios： ① Profitability ratios: 　－ Gross profit margin 　－ Net profit margin 　－ Return on capital employed ratio ② Liquidity ratios: 　－ Current ratio 　－ Quick ratio ③ Efficiency ratios: 　－ Inventory turnover ratio and holding period 　－ Trade receivables turnover ratio and collection period 　－ Trade payables turnover ratio and settlement period ④ Capital structure ratios: 　－ Gearing ratio, taking preferred share capital as fixed charge bearing fund/ prior charge capital 　－ Interest cover ⑤ Investment ratios: 　－ Earnings per share 　－ Price/earnings ratio 　－ Dividend yield 　－ Dividend cover 4.1.3 Evaluating business performance in profitability, liquidity, management efficiency, capital structure and return on investment

Subject Matter	Knowledge Content and Cognitive Demand
4.2 Budgeting	4.2.1 Understanding purpose of preparing budgets
	4.2.2 Preparing the following statements:
	① Cash Budget
	② Budgeted financial statements, applying accounting ratios:
	－ Budgeted Income Statement
	－ Budgeted Statement Of Financial Position
	4.2.3 Evaluating Cash Budget and budgeted financial statements

5. Inventory Valuation

Subject Matter	Knowledge Content and Cognitive Demand
5.1 Inventory Valuation	5.1.1 Understanding purpose of inventory valuation
	5.1.2 Understanding components of cost of inventories
	5.1.3 Understanding periodic and perpetual inventory systems
	5.1.4 Calculating cost of inventories and cost of sales under periodic and perpetual inventory systems：
	① FIFO method
	② LIFO method
	③ Weighted average cost method
	5.1.5 Calculating gross profit in different cost valuation methods of inventories
	5.1.6 Calculating value of inventories of lower of cost and net realisable value:
	① Item method
	② Category method
	5.1.7 Adjusting value of inventories when stocktaking occurs before and after the end of reporting period

6. Fundamental Accounting Concepts and Principles

Subject Matter	Knowledge Content and Cognitive Demand
6.1 Fundamental Accounting Concepts and Principles	6.1.1 Understanding meaning, significance and limitation of fundamental accounting concepts and principles:
	① Business entity/Entity
	② Money measurement
	③ Objectivity
	④ Historical cost/Cost
	⑤ Going concern/Continuity of activity
	⑥ Accounting period/Time interval/Periodic
	⑦ Accrual
	⑧ Prudence/Conservatism
	⑨ Consistency
	⑩ Materiality
	⑪ Substance over form
	6.1.2 Applying of accounting concepts and principles to different accounting situations

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ADVANCED MATHEMATICS (I) SYLLABUS

Ⅰ Syllabus Description

The Senior Middle Level Advanced Mathematics (I) syllabus is intended to assess the level of Independent Chinese Secondary School students' knowledge and ability throughout three years of following the high school Advanced Mathematics (I) curriculum. The results can be used as a reference for candidates to further their studies or to apply for jobs.

Ⅱ Exam Objectives

1. Basic Knowledge and Skills
    1.1 Demonstrating understanding of the basic knowledge of algebra, trigonometry, analytic geometry, probability and statistics, and calculus
    1.2 Demonstrating the ability to perform basic computing, data processing, interpretation or draw diagrams, etc. according to certain rules and procedures
    1.3 Demonstrating understanding of the basic mathematical thinking and mathematical methods
    1.4 Demonstrating the ability to solve simple applications

2. Mathematical Thinking Ability
    2.1 Demonstrating proper use of appropriate mathematical thinking, mathematical methods and data to solve problems based on conditions
    2.2 Demonstrating the ability to distinguish basic figures from complex figures and analyse the relationships between their basic elements
    2.3 Demonstrating the ability to apply logical thinking to perform correct inference or proof
    2.4 Demonstrating the ability to apply mathematical knowledge, select effective strategies and use reasoning skills to solve problems, evaluate the problem-solving process and rationality
    2.5 Demonstrating the ability to build mathematical models to solve practical problems

3. Comprehensive Ability of Problem Solving
    3.1 Demonstrating the utilisation of mathematical knowledge and methods in different fields to solve problems

Ⅲ Structure of Exam Paper

This subject comprises of two papers:

Paper 1: Multiple-choice Questions（40%）**...** Duration: 1 hr
    Answer all 20 questions.

Paper 2: Subjective Questions（60%）**...** Duration: 2 hrs
    This paper consists of two sections：
    Section A Compulsory （20%）
            Answer all five questions.
    Section B Elective （40%）
            Answer any four, but not more than four out of seven questions.

Ⅳ Exam Content

1. Algebra

Subject Matter	Knowledge Content
1.1 Functions	1.1.1 Understand the definitions and notations of functions
	1.1.2 Recognise the graphs of functions
	1.1.3 Find the domains and ranges of functions
	1.1.4 Understand the concept of composite functions and their calculations
	1.1.5 Understand the one-to-one, onto and one-to one onto functions
	1.1.6 Understand the concept of inverse functions and their finding methods
1.2 Quadratic Equations and Functions in One Variable	1.2.1 Understand the solving methods of quadratic equations in one variable
	1.2.2 Apply the discriminant of a quadratic equation
	1.2.3 Understand the relationship between roots and coefficients of quadratic equations in one variable
	1.2.4 Understand the graphs and properties of quadratic functions in one variable
	1.2.5 Find the extreme values of quadratic functions in one variable
1.3 Polynomials	1.3.1 Perform the operations of polynomials
	1.3.2 Understand the applications of remainder theorem and factor theorem
	1.3.3 Understand the methods of factorisation of polynomials in one variable
	1.3.4 Solve the higher-degree polynomial equations in one variable
1.4 Fraction	1.4.1 Perform the operations of fractions
	1.4.2 Understand the application and solving mthods of fractional equations
	1.4.3 Understand the simplification of denominators of partial fractions for product of linear factors or positive powers of linear factors or products of quadratic factors
1.5 Irrational Expressions	1.5.1 Perform the radical operations
	1.5.2 Understand the methods of rationalising denominators
	1.5.3 Understand the solving methods of irrational equations
	1.5.4 Find the square roots of quadratic surds
1.6 Systems of Equations	1.6.1 Solve the systems of linear equations in three variables
	1.6.2 Solve the systems of quadratic equations in two variables
1.7 Inequalities	1.7.1 Understand the properties of inequalities
	1.7.2 Solve the linear inequalities, quadratic inequalities in one variable and systems of inequalities in one variable
	1.7.3 Solve the inequalities of higher order in one variable
	1.7.4 Solve the fractional inequalities
	1.7.5 Solve the inequalities involving absolute value
	1.7.6 Solve the linear inequalities in two variables and systems of inequalities in two variables
	1.7.7 Use graphical method to solve linear programming problems
1.8 Sequences and Series	1.8.1 Understand the general form of Arithmetic sequences and sum of Arithmetic series / progressions and their applications
	1.8.2 Understand the general form of Geometric sequences and sum of Geometric series/ progressions and their applications
	1.8.3 Understand the methods to find the sums of infinite geometric series
	1.8.4 Find the sums of some simple special series
1.9 Exponential and Logarithmic Functions	1.9.1 Understand the properties and laws of exponents and logarithms
	1.9.2 Understand the change-of-base formula of logarithms
	1.9.3 Solve the exponential and logarithmic equations
	1.9.4 Recognise the graphs of exponential and logarithmic functions

Subject Matter	Knowledge Content
1.10 Determinants	1.10.1 Compute the values of determinants
	1.10.2 Understand the properties of determinants
	1.10.3 Apply the Cramer's Rule to solve systems of linear equations in three variables
1.11 Matrices	1.11.1 Understand the concept of matrices
	1.11.2 Perform the matrices operations [the calculation of the addition and subtraction, scalar products, products (where appropriate) of matrices]
	1.11.3 Understand the methods to find the inverses of nonsingular 2 by 2 or 3 by 3 matrices
	1.11.4 Apply the inverse matrices or Gaussian elimination methods to solve the systems of linear equations in two or three variables
1.12 The Binomial Theorem	1.12.1 Expand the Binomial Theorem for positive integer indices
	1.12.2 Apply the formula of general term in a binomial expansion
	1.12.3 Understand the applications of the Binomial Theorem in approximation calculations
1.13 Vectors	1.13.1 Understand the concept of a vector
	1.13.2 Understand the addition, subtraction and scalar multiplication of vectors
	1.13.3 Understand the concept and applications of position vectors
	1.13.4 Find the unit vector

2．Trigonometry

Subject Matter	Knowledge Content
2.1 Angles and Their Measures	2.1.1 Perform the conversion between radian and degree
	2.1.2 Understand the formulas for the lengths of arcs and areas of sectors
2.2 Trigonometric Functions of Arbitrary Angles	2.2.1 Understand the definitions of trigonometric functions
	2.2.2 Apply the exact values of trigonometric functions of special angles (0°, 30°, 45°, 60°, 90°)
	2.2.3 Determine the sign of the trigonometric functions' values and compute their values
	2.2.4 Understand the induction formulas of trigonometric functions
	2.2.5 Recognise the graphs of trigonometric functions
2.3 Solutions of Any Triangle	2.3.1 Understand the applications of Sine Rule and Cosine Rule
	2.3.2 Solve the measurement problems
	2.3.3 Understand the formulas for areas of triangles
	2.3.4 Understand the methods to find radius of the circumcircle and that of the inscribed circle of the triangle
2.4 Trigonometric Identities	2.4.1 Understand the elementary trigonometric identities
	2.4.2 Understand the sum and difference formulas for trigonometric functions
	2.4.3 Understand the double-angle and half-angle formulas
2.5 Trigonometric Equations	2.5.1 Find the solutions of trigonometric equations with given condition
2.6 Solid Geometry	2.6.1 Find the angles between straight lines and planes or two planes
	2.6.2 Solve the problems on solids
2.7 Longitude and Latitude	2.7.1 Understand the concept of longitude and latitude
	2.7.2 Compute the distance between two places on the same meridian of longitude or same parallel of latitude
	2.7.3 Compute the shortest distance between two places on the same parallel of latitude

3．Analytic Geometry

Subject Matter	Knowledge Content
3.1 Rectangular Coordinate System and Areas of Polygons	3.1.1 Understand the distance formula between two points 3.1.2 Understand the formulas of internal and external divisions of a line 3.1.3 Use the vertex coordinates to find the areas of triangles and polygons
3.2 Straight Lines	3.2.1 Understand the definition of gradients 3.2.2 Understand the conditions of parallelisms and perpendicularities of two straight lines 3.2.3 Understand the methods to find the equations of straight lines 3.2.4 Find the gradients and intercept from the equations of straight lines 3.2.5 Find the angle of intersection of two straight lines 3.2.6 Find the intersection point of two straight lines 3.2.7 Understand the formulas of the perpendicular distance from a point to a straight line, distance between two parallel lines
3.3 Circles	3.3.1 Understand the concept of locus and their methods of finding 3.3.2 Understand the methods to find equations of circles 3.3.3 Find the center and the radius of a circle from the equation of the circle 3.3.4 Solve the circle related problems (Tangent between circle and straight line, length of tangent, the longest or shortest distance between point and circle) 3.3.5 Find the equation of the tangent at a point on a circle

4．Statistics and Probabilities

Subject Matter	Knowledge Content
4.1 Statistics	4.1.1 Produce the tables of the cumulative frequency distributions, frequency polygons and cumulative frequency polygons/ogives 4.1.2 Understand the measures of central tendency 4.1.3 Understand the measures of dispersion 4.1.4 Understand the concept and calculation of statistical indices
4.2 Permutations and Combinations	4.2.1 Understand the addition and multiplication principles 4.2.2 Understand the formula of number of permutations and solve linear permutation related problems 4.2.3 Solve the circular permutation related problems 4.2.4 Solve the problems of permutations of all objects that are not mutually distinct 4.2.5 Solve the problems of permutations of distinct objects with repetition allowed 4.2.6 Understand the formula of number of combinations and solve combination related problems
4.3 Probabilities	4.3.1 Understand the concept of sample spaces, events and probabilities 4.3.2 Understand the concept of mutually exclusive events and addition rule 4.3.3 Understand the concept of independent events and multiplication rule 4.3.4 Understand the concept and calculation of mathematical expected values 4.3.5 Understand the applications of binomial distribution 4.3.6 Understand the applications of normal distribution

5．Calculus

Subject Matter	Knowledge Content
5.1 Limits	5.1.1 Understand the concept and properties of limits
	5.1.2 Understand the calculation of limits of sequences
	5.1.3 Understand the calculation of limits of functions
	5.1.4 Apply the L' Hospital rule to find the limits of functions
5.2 Differentiation	5.2.1 Understand the concept of derivatives
	5.2.2 Understand the basic formulas of differentiation of functions
	5.2.3 Understand the differentiation rules
	5.2.4 Apply the Chain rule to find the differentiation of composite functions
	5.2.5 Understand the differentiation of implicit functions
	5.2.6 Find the derivatives of higher order
5.3 Applications of Differentiations	5.3.1 Find the tangent and normal of a point on a curve
	5.3.2 Determine the increase and decrease of functions
	5.3.3 Find the local maxima and local minima of functions
	5.3.4 Find the global maximum and global minimum values of functions, and solve the related questions
	5.3.5 Find the instantaneous velocities and accelerations of linear motions
	5.3.6 Understand the concept and applications of rates of changes
	5.3.7 Understand the approximations of increments
	5.3.8 Determine the convexities and points of inflection of functions
	5.3.9 Understand the graphing of polynomial functions
5.4 Indefinite Integrals	5.4.1 Understand the concept of indefinite integrals
	5.4.2 Understand the basic integration formulas
	5.4.3 Understand the integration rules
	5.4.4 Understand the integration by substitution
	5.4.5 Understand the integration by partial fractions
	5.4.6 Understand the integration by trigonometric functions
5.5 Definite Integrals and Their Applications	5.5.1 Understand the concept of definite integral
	5.5.2 Understand the relationship between indefinite integrals and definite integrals
	5.5.3 Understand the properties and operations of definite integrals
	5.5.4 Apply the definite integrals to find areas
	5.5.5 Apply the definite integrals to find volumes of solids of revolution where coordinate axes as a rotation axis
	5.5.6 Apply the definite integrals to solve linear motions problems

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ADVANCED MATHEMATICS (II) SYLLABUS

Ⅰ Syllabus Description

The Senior Middle Level Advanced Mathematics (II) syllabus is intended to assess the level of Independent Chinese Secondary School students' knowledge and ability throughout three years of following the high school Advanced Mathematics (II) curriculum. The results can be used as a reference for candidates to further their studies or to apply for jobs.

Ⅱ Exam Objectives

1. Basic Knowledge and Skills
    1.1 Understand the basic knowledge of algebra, trigonometry, analytic geometry, probability and statistics, and calculus
    1.2 Perform the basic computing, data processing, interpretation or draw diagrams, etc. according to certain rules and procedures
    1.3 Understand the basic mathematical thinking and mathematical methods

2. Mathematical Thinking Ability
    2.1 Use of appropriate mathematical thinking, mathematical methods and data to solve problems based on conditions
    2.2 Distinguish basic figures from complex figures, analyse the relationships between their basic elements
    2.3 Apply logical thinking to perform correct inference or proof
    2.4 Apply the mathematical knowledge, select effective strategies and use reasoning skills to solve problems, evaluate the problem-solving process and rationality
    2.5 Able to build mathematical models to solve practical problems

3. Comprehensive Ability of Problem Solving
    3.1 Utilise of mathematical knowledge and methods in different fields to solve problems

Ⅲ Structure of Exam Paper

This subject comprises two papers:

Paper 1: Multiple-choice Questions（40%） .... Duration: 1 hr
      Answer all 20 questions.

Paper 2: Subjective Questions（60%） .... Duration: 2 hrs
      This paper consists of four sections：
      Section A Trigonometry (2 questions)
      Section B Algebra (4 questions)
      Section C Analytic Geometry (2 questions)
      Section D Calculus (4 questions)
           Answer six from 12 questions; however, answer at least one but not more than two from each section.

Ⅳ Exam Content

1. Algebra

Subject Matter	Knowledge Content
1.1 Functions	1.1.1 Find the domains and ranges of functions 1.1.2 Understand the concepts and operations of composite functions 1.1.3 Understand the one-to-one, onto and one-to-one onto functions 1.1.4 Understand the concept and methods to find the inverse functions 1.1.5 Determine the parity /odevity of a function
1.2 Polynomials	1.2.1 Understand the applications of the remainder theorem and the factor theorem 1.2.2 Understand the menthods of factorisation of polynomials in one variable 1.2.3 Solve the equations of higher order in one variable biquadratic equations, and reciprocal equations
1.3 Fractions	1.3.1 Understand the method to solve fractional equations 1.3.2 Understand the simplification of denominators of partial fractions for products of linear factors, positive powers of linear factors, product of quadratic factors, and positive powers of quadratic factors.
1.4 Irrational Expressions	1.4.1 Perform the operations of radicals 1.4.2 Understand the solving methods of irrational equations
1.5 Inequalities	1.5.1 Understand the proofs of inequalities 1.5.2 Solve the inequalities of higher order in one variable 1.5.3 Solve the fractional inequalities 1.5.4 Solve the irrational inequalities 1.5.5 Solve the inequalities involving absolute value 1.5.6 Find the maxima and minima of algebraic expressions
1.6 Sequences and Series	1.6.1 Understand the sums of infinite geometric series / progressions 1.6.2 Find the sums of some simple special series
1.7 Exponential and Logarithmic Functions	1.7.1 Understand the properties and laws of exponents and logarithms 1.7.2 Understand the change-of-base formula of logarithms 1.7.3 Solve the exponential and logarithmic equations 1.7.4 Recognize the graphs of exponential and logarithmic functions
1.8 Permutations and Combinations	1.8.1 Understand the addition and multiplication principles 1.8.2 Understand the formula of number of permutations and solve linear permutation related problems 1.8.3 Solve the circular permutations related problems 1.8.4 Solve the problems of permutations of all objects that are not mutually distinct 1.8.5 Solve the problems of permutations of distinct objects with repetition allowed 1.8.6 Understand the formula of number of combinations and solve combination related problems
1.9 The Binomial Theorem	1.9.1 Expand the Binomial Theorem for positive integer indices 1.9.2 Apply the formula of general term in a binomial expansion 1.9.3 Understand the applications of the Binomial Theorem in approximation calculations
1.10 Probabilities	1.10.1 Understand the concept of sample spaces, events and probabilities 1.10.2 Understand the concept of mutually exclusive events and addition rule 1.10.3 Understand the independent events and multiplication rule 1.10.4 Understand the concept of dependent events and calculation of conditional probability 1.10.5 Understand the concept and calculation of mathematical expected values 1.10.6 Understand the applications of binomial distributions
1.11 Vectors	1.11.1 Understand the concept of vectors 1.11.2 Understand the concept and applications of position vectors 1.11.3 Understand the applications of vectors in plane geometry 1.11.4 Understand the inner products of vectors and their applications

Subject Matter	Knowledge Content
1.12 Logical Argumentations	1.12.1 Understand the compound statements and their truth values
	1.12.2 Apply the truth table to prove the logical equivalence
	1.12.3 Understand the concept of implications
	1.12.4 Determine the validity of argumentations
1.13 The Principle of the Mathematical Induction	1.13.1 Understand the applications of the mathematical induction
1.14 Complex Numbers	1.14.1 Understand the concept and operations of complex numbers
	1.14.2 Understand the graphs of complex numbers in complex plane
	1.14.3 Perform the transform between algebraic forms and trigonometric forms of complex numbers
	1.14.4 Understand the trigonometric forms of complex numbers and their multiplications and quotients
	1.14.5 Understand the De Moivre's Theorem and its applications
	1.14.6 Find the nth roots of complex numbers and solve binomial equations
	1.14.7 Understand the relationship between roots and coefficients of equation of nth order in one variable

2. Trigonometry

Subject Matter	Knowledge Content
2.1 Trigonometric Functions of Arbitrary Angles of Any Magnitude	2.1.1 Understand the induction formulas of trigonometric functions
	2.1.2 Understand the graphs of trigonometric functions
2.2 Solutions of Any Triangle	2.2.1 Understand the application of the Sine Rule and the Cosine Rule
	2.2.2 Solve the measurement peroblems
	2.2.3 Understand the formulas of areas of triangles
	2.2.4 Understand the radius of the circumcircle and that of the inscribed circle of a triangle
2.3 Trigonometric Identities	2.3.1 Understand the basic identities of trigonometric functions
	2.3.2 Understand the trigonometric functions of sums and subtractions of angles
	2.3.3 Understand the double-angle formulas and half-angle formulas for trigonometric functions
	2.3.4 Understand the product-to-sum formulas for trigonometric functions
	2.3.5 Understand the sum-to-product formulas for trigonometric functions
2.4 Trigonometric Equations	2.4.1 Find the solutions of trigonometric equations with given conditions and general solutions of trigonometric equations
	2.4.2 Understand the graphical solutions of trigonometric functions
2.5 Solid Geometry	2.5.1 Solve the problems on solids
2.6 Inverse Trigonometric Functions	2.6.1 Understand the definitions and graphs of inverse trigonometric functions
	2.6.2 Perform the operations of inverse trigonometric functions
	2.6.3 Understand the proofs of identities of inverse trigonometric functions
	2.6.4 Solve the inverse trigonometric equations

3．Analytic Geometry

Subject Matter	Knowledge Content
3.1 Circles	3.1.1 Understand the concept of locus and their methods of finding 3.1.2 Understand the equation of a circle and its methods of finding 3.1.3 Find the center and the radius of a circle from the equation of the circle 3.1.4 Solve the circle related problems (Tangent between circle and straight line, length of tangent, the longest or shortest distance between point and circle) 3.1.5 Find the equations of tangents of circles 3.1.6 Understand the conditions of two circles touching each other, two circles touching orthogonally
3.2 Transformations of Coordinates	3.2.1 Understand the formulas of translations and rotations of the coordinate axes 3.2.2 Simplify quadratic equations in two variables by translating the coordinate axes
3.3 Parametric Equations	3.3.1 Perform the interchange of parametric equations and ordinary equations 3.3.2 Apply the parametric equations to solve loci related problems
3.3 Conic Sections	3.4.1 Recognize the conic sections 3.4.2 Understand the standard equations and geometric properties of a parabola, an ellipse and a hyperbola 3.4.3 Find the equations of tangents and normals of conic sections 3.4.4 Understand the parametric equations and applications of conic sections
3.5 Polar Coordinates	3.5.1 Understand the methods to find polar equations 3.5.2 Perform the interchange of polar coordinates and rectangular coordinates 3.5.3 Differentiate the graph of polar equations

4．Calculus

Subject Matter	Knowledge Content
4.1 Limits	4.1.1 Understand the concept and properties of limits 4.1.2 Understand the calculation of limits of sequences 4.1.3 Understand the calculation of limits of functions 4.1.4 Apply the L' Hospital rule to find the limits of functions 4.1.5 Determine the continuities of functions 4.1.6 Find the asymptotes of curves
4.2 Differentiation	4.2.1 Understand the definition of derivatives 4.2.2 Understand the relationship between derivatives and continuities of functions 4.2.3 Understand the basic differentiation formulas of functions 4.2.4 Understand the differentiation rules 4.2.5 Apply the Chain rule to find the differentiation of composite functions 4.2.6 Understand the differentiation of implicit functions 4.2.7 Understand the differentiation of parametric functions 4.2.8 Find the derivatives of higher order 4.2.9 Understand the derivatives of logarithmic functions
4.3 Applications of Differentiation	4.3.1 Determine the increase and decrease of functions 4.3.2 Find the local maxima and local minima of functions 4.3.3 Find the global maximum and global minimum values of functions, and solve the related questions 4.3.4 Understand the concept and applications of rates of changes 4.3.5 Determine the convexities and points of inflection of functions 4.3.6 Understand the graphing of curves 4.3.7 Apply the Newton's method to find the approximate solutions of equations in one variable

Subject Matter	Knowledge Content
4.4 Indefinite Integrals	4.4.1 Understand the integration by substitution
	4.4.2 Understand the integration by partial fractions
	4.4.3 Understand the integrations of trigonometric functions
	4.4.4 Understand the integrations of trigonometric functions by substitution
	4.4.5 Understand the integration by parts
4.5 Definite Integrals and Their Applications	4.5.1 Understand the properties and operations of definite integrals
	4.5.2 Apply the definite integrals to find areas
	4.5.3 Apply the definite integrals to find volumes of solids of revolution
	4.5.4 Apply the definite integrals to solve linear motions problems
	4.5.5 Find the of areas of figures in polar coordinate system (figures are provided)
	4.5.6 Apply the Trapezium rule and Simpson's rule to find approximations of definite integrals
4.6 Ordinary Differential Equations (ODEs)	4.6.1 Recognise the ordinary differential equations
	4.6.2 Solve the variable separable, first order homogeneous and first order linear differential equations
	4.6.3 Solve the applications of first order ODEs
	4.6.4 Solve the second order linear differential equations with constant coefficients

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ADVANCED MATHEMATICS SYLLABUS

Ⅰ Syllabus Aims

The Senior Middle Level Advanced Mathematics syllabus is intended to assess the level of Independent Chinese Secondary School students' knowledge and ability over three years of high school Advanced Mathematics curriculum. The results can be used as a reference for candidates to further their studies or to apply for jobs.

Ⅱ Exam Objectives

1. Basic Knowledge and Skills
   1.1 Demonstrating basic knowledge and understanding of algebra, trigonometry, analytic geometry, probability and statistics, and calculus
   1.2 Demonstrating the ability to perform the basic computing, data processing, interpretation or draw diagrams, etc. according to certain rules and procedures
   1.3 Demonstrating understanding of the basic mathematical thinking and mathematical methods
   1.4 Demonstrating the ability to solve simple application

2. Mathematical Thinking Ability
   2.1 Demonstrating ability to use appropriate mathematical thinking, mathematical methods and data to solve problems based on conditions
   2.2 Demonstrating the ability to distinguish basic figures from complex figures and analyse the relationships between their basic elements
   2.3 Demonstrating the ability to apply logical thinking to perform correct inference or proof
   2.4 Demonstrating the ability to apply mathematical knowledge, select effective strategies and use reasoning skills to solve problems, evaluate the problem-solving process and rationality
   2.5 Demonstrating the ability to build mathematical models to solve practical problems

3. Comprehensive Ability of Problem Solving
   3.1 Demonstrating the ability to utilise mathematical knowledge and methods in different fields to solve problems

Ⅲ Structure of Exam Paper

The exam paper is made up of 2 parts:

Paper 1: Multiple-choice Questions（40%）**..** Duration: 1 hr
   Answer all 20 questions.

Paper 2: Subjective Questions（60%）**..** Duration: 2 hrs
   This paper consists of two sections：
   Section A Compulsory（20%）
      Answer all five questions.
   Section B Elective（40%）
      Answer any four, but not more than four out of the seven questions.

Ⅳ Exam Content

1. Algebra

Subject Matter	Knowledge Content
1.1 Quadratic Equations in One Variable	1.1.1 Understand the solving methods of quadratic equations in one variable 1.1.2 Apply the discriminant of a quadratic equation 1.1.3 Understand the relationship between roots and coefficients of quadratic equations in one variable
1.2 Polynomials	1.2.1 Perform the operations of polynomials 1.2.2 Understand the applications of remainder theorem and factor theorem 1.2.3 Understand the methods of factorisation of polynomials in one variable 1.2.4 Solve the higher-degree polynomial equations in one variable
1.3 Rational Expressions	1.3.1 Perform the four operations of rational expressions 1.3.2 Understand the solving methods of for rational equations 1.3.3 Understand the simplification of denominators of partial fractions for products of linear factors or positive or power of linear factors
1.4 Irrational Expressions	1.4.1 Perform the radical operations 1.4.2 Understand the methods of rationalising denominatos 1.4.3 Understand the solving methods of irrational equations 1.4.4 Find the square roots of quadratic surds
1.5 Sequences and Series	1.5.1 Understand the general form of Arithmetic sequences and sum of Arithmetic series/ progressions and their applications 1.5.2 Understand the general form of Geometric sequences and sum of Geometric series/ progressions and their applications 1.5.3 Understand the methods to find the sums of infinite geometric series/ progressions 1.5.4 Find the sums of some simple special series
1.6 Matrices and Determinants	1.6.1 Understand the concept of matrices 1.6.2 Perform the matrices operations [the calculation of the addition and subtraction, scalar products, products (where appropriate) of matrices] 1.6.3 Understand the methods for finding the inverses of nonsingular 2 by 2 or 3 by 3 matrices 1.6.4 Apply the inverse matrices or Gaussian elimination methods to solve the systems of linear equations in two or three variables 1.6.5 Compute the 2 by 2 and 3 by 3 determinants 1.6.6 Understand the properties of determinats 1.6.7 Apply the Cramer's Rule to solve systems of linear equations in two or three variables
1.7 Inequalities	1.7.1 Understand the properties of inequalities 1.7.2 Solve the linear and quadratic inequalities in one variable and systems of inequalities in one variable 1.7.3 Solve the inequalities of higher order in one variable 1.7.4 Solve the fractional inequalities 1.7.5 Solve the inequalities involving absolute value 1.7.6 Solve the linear inequalities and systems of linear inequalities in two variables 1.7.7 Use graphical method to solve linear programming problems
1.8 The Binomial Theorem	1.8.1 Expand the Binomial Theorem for positive integer indices 1.8.2 Apply the general forms of binomial expansions

Subject Matter	Knowledge Content
1.9　Functions	1.9.1 Understand the definitions and notations of functions
	1.9.2 Find the domains and ranges of functions
	1.9.3 Recognise the graphs of functions
	1.9.4 Understand the concept of composite functions and their calculations
	1.9.5 Understand the one-to-one, onto and one-to-one onto functions
	1.9.6 Understand the concept of inverse functions and their calculations
1.10 Exponents and Logarithms	1.10.1 Understand the properties and laws of exponents and logarithms
	1.10.2 Understand the change-of-base formula of logarithms
	1.10.3 Solve the exponential and logarithmic equations
	1.10.4 Apply the exponents and logarithms to solve problems in compound interest and annuity

2．Trigonometry

Subject Matter	Knowledge Content
2.1　Angles and Their Measures	2.1.1 Perform the conversion between radian and degree
	2.1.2 Understand the formulas for the lengths of arcs and areas of sectors
2.2　Trigonometric Functions	2.2.1 Understand the definitions of the trigonometric functions
	2.2.2 Apply the exact values of trigonometric functions of special angles (0°, 30°, 45°, 60°, 90°)
	2.2.3 Determine the sign of the trigonometric functions values and calculate their values
	2.2.4 Recognise the graphs of trigonometric functions
2.3　Solutions of Any Triangle	2.3.1 Understand the applications of Sine Rule and Cosine Rule
	2.3.2 Solve the measurement problems
	2.3.3 Understand the formulas for areas of triangles
	2.3.4 Find the radius of the circumcircle of a triangle
2.4　Trigonometric Identities	2.4.1 Understand the elementary trigonometric identities
	2.4.2 Understand the sum and difference formulas for trigonometric functions
	2.4.3 Understand the double-angle and half-angle formulas for trigonometric functions
2.5　Trigonometric Equations	2.5.1 Find the solutions of trigonometric equations with given conditions
2.6　Solid Geometry, Longitude and Latitude	2.6.1 Find the angles between straight lines and planes or two planes
	2.6.2 Understand the concept of longitude and latitude
	2.6.3 Compute the distance between two places on the same meridian of longitude or same parallel of latitude

3．Analytic Geometry

Subject Matter	Knowledge Content
3.1　Rectangular Coordinate System and Areas of Polygons	3.1.1 Understand the distance formula between two points
	3.1.2 Understand the formulas of internal and external divisions of a line
	3.1.3 Use the vertex coordinates to find the areas of triangles and polygons
3.2　Straight Lines	3.2.1 Understand the definition of gradients
	3.2.2 Understand the conditions of parallelisms and perpendicularities of two straight lines
	3.2.3 Understand the methods to find the equations of straight lines
	3.2.4 Find the gradients and intercepts from equations of straight lines
	3.2.5 Find the intersection point of two straight lines
	3.2.6 Understand the formula of the perpendicular distance from a point to a straight line
3.3　Circles	3.3.1 Understand the methods to find the equation of a circle
	3.3.2 Find the center and the radius of a circle from the equation of the circle
	3.3.3 Solve the circle related problems (Tangent between circle and straight line, length of tangent, the longest or shortest distance between point and circle)

4．Statistics and Probabilities

Subject Matter	Knowledge Content
4.1 Statistics	4.1.1 Produce the tables of the cumulative frequency distributions, frequency polygons and cumulative frequency polygons/ogives 4.1.2 Understand the measures of central tendency 4.1.3 Understand the measures of dispersion 4.1.4 Understand the concept and calculation of coefficient of variation 4.1.5 Understand the concept and calculation of correlation coefficient 4.1.6 Understand the concept and calculation of statistical indices
4.2 Permutations and Combinations	4.2.1 Understand the addition and multiplication principles 4.2.2 Understand the formula of number of permutations and solve linear permutation related problems 4.2.3 Solve the circular permutation 4.2.4 Solve the problems of permutations of all objects that are not mutually distinct 4.2.5 Solve the problems of permutations of distinct objects with repetition allowed 4.2.6 Understand the formula of number of combinations and solve combination related problems
4.3 Probabilities	4.3.1 Understand the concept of sample spaces, events and probabilities 4.3.2 Understand the concept of mutually exclusive events and addition rule 4.3.3 Understand the concept of independent events and multiplication rule 4.3.4 Understand the concept and calculation of mathematical expected values 4.3.5 Understand the applications of normal distribution

5. Calculus

Subject Matter	Knowledge Content
5.1 Limits	5.1.1 Understand the concept of limits 5.1.2 Understand the calculation of limits of functions
5.2 Differentiations	5.2.1 Understand the concept of derivatives 5.2.2 Understand the basic formulas of differentiation of functions 5.2.3 Understand the differentiation rules 5.2.4 Apply the Chain Rule to find the differentiation of composite functions 5.2.5 Find the derivatives of higher order 5.2.6 Understand the differentiation of implicit functions 5.2.7 Understand the two basic limits: $\lim\limits_{x\to 0} \dfrac{\sin x}{x}$ and $\lim\limits_{x\to\infty} \left(1+\dfrac{1}{x}\right)^{x}$ 5.2.8 Understand the differentiation of trigonometric functions, exponential functions and logarithmic functions
5.3 Applications of Differentiations	5.3.1 Find the tangent and normal of a point on a curve 5.3.2 Determine the increase and decrease of functions 5.3.3 Find the local maxima and local minima of functions 5.3.4 Find the global maximum and global minimum values of functions 5.3.5 Determine the convexities to and points of inflecion of functions 5.3.6 Understand the graphing of polynomial functions 5.3.7 Understand the concept and applications of rates of changes 5.3.8 Understand the approximations of increments

Subject Matter	Knowledge Content
5.4　Indefinite Integral	5.4.1 Understand the concept of indefinite integrals
	5.4.2 Understand the basic integration formulas
	5.4.3 Understand the integration rules
	5.4.4 Understand the integration by substitution
	5.4.5 Understand the integration by partial fractions
5.5.　Definite Integrals and Their Applications	5.5.1 Understand the concept of definite integral
	5.5.2 Understand the relationship between indefinite integrals and definite integrals
	5.5.3 Understand the properties and operations of definite integrals
	5.5.4 Apply the definite integrals to find areas
	5.5.5 Apply the definite integrals to find volumes of solids of revolution

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ART EXAM SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Art examination aims to enable students to acquire and develop:
- Knowledge in the subject of art
- Painting skills
- Creativity
- Passion

The results of the UEC Senior Art examination may serve as a yardstick for students to decide on going for higher studies or looking for a working career.

Ⅱ Exam Objectives

1. Art Knowledge
   1.1 Demonstrating basic knowledge of art
   1.2 Demonstrating awareness of the life applications of art

2. Art Skills
   2.1 Demonstrating the skills to draw & paint with pencil, water colour and Chinese ink
   2.2 Demonstrating the ability to plan the layout and stress on the primary and secondary objects
   2.3 Demonstrating the ability to apply the principle of shapes and forms
   2.4 Demonstrating the ability to master the use of colours
   2.5 Demonstrating the ability to articulate the theme of a painting with shapes and images
   2.6 Demonstrating the ability to grasp the unique characteristics of each painting material
   2.7 Demonstrating the ability to master the bonding technique of points, lines and planes for different painting materials

3. Creative Artistic Thinking
   3.1 Demonstrating the ability to present creativity through the integration of nature and life experiences
   3.2 Demonstrating the ability to present creativity via different mediums and materials

Ⅲ Exam Structure

This exam is made up of 2 papers:

Paper 1: Art Knowledge (15%) ………………………………………………………………… Duration: 20 mins
           Answer all 15 questions.

Paper 2: Section Ⅰ: Sketches (35%) ………………………………………………………… Duration: 2 hrs 30 mins
                Item A: Still object.
                Item B: Portrait

       Section Ⅱ: Painting (20%) …………………………………………………………… Duration: 2 hrs 40 mins
                Item C: Water colour
                Item D: Chinese ink

     Section III: Creative Expression
                Item E: Visual communication design (30%) ………………………………… Duration: 2 hrs 30 mins
                Item F: 3-dimensional modelling (30%) …………………………………… Duration: 3 hrs

NB. There are 3 sections in Paper 2, all of which must be answered. When students register for the art exam, they must state 1 item/topic in each section to answer, and are prohibited from switching exam topics during the exam.

IV Exam Content

1. Art Knowledge

Primary Subject Matter	Secondary Subject Matter	Knowledge Content	Cognitive Demand
1.1 Overview of Art	1.1.1 Art and Life	1.1.1.1 Definition of art	Memorisation Comprehension
		1.1.1.2 Types of art	Memorisation
		1.1.1.3 Aesthetic process	Memorisation, Comprehension
		1.1.1.4 Forms and principles of art	Memorisation, comprehension
	1.1.2 Western & Oriental Sculpture	1.1.2.1 Differences in western and oriental sculpture	Memorisation, comprehension
		1.1.2.2 Development history and characteristics of western & oriental sculpture	Memorisation
		1.1.2.3 Development history and Characteristics of contemporary sculpture	Memorisation
	1.1.3 Chinese Painting	1.1.3.1 Definition of Chinese painting	Memorisation
		1.1.3.2 Characteristics of traditional flowers & birds, landscapes and figures in Chinese painting	Memorisation
		1.1.3.3 Characteristics of contemporary Chinese painting	Memorisation, Comprehension
		1.1.3.4 Characteristics of Chinese painting in Malaysia	Memorisation, Comprehension
	1.1.4 Oriental Art Appreciation	1.1.4.1 Characteristics of Indian art	Memorisation, Comprehension
		1.1.4.2 Characteristics of Japanese ukiyo-e	Memorisation, Comprehension
		1.1.4.3 Characteristics of Tibetan Tangka art	Memorisation, Comprehension
	1.1.5 Development of Contemporary Art	1.1.5.1 Development history & characteristics of contemporary art	Memorisation
	1.1.6 Public art	1.1.6.1 Composition of public art	Memorisation, Comprehension
		1.1.6.2 Definition & functions of public art	Memorisation Comprehension
		1.1.6.3 Expression of public art	Memorisation, Comprehension
1.1 Overview of Art	1.1.7 Architecture Appreciation	1.1.7.1 Expression of architecture	Memorisation, Comprehension
		1.1.7.2 Definition & functions of architecture	Memorisation, Comprehension
		1.1.7.3 Components of architectural design	Memorisation, Comprehension
		1.1.7.4 Unique architecture in Malaysia	Memorisation, Comprehension
1.2 Principles of Image	1.2.1 Principles of Image	1.2.1.1 Definition of image	Memorisation
		1.2.1.2 Composition of form	Memorisation, Comprehension
		1.2.1.3 Composition of image	Memorisation, Comprehension
		1.2.1.4 Principles of form	Memorisation, Comprehension

Primary Subject Matter	Secondary Subject Matter	Knowledge Content	Cognitive Demand
1.3 Industrial & Applied Arts	1.3.1 Folk Art in Malaysia	1.3.1.1 Definition of folk art 1.3.1.2 Expression & application of folk art	Memorisation Memorisation, Comprehension
	1.3.2 Corporate Image Design	1.3.2.1 Definition of corporate image design 1.3.2.2 Types of corporate image design	Memorisation Memorisation, Comprehension
	1.3.3 Printing & Graphic Arts	1.3.3.1 Development history & characteristics of printing 1.3.3.2 Printing & life applications	Memorisation Memorisation, Comprehension
	1.3.4 Comic & Anime	1.3.4.1 Development history & characteristics of comic & anime	Memorisation
	1.3.5 Overview on Design Development	1.3.5.1 Development & characteristics of industrial art movements 1.3.5.2 Development & characteristics of modern art movements 1.3.5.3 Development & characteristics of decorative art 1.3.5.4 Development & characteristics of modernist design 1.3.5.5 Development & characteristics of Bauhaus	Memorisation Memorisation Memorisation Memorisation Memorisation
	1.3.6 Illustration & Storyboard	1.3.6.1 Definition of illustration & storyboard	Memorisation
1.4 Chromatics	1.4.1 Colours and Life	1.4.1.1 Relationship of colours in life 1.4.1.2 Shades & pigments 1.4.1.3 Sensitivity to colours 1.4.1.4 Matching colours	Memorisation, Comprehension Memorisation Memorisation, Comprehension Memorisation, Comprehension

2. Sketches of Still Objects

2.1 Classification of materials：

Material	Items
1. Plastic	Water bottle, pail, basketball (game), basin, etc
2. Fruit & vegetables	Apple, orange, vegetables, flowers, banana leaf (leaf), etc
3. Food	Bread, cake, jelly, hamburger, French fry, etc
4. Metal	Table spoon, fork, stainless steel cup, aluminum can, etc
5. Wood & paper	Basket, straw hat, ladle, tissue box, book, carton, newspaper, etc
6. Cloth & leather	Cloth shoes, rucksack, leather belt, clothing, trainers, etc
7. Porcelain & glass	Flower pot, tea cup, bowl, vase, wine bottle, red brick, etc

2.2 The exam questions require candidates to choose 3 types of material above and make 3-4 items for display (excluding background materials).

2.3 Perishable items (e.g. ice cream, ice cube, etc) and seasonal items (e.g. durian, mooncake, lantern, dumpling, etc) must not be used in exam topics.

2.4 Try to use items of daily necessity commonly found in Malaysian towns and villages in exam topics.

3. Portraits

    3.1 Sketch a young male or female model.

    3.2 The model may take up any pose (standing, sitting, lying) or use any prop (e.g. basketball, broom, school bag, etc) in his/her pose.

4. Water Colour Painting

    4.1 Exam topics are based on things within a Form 5 student's scope of imagination, including natural, real and surreal life.

5. Chinese Painting

    5.1 The exam topics are within a Form 5 student's grasp of Chinese painting, covering common themes in traditional or contemporary Chinese painting, e.g. about Malaysian people and their culture, containers, flowers and birds, plants and insects, seafood, poultry and livestock, fruit and vegetables, scenery.

    5.2 The number of inscribed words must be 14 and below.

6. Visual Communication Design

    6.1 Exam topics cover 2-dimensional design, 3-dimensional design, costume design, decoration and product design.

    6.2 There will not be any image design of English words or Chinese characters as a single exam topic.

7. 3-dimensional Modelling

    7.1 Exam topics cover natural life, items of daily use, adornment, vehicles, surreal life, public amenities, buildings, indoor and outdoor spaces.

V Exam Regulations

A. Answering questions

  1. Art Knowledge

    1.1 There are 15 objective questions, all of which must be answered.

  2. Sketches of Silent Objects

    2.1 There is only 1 compulsory question in this section.

    2.2 Candidates have to use pencil to sketch.

    2.3 Candidates have to sketch the entire still object in display, not just a part of it.

    2.4 15 minutes before the exam, the invigilator shall display the still object in question compliant with the exam topic.

    2.5 A display table, not more than 40 cm tall, will be placed against a wall in the classroom.

    2.6 The display table will be covered with a piece of cloth, 1 m in length and in single light colour (different from that of the still object). The back of the cloth will be pulled up and nailed down (must not be too tight so that folds exist), serving as a backdrop for the still object.

    2.7 Candidates must bring their own drawing kit. Borrowing of drawing instruments is strictly prohibited.

  3. Portraits

    3.1 There is only 1 compulsory question in this section.

    3.2 Candidates shall sketch only with pencils.

    3.3 Candidates have to sketch the entire model in a certain pose, not just a part of him/her.

    3.4 15 minutes before the exam, the invigilator will instruct the model to strike a pose.

    3.5 The model will take a 5-minute break after every 20 minutes. He/she will pose 6 times (the actual number of which is dependent on his/her stamina, as long as the exam can carry on smoothly).

    3.6 Candidates must keep a suitable distance from the model in consideration of his/her height.

    3.7 Candidates must bring their own drawing kit. Borrowing of drawing instruments is strictly prohibited.

  4. Water Colour Painting

    4.1 Candidates can answer any one of the 5 questions.

    4.2 Exam topics shall be revealed on the spot.

    4.3 The painting medium is strictly and only water colour (transparent and opaque).

    4.4 Candidates must bring their own painting kit. Borrowing of drawing instruments is strictly prohibited.

5. Chinese Painting

    5.1 Candidates can answer any one of the 5 questions.

    5.2 Exam topics shall be revealed on the spot.

    5.3 The painting medium is limited strictly: Chinese painting pigments, water colour or opaque water colour, Chinese ink or Chinese ink bar.

    5.4 The number of words must not exceed what has been stipulated, and wordings must be written on appropriate places on the painting.

    5.5 Candidates must bring their own painting kit. Borrowing of drawing instruments is strictly prohibited.

6. Visual Communication Design

    6.1 Candidates can answer any one of the 5 questions.

    6.2 The exam topics shall be revealed on the spot.

    6.3 Candidates may use any painting medium (except spray paint) that dries quickly and does not peel easily.

    6.4 White area or white background is not subjected to this restriction.

    6.5 Black is taken as 1 colour.

    6.6 Any single colour with different shades is taken to be more than 1 colour.

    6.7 Candidates must bring their own painting kit. Borrowing of drawing instruments is strictly prohibited.

7. 3-dimensional Modelling

    7.1 Candidates can answer any one of the 5 questions.

    7.2 The exam topics shall be revealed on the spot.

    7.3 candidates have to prepare their own painting kit before the exam.

    7.4 The painting's height, width and length must not exceed 20 cm. One of these measurements must not be less than 10 cm.

    7.5 Adhesives used must dry quickly and does not peel easily.

    7.6 Candidates must get ready their own material kit. Borrowing or exchanging materials, under whatever pretext, is strictly prohibited.

B. Papers & Materials

1. Chinese Painting
The Exam Board only provides each candidate with a piece of size 1/3 Chinese painting paper (or Xuan paper) measuring about 35 cm x 76 cm. At the bottom left corner of the front of the paper is a score sticker that indicates each candidate's serial number and exam subject, duly stamped.

2. Water Colour, Sketches of Still Objects, Portraits and Visual Communication Design
The Exam Board only provides each candidate with a 165 gsm drawing pad (27.5 cm x 37.5 cm). At the top right corner of the back of the paper is a score sticker that indicates each candidate's serial number and exam subject, duly stamped.

3. 3-dimensional Modelling

    3.1 Candidates must get ready all the necessary materials needed to present their works. Borrowing or exchanging materials, under whatever pretext, is strictly prohibited.
The Exam Board will provide each candidate with a packing carton (24 cm x 24 cm x 24 cm):

      (a) With a duly stamped score sticker stating each candidate's serial number and exam subject stuck on it.

      (b) With a piece of duly stamped score tag stating each candidate's serial number and exam subject, to be stuck to the finished work.

    -- Candidates must examine the packing cartons thoroughly. Those without score stickers and score tags are not valid.

**THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL**
BIOLOGY SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Biology examination aims to enable students to acquire and develop:

- Knowledge in the subject of Biology

The results of the UEC Senior Biology examination may serve as a yardstick for students to decide on going for higher studies or looking for a working career.

Ⅱ Exam Objectives

1. Fundamental Knowledge
   1.1 Demonstrating knowledge and understanding of basic facts, concepts, principles and doctrines in Biology
   1.2 Demonstrating understanding of models in Biology
   1.3 Demonstrating awareness and understanding of special terms in Biology
   1.4 Demonstrating understanding of experimental principles, methods and phenomena in Biology

2. Application, Analysis and Exploration of Biological Knowledge
   2.1 Demonstrating the ability to obtain precise information from scripts, pictures and charts and integrate it with existing knowledge
   2.2 Demonstrating the ability to analyse and make judgment on biological facts and phenomena
   2.3 Demonstrating the ability to predict and explain results with biological knowledge and concepts
   2.4 Demonstrating the ability to express opinions and views effectively with biological models, pictures and charts
   2.5 Demonstrating the ability to pose questions and assumptions with biological knowledge and background information
   2.6 Demonstrating the ability to analyse experimental results accurately and make conclusions

Ⅲ Structure of Exam Paper

The exam paper is made up of 2 parts:

Paper 1: Objective (40%) ……………………………………………….…………………….…… Duration: 50 mins
      All 40 questions.

Paper 2: Subjective (60%)………………………………………………….………….……..…… Duration: 1 hr 40 mins
      Section A: Compulsory Questions (30%)
            All 5 questions.
      Section B: Selective Questions (30%)
            Answer 3 questions out of 5.

Ⅳ Exam Content

1. Cells and Organisms

Subject Matter	Knowledge Content	Cognitive Demand
1.1 Chemical Composition of a Cell	1.1.1 Importance of water and inorganic salts to life	Comprehension
	1.1.2 Composition, structure and function of 4 types of organic compound (sugar, fat, protein, nucleic acid)	Analysis
	1.1.3 Condensation and hydrolysis of 4 types of organic compound (sugar, fat, protein, nucleic acid)	Comprehension
1.2 Cell Structure	1.2.1 Similarities and differences between prokaryotic and eukaryotic cell structure	Comprehension
	1.2.2 Microscopic structure of plant and animal cells	Memorisation
	1.2.3 Composition, structure, property and function of cell membrane	Analysis
	1.2.4 Influx and efflux of materials through cell membrane	Analysis
	1.2.5 Structures and functions of nucleus and cell wall	
	1.2.6 Structures and functions of organelles	Comprehension Comprehension
1.3 Cell Physiology	1.3.1 Relationship between chemical reactions and energy activation in cells	Comprehension
	1.3.2 Properties and effects of enzymes	Comprehension
	1.3.3 Factors affecting the rate of enzymic action	Analysis
	1.3.4 Concept of plasminogen and co-factors	Comprehension
1.4 Cell Differentiation	1.4.1 Concept of cell differentiation	Comprehension
	1.4.2 Types, characteristics, distribution and functions of plants and animals	Comprehension

2. Sustaining Life

Subject Matter	Knowledge Content	Cognitive Demand
2.1 Nutrition	2.1.1 Nutrition for living organisms	Comprehension
	2.1.2 Chlorophyll structure and photosynthesis	Comprehension
	2.1.3 Chemical changes and energy transfer in the presence and absence of light	Comprehension
	2.1.4 Environmental factors affecting photosynthesis	Analysis
	2.1.5 Concept of 3 carbon and 4 carbon plants	Comprehension
	2.1.6 Concept of physical and chemical digestion	Comprehension
	2.1.7 Functions of human digestive system (gi tract, digestive glands)	Comprehension
	2.1.8 Of small intestines to food absorption	Comprehension
	2.1.9 Absorption, distribution and use of nutrients	Comprehension
	2.1.10 Digestive features of herbivores	Comprehension
2.2 Cellular Respiration and Energy Release	2.2.1 Structure and physiological functions of ATP	Comprehension
	2.2.2 ATP storage and energy release	Comprehension
	2.2.3 ATP content as a reflection of the direction of metabolism	Comprehension
	2.2.4 Sites of the various stages of cellular respiration	Memorisation
	2.2.5 Structure of mitochondria and their functions in aerobic respiration	Comprehension
	2.2.6 Chemical changes and energy transfer at various stages of aerobic respiration	Comprehension
	2.2.7 Process and significance of anaerobic respiration	Comprehension
	2.2.8 Relationship and differences between anaerobic and anaerobic respiration	Comprehension

Subject Matter	Knowledge Content	Cognitive Demand
2.3 Gaseous Exchange	2.3.1 Surface characteristics of respiration	Comprehension
	2.3.2 Gaseous exchange in insects and fishes	Comprehension
	2.3.3 Structure and functions of human respiratory system	Comprehension
	2.3.4 Gaseous exchange in the human body	Comprehension
	2.3.5 Alveoli and gaseous exchange	Comprehension
	2.3.6 Gaseous exchange in plants	Comprehension
2.4 Transport of Nutrients in Plants	2.4.1 Structure, functions and adaptation of the transport system	Comprehension
	2.4.2 Absorption and transport of water and inorganic salts by the roots	Comprehension
	2.4.3 Transport mechanism to send water from the roots to the leaves	Comprehension
	2.4.4 Transport of organic nutrients	Comprehension
	2.4.5 Concept and significance of evapotranspiration	Comprehension
	2.4.6 Environmental factors affecting evapotranspiration	Comprehension
	2.4.7 Control mechanisms on stomatal opening	Comprehension
2.5 Transport of Nutrients in Animals	2.5.1 Types of circulatory system	Comprehension
	2.5.2 Cardiovascular system in man	Comprehension
	2.5.3 Structure and functions of the heart	Comprehension
	2.5.4 Cardiac cycle	Comprehension
	2.5.5 Structure and functions of blood vessels	Comprehension
	2.5.6 Composition of blood and functions of each constituent	Comprehension
	2.5.7 Transport of oxygen and carbon dioxide by blood	Comprehension
	2.5.8 Composition and functions of the lymphatic system	Comprehension
	2.5.9 Transport of materials by the lymphatic system	Comprehension
	2.5.10 Driving forces behind the cardiovascular and lymphatic systems	Comprehension
	2.5.11 Relationship between blood, lymph and tissue fluid	Comprehension
2.6 Defense Mechanisms	2.6.1 Significance of specific and non-specific immunity	Comprehension
	2.6.2 Concept of pathogen, antigen and antibody	Comprehension
	2.6.3 Concept and significance of natural immunity and acquired immunity	Application
	2.6.4 Concept, features and significance of passive immunity and active immunity	Application
	2.6.5 Immune disorders (allergy, AIDS and rejection)	Comprehension

3. Homeostasis of Life

Subject Matter	Knowledge Content	Cognitive Demand
3.1 Internal Environment and Homeostasis	3.1.1 Significance of homeostasis	Comprehension
	3.1.2 Effects of negative feedback on homeostasis	Comprehension
	3.1.3 Microscopic structure and functions of the kidney	Comprehension
	3.1.4 Significance of urine formation on osmoregulation	Comprehension
	3.1.5 Ultrafiltration and reabsorption in nephrons	Comprehension
	3.1.6 Regulation of anti-diuretic hormone (ADH)	Comprehension
	3.1.7 Significance of glucose regulation	Comprehension
	3.1.8 Significance of body temperature regulation	Comprehension
3.2 Sensory Organs	3.2.1 Types of sensory organ	Memorisation
	3.2.2 Structure and visual relationship of the retina	Comprehension
	3.2.3 Structure and audio relationship of cochlea	Comprehension
	3.2.4 Structure and the sense of balancing of the vestibule and semicircular canals	Comprehension
	3.2.5 Organ of smell	Comprehension
	3.2.6 Organ of taste	Comprehension

Subject Matter	Knowledge Content	Cognitive Demand
3.4 Endocrine System and Coordination	3.4.1 Definition and significance of hormone	Comprehension
	3.4.2 Physiological functions of the endocrine system	Comprehension
	3.4.3 Fregulation of hormonal secretion	Application
	3.4.4 Comparing the nervous system and the endocrine system	Comprehension
3.5 Support and Movement	3.5.1 Composition and types of bone	Comprehension
	3.5.2 Structure of the long bone	Comprehension
	3.5.3 Physiological characteristics of the human skeleton	Comprehension
	3.5.4 Structure of the skeletal muscle	
	3.5.5 Contraction principle of the skeletal muscle	Comprehension
	3.5.6 Directional and non-directional movements of plants	Comprehension
		Application

4. Continuation of Life

Subject Matter	Knowledge Content	Cognitive Demand
4.1 Cell Division	4.1.1 Characteristics of mitosis and meiosis	Application
	4.1.2 Comparing mitosis and meiosis	Comprehension
	4.1.3 Significance of cell division	Comprehension
4.2 Reproduction	4.2.1 Types and significance of sexual and asexual reproduction	Comprehension
	4.2.2 Concept of alternation of generations in plants	Comprehension
	4.2.3 Life history of moss, fern and angiosperm	Comprehension
	4.2.4 Structure and functions of the human reproductive systems	Comprehension
	4.2.5 Formation and structures of the sperm and the ovum	Comprehension
	4.2.6 Relationship between menstrual cycle and hormones	Application
	4.2.7 Fertilization and embryo development	Comprehension
4.3 Growth and Development	4.3.1 Concept and characteristics of the growth curve	Comprehension
	4.3.2 Growth and development of shoots and root tips in plants	Comprehension
	4.3.3 Secondary growth of stems	Comprehension
	4.3.4 Physiological functions of plant hormones	Application
	4.3.5 Effects of photofrin and photoperiod on plant growth	Comprehension
4.4 Heredity and Mutation	4.4.1 Experiments that confirmed DNA as the genetic material	Comprehension
	4.4.2 Structure of DNA	Comprehension
	4.4.3 Semi-conservative replication of DNA molecules	Comprehension
	4.4.4 Structure and types of RNA	Comprehension
	4.4.5 Transcription of genetic information	Application
	4.4.6 Concept of and related terms in genetics	Comprehension
	4.4.7 Law of separation	Application
	4.4.8 Incomplete dominance and co-dominance	Application
	4.4.9 Law of free combination	Application
	4.4.10 Gene chain and gene swapping	Application
	4.4.11 Sex determination and sex-linked heredity	Application
	4.4.12 Genetic variation caused by genetic mutation, recombination and chromosomal mutation	Analysis
	4.4.13 DNA recombination technique	Comprehension
	4.4.14 Types and characteristics of cell engineering	Comprehension

5. Ecology and Biodiversity

Subject Matter	Knowledge Content	Cognitive Demand
5.1 Organisms and the Environment	5.1.1 Concept of and special terms in ecology	Comprehension
	5.1.2 Non-biological factors affecting organisms	Comprehension
	5.1.3 Relationship between organisms in an ecosystem	Comprehension
	5.1.4 Organisms' influence on and adaptation to the environment	Comprehension
	5.1.5 Population density and population growth	Comprehension
	5.1.6 Structure and succession of biomes	Comprehension
	5.1.7 Formation of an ecosystem	Comprehension
	5.1.8 Energy flow in an ecosystem	Analysis
	5.1.9 Material cycle of an ecosystem	Application
	5.1.10 Concept and significance of ecological balance	Comprehension
	5.1.11 Impact of human activities on ecosystems	Analysis
	5.1.12 Methods and significance of environmental protection	Application
5.2 Evolution	5.2.1 Theory of evolution	Comprehension
	5.2.2 Gist on natural selection (genetic mutation, over-breeding, fighting for survival, survival of the fittest)	Application
	5.2.3 Causes of evolution	Comprehension
	5.2.4 Proof of evolution	Comprehension
	5.2.5 Evolution process and its characteristics	Comprehension
	5.2.6 Taxonomy and binomial names	Comprehension
	5.2.7 Dichotomous table	Application
5.3 Microorganisms	5.3.1 Structure, types, characteristics and breeding of viruses	Comprehension
	5.3.2 Structure, types, nutrition, growth and breeding of bacteria	Comprehension
	5.3.3 Structure, nutrition and breeding of fungi	Comprehension
	5.3.4 Impact of microorganisms on man and the environment	Comprehension

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
BOOKKEEPING AND ACCOUNTS SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Bookkeeping And Accounts examination aims to enable students to acquire and develop the knowledge and ability in the subject. The results of the UEC Senior Bookkeeping And Accounts examination may serve as a yardstick for students to decide on going for higher studies or looking for a working career.

Ⅱ Exam Objectives

1. Fundamental Knowledge in Accounting
    1.1 Understanding accounting concepts, principles and rules
    1.2 Understanding books of original entry and General Ledger
    1.3 Understanding business entities

2. Basic Skills and Methods in Accounting
    2.1 Doing accounting calculations
    2.2 Making accounting entries

3. Integrated Applied Ability in Accounting
    3.1 Preparing corrected reports
    3.2 Preparing financial statements for business entities and different operating models
    3.3 Preparing financial statements after changes in partnership and business combinations

Ⅲ Structure of Exam Paper

The exam is made up of 2 papers:
Paper 1: Multiple-choice Questions (20%) …………………………………..….….….….….….. Duration: 30 minutes
         Answer all 20 questions.

Paper 2: Subjective Questions (80%)………………………………….….….….….…..…… Duration: 3 hours
         Section A: Compulsory Questions (60%)
                  Answer all 3 questions.
                  (Covering ledgers, books of original entry, end-of-period adjustments, recording & preparation of
                   financial statements for business entities and business combinations)
         Section B: Elective Questions (20%)
                  Answer any 1 question out of 3.
                  (Covering recording & preparation of financial statements for different operating models)

IV Exam Content

1. Ledgers

Subject Matter	Knowledge Content and Cognitive Demand
1.1 Introduction to Bookkeeping	1.1.1 Understanding evolution and development of accounting 1.1.2 Understanding bookkeeping and accounting 1.1.3 Understanding usages of accounting information for different users 1.1.4 Understanding steps in accounting cycle
1.2 Double-entry Bookkeeping and General Ledger	1.2.1 Understanding accounting equation 1.2.2 Understanding impact of transactions on accounting equation 1.2.3 Understanding types of Ledger accounts: ① Personal accounts: －Accounts receivable (i.e. Trade debtors' accounts) －Accounts payable (i.e. Trade creditors' accounts) ② Impersonal accounts: －Real accounts －Nominal accounts 1.2.4 Understanding functions of General Ledger 1.2.5 Applying rules of debit and credit and using source documents to record business transactions
1.3 Trial Balance	1.3.1 Understanding functions and limitations of Trial Balance 1.3.2 Preparing Trial Balance
1.4 Control Accounts	1.4.1 Understanding usage of Control accounts 1.4.2 Understanding types of Ledgers ① General Ledger ② Sales Ledger/Accounts Receivable Ledger ③ Purchases Ledger/Accounts Payable Ledger 1.4.3 Understanding Control accounts and subsidiary Ledgers 1.4.4 Understanding causes of minority balances 1.4.5 Preparing Sales and Purchases Ledger Control accounts, including contra entry 1.4.6 Presenting related items of Control accounts in Statement Of Financial Position

2. Books of Original Entry/Journals

Subject Matter	Knowledge Content and Cognitive Demand
2.1 Purchases and Returns Day Books	2.1.1 Understanding functions of Purchases and Returns Day Books 2.1.2 Preparing Purchases and Returns Day Books, including posting
2.2 Sales and Returns Day Books	2.2.1 Understanding functions of Sales and Returns Day Books 2.2.2 Preparing Sales and Returns Day Books, including posting
2.3 General Journal	2.3.1 Understanding functions of General Journal 2.3.2 Preparing General Journal, including posting: －Opening, adjusting, correcting, closing and other entries
2.4 Cash Book	2.4.1 Understanding functions of Cash Book 2.4.2 Understanding trade discounts and cash discounts 2.4.3 Understanding discounts allowed and discounts received 2.4.4 Preparing two-column/three-column Cash Book, including contra entry and posting
2.5 Petty Cash Book	2.5.1 Understanding functions of Petty Cash Book 2.5.2 Preparing Petty Cash Book, including posting: －Imprest system

3. End-of-period Adjustments

Subject Matter	Knowledge Content and Cognitive Demand
3.1 Bad debts, Bad Debts Recovered and Allowance for Doubtful Debts	3.1.1 Understanding causes of bad debts and bad debts recovered 3.1.2 Understanding reasons for charging allowance for doubtful debts 3.1.3 Understanding bad debts and allowance for doubtful debts 3.1.4 Understanding methods of estimating doubtful debts 3.1.5 Making entries for bad debts, bad debts recovered (in the same/different accounting period of writing off bad debts) and allowance for doubtful debts 3.1.6 Presenting related items of accounts receivable, bad debts, bad debts recovered and allowance for doubtful debts in financial statements

3.2 Non-current Assets and Depreciation	3.2.1 Understanding meaning, types and cost of non-current assets
	3.2.2 Understanding causes and charging of depreciation/depletion/amortisation
	3.2.3 Understanding factors and methods of calculating depreciation:
	  ① Straight line method
	  ② Reducing balance method
	3.2.4 Preparing entries for depreciation, whole year/fractional period:
	  ① Accumulated Depreciation account is not opened
	  ② Accumulated Depreciation account is opened
	  ③ Depreciation account is not opened
	3.2.5 Making entries for non-current assets and depreciation on acquisition, disposal and trade-in
	3.2.6 Presenting related items of non-current assets, depreciation and accumulated depreciation in financial statements

3.3 Accruals and Prepayments	3.3.1 Understanding meaning and purpose of end-of-period adjustments
	3.3.2 Understanding accruals and prepayments:
	  ① Accrued expenses and prepaid expenses
	  ② Accrued income and unearned income
	3.3.3 Making the following entries:
	  ① Accruals and prepayments
	  ② Inventory and drawings
	3.3.4 Presenting related items of end-of-period adjustments in financial statements
	3.3.5 Preparing worksheet

3.4 Correction of Errors	3.4.1 Understanding causes and types of accounting errors:
	  ① Errors not affecting Trial Balance agreement
	  ② Errors affecting Trial Balance agreement
	3.4.2 Making correction entries, including Suspense account
	3.4.3 Analysing impact of accounting errors on the following items:
	  ① Statement Of Financial Position items
	  ② Income Statement items
	3.4.4 Preparing Statement Of Corrected Net Profit/Net Loss and Revised Statement Of Financial Position

3.5 Incomplete Records	3.5.1 Understanding causes and weaknesses of incomplete records
	3.5.2 From incomplete records:
	  ① Determining net profit/net loss:
	    － Capital comparison method：
	      Deducing net profit/net loss, and preparing Statement Of Affairs
	    － Analysis of records method：
	      Deducing sales, purchases, other income and expenses, and preparing Income Statement
	  ② Preparing financial statements, including end-of-period adjustments
	  ③ Computing inventory value and loss after incidence
	3.5.3 Converting margin and mark-up

Subject Matter	Knowledge Content and Cognitive Demand

3.6 Bank Reconciliation	3.6.1 Understanding causes of difference between Cash Book bank balance and Bank Statement balance
	3.6.2 Understanding functions of Bank Reconciliation Statement
	3.6.3 Making adjustment for Cash Book bank balance
	3.6.4 Preparing Bank Reconciliation Statement, including bank overdraft situation:
	  ① Starting with Cash Book bank balance (before/after adjustment)
	  ② Starting with Bank Statement balance

4. Recording & Preparation of Financial Statements for Business Entities

Subject Matter	Knowledge Content and Cognitive Demand

4.1 Sole Proprietorship	4.1.1 Financial statements
	  ① Understanding Income Statement and Statement Of Financial Position
	  ② Understanding balancing off and closing off accounts
	  ③ Understanding items in Income Statement:
	    － Net sales, cost of sales, other income and expenses
	  ④ Understanding items in Statement Of Financial Position:
	    － Non-current assets, current assets, non-current liabilities, current liabilities and owner's equity
	  ⑤ Preparing financial statements in T/horizontal format or vertical/statement format, including end-of-period adjustments:
	    － Income Statement/Statement Of Profit Or Loss
	    － Statement Of Financial Position

4.2 Partnership	4.2.1 Financial statements
	  ① Understanding characteristics of partnership
	  ② Understanding partnership agreement and partnership deed
	  ③ Making entries for formation of new partnership
	  ④ Preparing Statement Of Financial Position for newly formed partnership
	  ⑤ Making entries for partners' drawings and salaries, interest on capital and drawings
	  ⑥ Making entries for loan from partner and interest on loan
	  ⑦ Preparing Capital and Current accounts in columnar form
	  ⑧ Preparing Profit And Loss Appropriation account
	  ⑨ Preparing financial statements in T/horizontal format or vertical/statement format:
	    － Income Statement/Statement Of Profit Or Loss
	    － Statement Of Financial Position
	4.2.2 Change in partnership
	  ① Understanding factors affecting value of goodwill
	  ② Calculating goodwill
	  ③ Making entries for change in profit and loss sharing ratio, withdrawal and admission, including goodwill adjustment and assets revaluation
	  ④ Preparing Statement Of Financial Position after changes
	4.2.3 Dissolution in partnership
	  ① Understanding reasons, meaning and procedures of dissolution
	  ② Understanding Garner vs Murray rule
	  ③ Making entries for dissolution, including Garner vs Murray rule

Subject Matter	Knowledge Content and Cognitive Demand

4.3 Limited Company	4.3.1 Financial statements
	  ① Understanding characteristics of limited companies
	  ② Understanding main content and outline of Memorandum and Articles of Association
	  ③ Understanding authorised, issued, called-up, paid-up share capital and calls in arrears
	  ④ Understanding main types of shares/loan notes
	  ⑤ Understanding shares and loan notes
	  ⑥ Understanding interim and final dividends
	  ⑦ Preparing financial statements in vertical/statement format, taking preferred share capital as irredeemable and non-cumulative share capital, and taking its dividends as paid in full:
	    － Income Statement/Statement Of Profit Or Loss
	    － Statement Of Changes In Equity
	    － Statement Of Financial Position
	4.3.2 Issue of shares/loan notes
	  ① Understanding shares issued at par and at premium
	  ② Understanding loan notes issued at par and at discount
	  ③ Understanding causes of oversubscription and undersubscription of shares
	  ④ Understanding procedures of issuing shares/loan notes
	  ⑤ Making entries for shares/loan notes, excluding calls in arrears, forfeiture and reissue of shares:
	    － Payable in full on application
	    － Payable by instalments
	  ⑥ Presenting related items of shares/loan notes in Statement Of Financial Position

5. Business Combinations

Subject Matter	Knowledge Content and Cognitive Demand

5.1 Amalgamation	5.1.1 Understanding concept of amalgamation
	5.1.2 Making the following entries:
	  ① Amalgamation of individual and sole proprietorship
	  ② Amalgamation of sole proprietorship and partnership
	  ③ Amalgamation of two sole proprietorships/two partnerships
	5.1.3 Preparing Statement Of Financial Position after amalgamation

5.2 Business Purchase	5.2.1 Understanding concept of business purchase
	5.2.2 Understanding goodwill/gain on bargain purchase
	5.2.3 Making the following entries in purchaser's books only; if seller is a partnership, both parties' books are included:
	  ① Takeover of sole proprietorship by individual/sole proprietorship
	  ② Takeover of sole proprietorship/partnership by partnership
	  ③ Takeover of sole proprietorship/partnership by limited company
	5.2.4 Preparing Statement Of Financial Position after business purchase

6. Recording & Preparation of Financial Statements for Different Operating Models

Subject Matter	Knowledge Content and Cognitive Demand
6.1 Manufacturing	6.1.1 Understanding trading and manufacturing business 6.1.2 Understanding direct and indirect manufacturing costs 6.1.3 Understanding production cost, work-in-progress and production cost of finished goods 6.1.4 Understanding trading profit and manufacturing profit 6.1.5 Preparing financial statements, excluding unrealised manufacturing profit： 　① Manufacturing account, work-in-progress valued at production cost/prime cost 　② Income Statement 　③ Statement Of Financial Position
6.2 Non-profit-making Organisation	6.2.1 Understanding profit-making and non-profit-making organisation 6.2.2 Understanding Receipts And Payments Account and Income And Expenditure Account 6.2.3 Making entries for subscription, including accruals and prepayments 6.2.4 Making entries for entrance fees, life membership fees And donation/legacy 6.2.5 Preparing financial statements: 　① Receipts And Payments Account 　② Income And Expenditure Account, including Trading Account 　③ Statement Of Financial Position 6.2.6 Understanding impact of the following items on financial statements: 　① Revenue expenditures and capital expenditures 　② Revenue receipts and capital receipts
6.3 Department	6.3.1 Understanding purpose of setting up departmental accounts 6.3.2 Understanding allocation of expenses for each department 6.3.3 Making entries for inter-departmental transfer of goods 6.3.4 Preparing departmental Income Statement (Gross profit basis)
6.4 Consignment	6.4.1 Understanding characteristics of consignments 6.4.2 Understanding rights and obligations of consignor and the consignee 6.4.3 Understanding sales commission and del credere commission 6.4.4 Understanding content and usage of account sales 6.4.5 Making entries in books of consignor and consignee, including closing inventory on consignment
6.5 Joint Venture	6.5.1 Understanding characteristics of joint venture 6.5.2 Making entries for where no separate set of books is kept, excluding inventory on hand: 　① Preparing Joint Venture With XX account in books of each venturer 　② Preparing Memorandum Joint Venture account
6.6 Hire Purchase	6.6.1 Understanding characteristics of hire purchase 6.6.2 Understanding rights and obligations of both buyer and seller 6.6.3 Understanding cash price and hire purchase price 6.6.4 Understanding apportionment methods of hire purchase interest: 　① Straight line method 　② Reducing balance method 6.6.5 Making entries in buyer's books, including termination of agreement： 　① Hire Purchase Interest account method 　② Hire Purchase Interest Suspense account method 6.6.6 Presenting related items of hire purchase in financial statements

Subject Matter	Knowledge Content and Cognitive Demand
6.7 Branch	6.7.1 Centralised system - Books kept by head office ① Understanding reasons for setting up centralised system ② Making entries for goods sent to branch at cost ③ Making entries for goods sent to branch at cost plus profit： 　－ Adjustment account method 　－ Memorandum columns method/Two-column branch inventory account method 6.7.2 Decentralised system - Books kept by branch ① Understanding reasons for setting up decentralised system ② Understanding items in transit: 　－ Cash in transit 　－ Goods in transit ③ Making entries in books of head office and branch： 　－ Goods sent to branch at cost 　－ Goods sent to branch at cost plus profit ④ Preparing Head Office and Branch Current accounts, including items in transit ⑤ Making end-of-period adjustments and closing entries in books of head office and branch ⑥ Preparing financial statements in columnar form (columns for 'Head Office', 'Branch' and 'Combined'), including: 　－ Cash in transit 　－ Goods in transit, at cost 　－ Unrealised profit on branch closing inventory
6.8 Bills of Exchange	6.8.1 Understanding purpose and transaction flow of bills of exchange 6.8.2 Understanding treatment of accepted bills of exchange: Payment on maturity, discounting, negotiating, retiring, dishonour and renewal 6.8.3 Making entries for bills receivable and payable, excluding days of grace

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
BUSINESS STUDIES SYLLABUS

Ⅰ Syllabus Description

The Unified Examination of Business Studies aims to assess senior middle three student's level of knowledge and skills after completing a three year study of Business Studies. The assessment results can be used as a reference for students in the pursuit of further studies or employment.

Ⅱ Assessment Objectives

1. Fundamental Knowledge
   1.1 Identifying knowledge of terms, facts and concepts commonly applied to or used in the business activities
   1.2 Illustrating business concepts, principles and procedures with examples
   1.3 Demonstrating the ability to relate business concepts, principles with examples, and (or) explain the reasons
   1.4 Demonstrating the similarities and differences of the various business concepts and principles

2. Basic Skills
   2.1 Demonstrating the ability to make computations according to business scenarios
   2.2 Demonstrating the ability to apply related procedures to business scenarios

3. Integrated Application
   3.1 Demonstrating the ability to interpret specific scenarios with business concepts and principles
   3.2 Demonstrating the ability to explain the cause and effect of business phenomena with business concepts and principles
   3.3 Demonstrating the ability to distinguish and analyse business phenomena with business concepts, principles and procedures
   3.4 Demonstrating the ability to propose solutions to a business dilemma with business concepts, principles and procedures

Ⅲ Structure of Exam Papers

This exam is made up of two papers:
Paper 1: Multiple-choice Questions (30%)……………………………………….……………….… Duration: 40 mins
                Answer all the 30 questions.
Paper 2: Subjective Questions (70%)…………………………………………………………………… Duration: 2 hrs
                Section A: Compulsory Questions (40%)
                      Answer all 4 questions.
                Section B: Elective Questions (15%)
                      Answer 1 question out of 2.
                Section C: Case Study (15%)
                      Answer the only question.

1. Production and Business Activities

Topic	Content Knowledge	Cognitive Demand
1.1 Introduction to Business	1.1.1 Definition of direct production, indirect production, visible product, invisible product, business and profit	Remembering, Understanding
	1.1.2 Problems with barter trade	Remembering, Understanding
	1.1.3 Branches of business	Remembering
	1.1.4 Trade and aids to trade	Understanding
	1.1.5 Importance of business to individuals, nations and the world	Remembering, Understanding
	1.1.6 Factors for evaluating business environment	Understanding
	1.1.7 Business development trends	Understanding
1.2 Production	1.2.1 Definition of production	Remembering
	1.2.2 Types of utility	Understanding
	1.2.3 Types of production	Understanding
	1.2.4 Factors of production	Understanding
	1.2.5 Relationship between specialisation and economies of scale	Understanding
	1.2.6 Advantages and disadvantages of specialisation	Remembering, Understanding
	1.2.7 Types of specialisation	Understanding
1.3 Distribution --Wholesaling	1.3.1 Distribution channels	Understanding
	1.3.2 Advantages and disadvantages of direct sales and through middlemen	Understanding
	1.3.3 Roles of middlemen	Understanding
	1.3.4 Factors affecting the choice of distribution channels	Understanding, Analysing, Evaluation
	1.3.5 Characteristics of wholesaling	Understanding
	1.3.6 Functions of wholesalers	Understanding
	1.3.7 Challenges in wholesaling and its development trends	Understanding
1.4 Distribution --Retailing	1.4.1 Functions of retailers	Understanding
	1.4.2 Characteristics of various retailers	Understanding
	1.4.3 Definition of added value	Remembering
	1.4.4 Adding value to goods and its benefits	Understanding, Evaluation
	1.4.5 Characteristics of chain store operation	Remembering, Understanding
	1.4.6 Regular chain and franchise chain	Understanding
	1.4.7 Advantages and disadvantages of online retailing	Understanding, Analysing, Evaluation
1.5 Documents Used in Domestic Trade	1.5.1 Significance of trade documents	Remembering
	1.5.2 Types of domestic trade document and their uses	Understanding, Application
	1.5.3 Differences between trade discount and cash discount and their computations	Understanding, Application
1.6 Modes of Domestic Payment	1.6.1 Instant payment, prepayment and deferred payment	Understanding
	1.6.2 Credit purchase and hire purchase	Understanding
	1.6.3 Cash payment	Understanding
	1.6.4 Parties in cheque payment	Understanding
	1.6.5 Advantages and disadvantages of cheque payment	Understanding
	1.6.6 Issuance and usage of cheque	Understanding
	1.6.7 Reasons for dishonoured cheque by bank	Understanding
	1.6.8 Banker's cheque and bank draft	Understanding
	1.6.9 Types and characteristics of payment by card	Understanding
	1.6.10 Methods of fund transfer	Understanding
	1.6.11 Characteristics of telegraphic transfer	Understanding
	1.6.12 Postal order and money order	Understanding
	1.6.13 Various choices of payment	Analysing, Evaluation

Topic	Content Knowledge	Cognitive Demand
1.7 International trade	1.7.1 Types of international trade	Understanding
	1.7.2 Importance of international trade	Understanding
	1.7.3 Characteristics of international trade	Understanding
	1.7.4 Free trade policy and protective trade policy	Understanding
	1.7.5 International commercial terms: FOB, CIF, cost and freight	Remembering, Understanding
	1.7.6 International trade Documents used in international trade	Understanding
	1.7.7 Modes of international trade payment	Remembering, Understanding, Analysing, Evaluation
	1.7.8 Procedures of international trade	Application

2. Aids to Trade and Financial Market

Topic	Content Knowledge	Cognitive Demand
2.1 Warehousing	2.1.1 Functions of warehouse to enterprise	Understanding
	2.1.2 Types and characteristics of warehouse	Understanding, Analysing
	2.1.3 Bonded warehouse and ordinary warehouse	Remembering, Understanding
	2.1.4 Importance of bonded warehouses to government and enterprise	Understanding
	2.1.5 Inventory management	Remembering, Understanding
2.2 Transportation	2.2.1 Importance of transportation	Understanding
	2.2.2 Characteristics of various transportation modes	Understanding
	2.2.3 Characteristics of courier service	Understanding
	2.2.4 Characteristics of container transportation	Understanding
	2.2.5 Factors influencing the selection of transportation modes	Understanding, Analysing, , Evaluation
2.3 Communication	2.3.1 Importance of communication	Understanding
	2.3.2 Mass communication services	Understanding
	2.3.3 Characteristics of various postal services	Understanding
	2.3.4 Characteristics of various telecommunication services	Understanding
	2.3.5 Factors affecting the choice of communication services	Understanding, Analysing, Evaluation
2.4 Advertising	2.4.1 Definition of advertisement	Remembering
	2.4.2 Importance of advertising to enterprises and consumers	Understanding
	2.4.3 Types of advertising	Understanding, Application
	2.4.4 Types and characteristics of advertising media	Understanding
	2.4.5 Factors affecting the choice of advertising media	Understanding, Analysing, Evaluation
2.5 Insurance	2.5.1 Risk, insurance and pooling of risk	Remembering
	2.5.2 Definition of insurable risks and non-insurable risks	Understanding
	2.5.3 Requirements of insurable risk	Remembering, Understanding
	2.5.4 Importance of insurance	Understanding
	2.5.5 Parties in an insurance contract	Understanding
	2.5.6 Principles of insurance	Understanding, Application, Analysing
	2.5.7 Types of life insurance and general insurance	Understanding
	2.5.8 Social Security Organisation	Remembering, Understanding
	2.5.9 Procedures of insurance claim	Application

Topic	Content Knowledge	Cognitive Demand
2.6 Banking and Finance	2.6.1 Malaysian financial system	Remembering
	2.6.2 Functions of the Central Bank	Remembering, Understanding
	2.6.3 Conventional banking system and Islamic banking system	Understanding
	2.6.4 Characteristics of savings account, fixed deposit account and current account	Understanding
	2.6.5 Characteristics of overdraft, term loan and bill discounting	Understanding
	2.6.6 Items of verification for bank loan application	Understanding, Analysing
	2.6.7 Functions of commercial banks	Understanding
	2.6.8 Services provided by investment banks	Understanding
	2.6.9 Employees Provident Fund	Remembering, Understanding
	2.6.10 Unit trust management company	Remembering, Understanding
	2.6.11 Characteristics of unit trust investment	Remembering, Understanding
	2.6.12 Choices of bank services	Analysing, Evaluation
2.7 Financial Market	2.7.1 Definition and types of financial market	Understanding
	2.7.2 Foreign exchange and exchange rate	Understanding
	2.7.3 Dividend, bonus shares, rights issue, blue chip	Remembering, Understanding
	2.7.4 Preference shares and ordinary shares	Understanding
	2.7.5 Fundamental factors that influence the share price of company	Understanding, Analysing
	2.7.6 Advantages and disadvantages of shares investment	Understanding, Analysing
	2.7.7 Shares, corporate bond and warrant	Remembering, Understanding, Analysing
	2.7.8 Functions of stock exchange	Remembering, Understanding
	2.7.9 Stockbroking company	Understanding
	2.7.10 Definition and functions of stock index	Understanding
	2.7.11 Bull market and bear market	Remembering, Understanding
	2.7.12 Definition of futures	Remembering, Understanding
	2.7.13 Futures transaction and spot trading	Remembering, Understanding

3. Enterprise Organization and Regulations

Topic	Content Knowledge	Cognitive Demand
3.1 Enterprise Organisation	3.1.1 Utilizing enterprise profits	Remembering, Understanding
	3.1.2 Characteristics, advantages and disadvantages of sole proprietorship	Understanding, Analysing, Evaluation
	3.1.3 Characteristics, advantages and disadvantages of partnership	Understanding, Analysing, Evaluation
	3.1.4 Reasons and procedures of dissolving a partnership	Understanding, Application
	3.1.5 Characteristics, advantages and disadvantages of limited liability partnership	Understanding, Analysing, Evaluation
	3.1.6 Characteristics of limited company	Remembering
	3.1.7 Characteristics, advantages and disadvantages of private limited company	Understanding, Analysing, Evaluation
	3.1.8 Characteristics, advantages and disadvantages of public limited company	Understanding, Analysing, Evaluation
	3.1.9 Characteristics, advantages and disadvantages of multinational company	Understanding
	3.1.10 Characteristics, advantages and disadvantages of holding company	Understanding
	3.1.11 Support from chamber of commerce and trade association to enterprises	Understanding
	3.1.12 Characteristics, advantages and disadvantages of public enterprise	Understanding
	3.1.13 Reasons, pros and cons of privatized public enterprise	Understanding, Analysing

Topic	Content Knowledge	Cognitive Demand
3.2 Small and Medium Enterprise/SME)	3.2.1 Definition of SME	Remembering
	3.2.2 Characteristics of SME	Understanding
	3.2.3 Importance of SME	Understanding, Analysing
	3.2.4 Start-up methods of SME	Understanding, Evaluation
	3.2.5 Key factors in SME start-up	Understanding
	3.2.6 Challenges faced by SME	Understanding, Evaluation
	3.2.7 Business trends of SME	Understanding
3.3 Taxation	3.3.1 Sources and allocation of funds in financial budget	Understanding
	3.3.2 Relationship between surplus/deficit budget and national economic development	Understanding
	3.3.3 Direct and indirect taxes	Understanding
	3.3.4 Computation of personal income tax	Application
	3.3.5 Customs duty, excise duty, sales and services tax	Understanding
3.4 Corporate Ethics	3.4.1 Definition of corporate ethics	Remembering
	3.4.2 Definition of corporate social responsibility	Remembering
	3.4.3 Corporate responsibility to stakeholders	Understanding, Analysing
	3.4.4 Rights and responsibilities of consumers	Understanding, Analysing, Evaluation
	3.4.5 Consumer support units: consumer association, ministry of domestic trade and consumer affairs	Understanding
	3.4.6 Corporate responsibility to environmental protection	Understanding

4. Introduction to Management

Topic	Content Knowledge	Cognitive Demand
4.1 Human Resource Management	4.1.1 Definition and task of human resource management	Remembering
	4.1.2 Human resource planning	Understanding
	4.1.3 Recruitment and selection	Understanding
	4.1.4 Training and development	Understanding
	4.1.5 Effects of salary and welfare on enterprises	Understanding, Analysing, Evaluation
	4.1.6 Design principles of salary scheme	Remembering, Understanding
	4.1.7 Effects of performance appraisal, reward and punishment on enterprises and employees	Understanding, Analysing, Evaluation
	4.1.8 Effects of occupational safety and health on enterprises	Understanding
	4.1.9 Labour relations	Understanding
4.2 Marketing Management	4.2.1 Sales and marketing	Remembering, Understanding
	4.2.2 Importance of marketing management to enterprises	Understanding
	4.2.3 Factors affecting consumer buying behaviour	Understanding
	4.2.4 Target marketing	Understanding, Application
	4.2.5 Marketing mix	Remembering, Understanding, Analysing, Evaluation
	4.2.6 Relationship between product life cycle and marketing activities	Understanding, Analysing, Evaluation
	4.2.7 Definition of branding	Remembering
	4.2.8 Reasons to focus on branding and packaging	Remembering, Understanding
	4.2.9 Pricing strategy	Understanding
	4.2.10 Distribution channels	Understanding
	4.2.11 Methods of promotion	Understanding, Analysing, Evaluation
	4.2.12 Internet marketing	Understanding

Topic	Content Knowledge	Cognitive Demand
4.3 Financial Management	4.3.1 Definition of financial management	Remembering
	4.3.2 Definition of financial planning and financial control	Remembering
	4.3.3 Importance of financial management to enterprises	Understanding
	4.3.4 Responsibilities of financial manager	Remembering, Understanding
	4.3.5 Computation of corporate profitability ratios, liquidity ratios, capital structure ratios (formulae attached)	Application
	4.3.6 Using financial statements and financial ratios to evaluate financial standing and operation of an enterprise	Understanding, Analysing
	4.3.7 Break-even analysis	Application, Analysing
4.4 Personal Financial Management	4.4.1 Basic principles of personal financial management	Understanding
	4.4.2 Steps in personal financial planning	Understanding
	4.4.3 Importance of preparing a personal financial budget	Understanding
	4.4.4 Relationship between simple interest/compound interest and time value of money	Understanding
	4.4.5 Computing future value and present value for investment decisions	Understanding, Application, Analysing
	4.4.6 Relationship between risk and return on investment	Understanding

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
CHEMISTRY SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Chemistry examination aims to assess students:

- the knowledge and the levels of ability in the subject of chemistry

The results of the UEC Senior Chemistry examination may serve as a yardstick for students to decide on pursuing further education or to serve as a reference for career direction.

Ⅱ Exam Objectives

1. Fundamental Knowledge
    1.1 Demonstrating knowledge of chemical terms, chemical symbols, chemical measurements and units
    1.2 Demonstrating awareness and understanding of facts, principles, phenomena, concepts, models, definitions, theories and laws in chemistry

2. Fundamental Skills
    2.1 Demonstrating the ability to conduct calculations based on fundamental chemistry knowledge
    2.2 Demonstrating the ability to obtain information and integrate it with existing knowledge from scripts, pictures, charts, experimental phenomena and data

3. Comprehensive Ability / Integrated Competence
    3.1 Demonstrating the ability to analyse, judge and deduce by utilizing chemistry knowledge
    3.2 Demonstrating the ability to analyse, judge and arrive at a logical conclusion with experimental data and phenomena

Ⅲ Structure of Exam Paper

This exam paper is made up of 2 parts:

Paper 1: Objective (40%)……………………………………………………………………… Duration: 1 hr

   Answer all 40 questions.

Paper 2: Subjective (60%)……………………………………………………………………… Duration: 1 hr 30 mins

   Section A: Compulsory Questions (24%)

     Answer all 6 questions.

   Section B: Optional Questions (36%)

     Answer 3 questions out of 6.

Ⅳ Exam Content

1. Physical Chemistry

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
1.1 Matter	1.1.1 Element	1.1.1.1 Concept of element	Memorisation
	1.1.2 Matter	1.1.2.1 Classification of matter	Comprehension
		1.1.2.2 Three states of matter	Comprehension
		1.1.2.3 Physical property and chemical property	Comprehension
1.2 Atom and Molecule	1.2.1 AtomicTheory and Molecular Theory	1.2.1.1 Dalton's atomic theory	Memorisation
		1.2.1.2 Avogadro's molecular theory	Memorisation
	1.2.2 Composition of Matter and the Fundamental Laws of Chemical Reactions	1.2.2.1 The law of conservation of mass	Application
		1.2.2.2 The law of definite proportions	Application
		1.2.2.3 The law of multiple proportions	Application
	1.2.3 Atom	1.2.3.1 Discovery of electron, proton and neutron	Memorisation
		1.2.3.2 Thomson's atomic model and Rutherford's atomic model	Memorisation
		1.2.3.3 Bohr's theory	Comprehension
		1.2.3.4 Basic Atomic structure	Comprehension
		1.2.3.5 Concept of atomic number and mass number	Comprehension
		1.2.3.6 Concept of isotope, atomic mass and relative atomic mass	Comprehension
		1.2.3.7 Calculation of the relative atomic mass of an element	Application
	1.2.4 Extranuclear Electron Configuration	1.2.4.1 Concept of electron cloud	Comprehension
		1.2.4.2 The motion state of extranuclear electron	Comprehension
		1.2.4.3 Rules of extranuclear configuration electron (Principle of lowest energy Pauli's exclusion principle, Hund's rule), and the ability to write orbital notation and electron configuration	Analysis
1.3 Stoichiometry	1.3.1 Chemical Formula and Formula Mass	1.3.1.1 Definitions of chemical formula and formula mass	Comprehension
		1.3.1.2 Types of chemical formula (molecular, empirical, structural)	Analysis
		1.3.1.3 Calculation of chemical formula	Application
	1.3.2 Mole and Avogadro's Constant	1.3.2.1 Concept of Mole and Avogadro's constant	Comprehension
		1.3.2.2 Significance and calculation of molar mass	Application
	1.3.3 Chemical Reactions and Chemical Equations	1.3.3.1 Types of chemical reaction	Comprehension
		1.3.3.2 Calculation chemical equations	Application
1.4 Periodic Table	1.4.1 Structure of the periodic table	1.4.1.1 Mendeleev and the periodic table	Memorisation
		1.4.1.2 Structure of the periodic table	Analysis
	1.4.2 The periodic law of elements	1.4.2.1 Periodic variation of the basic property of an element (atomic radius and ionic radius, ionisation energy, electronegativity, metallic property and non-metallic property)	Analysis

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
1.5 Chemical Bond	1.5.1 Chemical Bond	1.5.1.1 Types, formation and property of chemical bonds	Comprehension
	1.5.2 Intermolecular Forces	1.5.2.1 Formation, Property of Van de waals' forces and Factors affecting Van de Waals' forces 1.5.2.2 Formation and property of hydrogen bond 1.5.2.3 Effects of Van de Waals' and hydrogen bond forces on material properties	Comprehension Comprehension Comprehension
	1.5.3 Crystal	1.5.3.1 Types and property of crystals	Comprehension
1.6 Redox Reaction	1.6.1 Redox Reaction	1.6.1.1 Definitions of oxidation reaction and reduction 1.6.1.2 Calculation of oxidation number 1.6.1.3 Concept of oxidizing and reducing agents	Comprehension Application Comprehension
	1.6.2 Equation for Redox Reaction	1.6.2.1 Balancing of redox reaction equation (oxidation number method; ion-electron method)	Application
1.7 Gases	1.7.1 The Fundamental Law of Gases and its Basic Property	1.7.1.1 Basic property of gases 1.7.1.2 Brownian motion (thermal motion of molecules) 1.7.1.3 Boyle's law, Charles' law, Graham's diffusion law, Gay Lussac's law 1.7.1.4 Avogadro's law 1.7.1.5 Dalton's law of partial pressures	Comprehension Comprehension Application Application Application
	1.7.2 Molar Volume of Gases	1.7.2.1 Concept and calculation of molar volume of gases	Application
	1.7.3 Ideal Gases	1.7.3.1 Concept and characteristics of ideal gases 1.7.3.2 State equation for ideal gases	Comprehension Application
	1.7.4 Kinetic Theory of Gases	1.7.4.1 Kinetic theory of gases	Comprehension
	1.7.5 Real Gases	1.7.5.1 Characteristics of real gases	Comprehension
	1.7.6 Phase Changes	1.7.6.1 Concept of phase and phase change 1.7.6.2 Concept of boiling and evaporation 1.7.6.3 Concept of vapour pressure	Comprehension Comprehension Compression
1.8 Solution	1.8.1 Composition of Solution	1.8.1.1 Concept of solute, solvent and solution 1.8.1.2 Concept of unsaturated solution, saturated solution and over-saturated solution	Comprehension Comprehension
	1.8.2 Solubility	1.8.2.1 Concept and calculation of solubility 1.8.2.2 Interpreting the solubility curve	Application Application
	1.8.3 Partition Law	1.8.3.1 Partition law and its calculation	Application
	1.8.4 Concentration of Solution	1.8.4.1 The concept and calculation of solution concentration (mass percentage, volume percentage, molality and amount of substance concentration)	Application
	1.8.5 Ideal Solution	1.8.5.1 Concept and characteristics of ideal solution 1.8.5.2 Deviation of real solution from ideal solution	Comprehension Comprehension
	1.8.6 Colligative Properties of Dilute Solution	1.8.6.1 Raoul's law and its calculation 1.8.6.2 Elevation of boiling point and depression of freezing point and their calculation	Application Application

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
1.9 Chemical Reactions and Energy	1.9.1 Heat Energy and Chemical Reactions	1.9.1.1 First law of thermodynamics 1.9.1.2 Concept of enthalpy 1.9.1.3 Thermochemical equation	Comprehension Comprehension Application
	1.9.2 Heat of Reaction	1.9.2.1 Types and calculation of the heat of reaction (heat of formation, heat of combustion, heat of neutralisation)	Application
	1.9.3 Hess's law	1.9.3.1 Hess's law and its calculation	Application
1.10 Chemical Reaction Rate	1.10.1 Chemical Reaction Rate	1.10.1.1 Definition and calculation of the rate of chemical reaction rate 1.10.1.2 Factors affecting the chemical reaction rate (reactant nature and surface sizes, reactant concentration, reaction temperature and catalyst) 1.10.1.3 Equation of chemical reaction rate	Application Application Application
1.11 Chemical Equilibrium	1.11.1 Dynamic Equilibrium	1.11.1.1 Definition of dynamic equilibrium 1.11.1.2 Concept of chemical equilibrium 1.11.1.3 Factors affecting chemical equilibrium (concentration, pressure, temperature and catalyst)	Comprehension Comprehension Comprehension
	1.11.2 Le Chatelier's Principle	1.11.2.1 Le Chatelier's Principle	Application
	1.11.3 Quantitative Studies on Chemical Equilibrium	1.11.3.1 Law of chemical equilibrium and its calculation	Application
1.12 Ionic Equilibrium in Aqueous Solution	1.12.1 Sparingly Soluble Electrolyte	1.12.1.1 Definition of electrolyte 1.12.1.2 Dissolution equilibrium of sparingly soluble electrolyte 1.12.1.3 Dissolution equilibrium constant—concept of solubility product (K_{sp}) and its calculation 1.12.1.4 Factors affecting the shift of dissolution equilibrium for sparingly soluble electrolytes (temperature, common ion effect) and its calculation 1.12.1.5 Prediction and selection of sendimentation using solubility product	Comprehension Comprehension Application Application Application
1.13 Acid, Base, Salts	1.13.1 Basic Theory of Acid-base	1.13.1.1 Arrhenius acid-base theory, Brnsted - Lowry acid-base theory, Lewis acid-base theory	Comprehension
	1.13.2 Degree of Ionization and Ionization Constant	1.13.2.1 Concept of the degree of ionisation and ionisation constants and their calculation	Application
	1.13.3 pH Value	1.13.3.1 Concept of ionic equilibrium and ionic product in water and their calculation 1.13.3.2 Concept of pH value and its calculation	Application Application

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
1.13 Acid, Alkali, Salt	1.13.4 Acid-base Titration	1.13.4.1 Principles of acid-base titration 1.13.4.2 acid-base, indicators colour changes and colour ranges (methyl orange, methyl red, litmus and phenolphthalein) 1.13.4.3 Interpreting the titration curve 1.13.4.4 Calculation of acid-base titration	Comprehension Comprehension Application Application
	1.13.5 Salts	1.13.5.1 Definition of salts 1.13.5.2 Hydrolysis of salts	Comprehension Comprehension
	1.13.6 Buffer Solution	1.13.6.1 Concept and composition of buffer solution	Comprehension
1.14 Primary Cells and Electrolysis	1.14.1 Primary Cells	1.14.1.1 Composition of primary cells 1.14.1.2 Redox reaction and half-cell reactions	Comprehension Comprehension
	1.14.2 Electrode Potential	1.14.2.1 Concept and calculation of electrode potential (determine the relative strength of reducing and oxidizing agents; calculation of emf to determine the direction of redox reaction)	Application
	1.14.3 Commonly Used Chemical Power Source	1.14.3.1 Structure and principle of commonly used chemical power source (storage battery and Zn-Mn battery)	Comprehension
	1.14.4 Electrolysis	1.14.4.1 Principle of electrolysis 1.14.4.2 Law of electrolysis and its calculation 1.14.4.3 Differences between electrolytic cells and primary cell	Application Application Comprehension
1.15 Nuclear Chemistry	1.15.1 natural Radioactive Elements	1.15.1.1 Discovery of natural radioactive elements 1.15.1.2 Types and property of radioactive rays 1.15.1.3 Radiation detection methods	Comprehension Comprehension Memorisation
	1.15.2 Decay of Radioactive Elements	1.15.2.1 Nuclear stability 1.15.2.2 Concept and types of nuclear decay and equation for nuclear reactions 1.15.2.3 Calculation of half-life	Comprehension Comprehension Application
	1.15.3 Radioactive Isotopes	1.15.3.1 Uses of radioactive isotopes (archeology, geology, medicine, industry and agriculture)	Comprehension
	1.15.4 Radiation	1.15.4.1 Radiation damage to human body and its protective measurements	Comprehension
	1.15.5 Nuclear Energy	1.15.5.1 Concept of nuclear fission and nuclear fussion	Comprehension

2. Inorganic Chemistry

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
2.1 Water, Hydrogen	2.1.1 Water	2.1.1.1 Property of water	Comprehension
	2.1.2 Hydrogen	2.1.2.1 Property, preparation and use of hydrogen	Comprehension
2.2 Metallic Elements	2.2.1 IA Elements	2.2.1.1 Outline of IA elements	Memorisation
		2.2.1.2 Property of sodium and potassium	Comprehension
		2.2.1.3 The Property of sodiums compounds and their main uses (sodium chloride, sodium hydroxide, sodium carbonate)	Comprehension
		2.2.1.4 Verification of sodium ion and potassium ion	Analysis
	2.2.2 IIA Elements	2.2.2.1 Outline of IIA elements	Memorisation
		2.2.2.2 Property of magnesium and calcium	Comprehension
		2.2.2.3 The Property of calcium compounds and their main uses (calcium oxide, calcium hydroxide, calcium sulphate, calcium chloride)	Comprehension
		2.2.2.4 The property of magnesium compounds and their main uses (magnesium oxide, magnesium sulphate, magnesium chloride)	Memorisation
		2.2.2.5 Verification of calcium ion and magnesium ion	Analysis
2.2 Metallic Elements	2.2.3 IIIA Elements	2.2.3.1 Property of aluminium	Comprehension
		2.2.3.2 The property of aluminium compounds and their main uses (aluminium oxide, aluminium hydroxide, aluminium potassium sulphate dodecahydrate)	Comprehension
		2.2.3.3 Smelting principle of aluminium	Memorisation
	2.2.4 Transition Elements	2.2.4.1 Electron shell structure of transition elements	Comprehension
		2.2.4.2 Generality of the first row transition elements	Comprehension
		2.2.4.3 Property of iron and copper	Comprehension
		2.2.4.4 The property of iron compounds and their main uses (iron oxides, iron hydroxides, iron chloride (III), iron sulphate (II))	Comprehension
		2.2.4.5 The property of copper compounds and their main uses (copper oxide, copper sulphate)	Memorisation
		2.2.4.6 Verification of iron ion and copper ions	Analysis
		2.2.4.7 Smelting principles of iron and steel	Comprehension
		2.2.4.8 Iron alloy	Memorisation
2.3 Non-metallic Elements	2.3.1 IVA Elements	2.3.1.1 Outline of IVA elements	Memorisation
		2.3.1.2 Property of carbon and silicon	Comprehension
		2.3.1.3 Structure, properties and uses of carbon allotropes	Comprehension
		2.3.1.4 The property of carbon compounds and their main uses (carbon oxides, carbon carbonate, carbon bicarbonate, inorganic carbides)	Comprehension
		2.3.1.5 The property of silicon compounds and their main uses (silicon dioxide, sodium silicate)	Memorisation
		2.3.1.6 Industrial production method of sodium carbonate (Solvay process)	Comprehension
		2.3.1.7 Silicate industry	Memorisation
		2.3.1.8 Testing for carbonates and bicarbonates	Analysis

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
2.3 Non-metallic Elements	2.3.2 VA Elements	2.3.2.1 Outline of VA elements	Memorisation
		2.3.2.2 Property of nitrogen and phosphorus	Comprehension
		2.3.2.3 Structure, property and uses of phosphorus allotropes	Comprehension
		2.3.2.4 The property of nitrogen compounds and their main uses (nitrogen oxides, nitric acid, nitrates, ammonia and ammonium salts)	Comprehension
		2.3.2.5 The property of phosphorus compounds and their main uses (phosphoric acid, phosphates)	Memorisation
		2.3.2.6 Preparation method of nitrogen gas	Comprehension
		2.3.2.7 Industrial production methods of ammonia (Haber process), nitric acid (ammonia catalytic oxidation)	Comprehension
		2.3.2.8 Testing of nitrates, ammonia and ammonium salts	Analysis
	2.3.3 VIA Elements	2.3.3.1 Outline of VIA elements	Memorisation
		2.3.3.2 Property of oxygen and sulphur	Comprehension
		2.3.3.3 Structure, property s and uses of oxygen and sulphur allotropes	Comprehension
		2.3.3.4 Understand the classification of oxides	Memorisation
		2.3.3.5 The property of oxygen compounds and their main uses (hydrogen peroxide, sodium peroxide, potassium superoxide)	Comprehension
		2.3.3.6 The property of sulphur compounds and their main uses (hydrogen sulphide, sulphur dioxide, sulphuric acid, sulphates)	Comprehension
		2.3.3.7 Preparation method of oxygen	Comprehension
		2.3.3.8 Preparation method of ozone	Memorisation
		2.3.3.9 Mining method of sulphur	Memorisation
		2.3.3.10 Lab preparation of hydrogen sulphide	Comprehension
		2.3.3.11 Industrial preparation method of sulphuric acid	Comprehension
		2.3.3.12 Testing (contact process) of sulphates and sulphites	Analysis Analysis
		2.3.3.13 Testing of hydrogen sulphide and sulphur dioxide	
		2.3.3.14 Composition, property, preparation and uses of ozone	Memorisation
	2.3.4 VIIA Elements	2.3.4.1 Outline of VIIA elements	Memorisation
		2.3.4.2 Property and uses of halogen	Comprehension
		2.3.4.3 The property of chlorine compounds and their main uses (hypochlorous acid, calcium hypochlorite, hydrogen chloride and hydrochloric acid)	Comprehension
			Comprehension
		2.3.4.4 Preparation method of chlorine gas	Comprehension
		2.3.4.5 Preparation method of hydrochloric acid	Analysis
		2.3.4.6 Testing of halide ion	Memorisation
		2.3.4.7 Type and property of halo-oxocid	

3. Organic Chemistry

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
3.1 Introduction	3.1.1 Concept of Organic Compounds	3.1.1.1 Characteristics of organic compounds 3.1.1.2 Classification of organic compounds	Comprehension Comprehension
3.2 Hydrocarbons	3.2.1 Petroleum and Hydrocarbons	3.2.1.1 Petroleum fractional distillation and cracking 3.2.1.2 Concept of hydrocarbon	Memorisation Comprehension
	3.2.2 Alkanes	3.3.2.1 General formula, Chemical formula, structure, homologues, isomers and naming of alkanes 3.2.2.2 Property and uses of alkanes 3.2.2.3 General formula, Chemical formula, structure and naming of cycloalkanes 3.2.2.4 Property of cycloalkanes	Comprehension Comprehension Comprehension Memorisation
	3.2.3 Alkenes	3.2.3.1 General formula, Chemical formula, structures, homologues, isomers and naming of olefins 3.2.3.2 Property and uses of alkenes 3.2.3.3 Testing of alkenes 3.2.3.4 Sources and preparation methods of alkenes	Comprehension Comprehension Analysis Comprehension
	3.2.4 Alkynes	3.2.4.1 General formula, Chemical formula, structure, homologues, isomers and naming of alkynes 3.2.4.2 Property and uses of alkynes 3.2.4.3 Testing of Alkyne 3.2.4.4 Sources and preparation methods of alkynes	Comprehension Comprehension Analysis Comprehension
	3.2.5 Aromatic Hydrocarbons	3.2.5.1 General formula, Chemical formula, structure, homologues, isomers and naming of benzene and toluene 3.2.5.2 Property and uses of benzenes and toluene 3.2.5.3 Testing of toluene 3.2.5.4 Sources and preparation methods of benzene and toluene	Comprehension Comprehension Analysis Comprehension
3.3 Hydrocarbon derivatives	3.3.1 Halohydrocarbons	3.3.1.1 Chemical formulae, structure, homologues, isomers and naming of alkyl halide 3.3.1.2 Property and uses of alkyl halide 3.3.1.3 Preparation methods of alkyl halide 3.3.1.4 Uses of common alkyl halide	Comprehension Comprehension Comprehension Memorisation
	3.3.2 Alcohols	3.3.2.1 General formula, Chemical formula, structure, homologues, isomers and naming of alcohols 3.3.2.2 Property and uses of alcohols 3.3.2.3 Testing of alcohols 3.3.2.4 Preparation methods of alcohols	Comprehension Comprehension Analysis Comprehension
	3.3.3 Phenols	3.3.3.1 Chemical formulae and structure of phenols 3.3.3.2 Property and uses of phenols 3.3.3.3 Testing of phenols 3.3.3.4 Sources and preparation methods of phenols	Comprehension Comprehension Analysis Comprehension

Primary Subject Topic	Secondary Subject Topic	Knowledge Content	Cognitive Demand
3.3 Hydrocarbon Derivatives	3.3.4 Aldehydes and Ketones	3.3.4.1 General formula, Chemical formula, structure, homologues, isomers and naming of aldehydes and ketones	Comprehension
		3.3.4.2 Property and uses of aldehydes and ketones	Comprehension Analysis
		3.3.4.3 Testing of Aldehyde and ketone	Comprehension
		3.3.4.4 Preparation methods of aldehydes and ketones	Memorisation
		3.3.4.5 Classification of carbohydrates	Comprehension
		3.3.4.6 Redox reaction of reducing sugars	
3.4 Organic Acids and Their Derivatives	3.4.1 Carboxylic Acids	3.4.1.1 General formula, Chemical formula, structure, homologues, isomers and naming of carboxylic acids	Comprehension
		3.4.1.2 Property and uses of carboxylic acids	Comprehension Analysis
		3.4.1.3 Testing of Carboxylic acid	Comprehension
		3.4.1.4 Sources and preparation methods of carboxylic acids	
		3.4.1.5 Property and uses of formic acid	Comprehension
		3.4.1.6 Testing of formic acid	Analysis
	3.4.2 Esters and Fats	3.4.2.1 Chemical formula, structure, homologues, isomers and naming of esters	Comprehension
		3.4.2.2 Property and uses of esters	Comprehension
		3.4.2.3 Sources and preparation methods of esters	Comprehension
		3.4.2.4 Chemical formula, structure and naming of fats	Comprehension
		3.4.2.5 Property and uses of fats	Comprehension
		3.4.2.6 Sources of fats	Comprehension
		3.4.2.7 Decontamination principle of soap and synthetic detergent	Comprehension
	3.4.3 Amino Acids	3.4.3.1 Basic structure of amino acids	Memorisation
		3.4.3.2 Property of amino acids	Memorisation
		3.4.3.3 Classification and structure of proteins	Memorisation
		3.4.3.4 Protein denaturation	Memorisation
3.5 Organic polymers	3.5.1 Organic Polymers	3.5.1.1 Basic concept, property and structure of organic polymers	Comprehension
	3.5.2 Polymerization	3.5.2.1 Concept, property and uses of polymerization (addition polymerization and condensation polymerization)	Comprehension
	3.5.3 Rubber	3.5.3.1 Property, structure, uses and naming of natural rubber	Comprehension
		3.5.3.2 Property, structure and uses of synthetic rubber	Comprehension
	3.5.4 Synthetic Polymers	3.5.4.1 Raw materials for synthetic polymers	Memorisation

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
CHINESE LANGUAGE SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Chinese syllabus aims to enable students to acquire and develop:
- Proficiency in Chinese
- Application ability in Chinese

The UEC Senior Chinese examination is a good reflection of contemporary level of Chinese education and, at the same time, students may choose to go for higher studies or look for a working career based on the results.

Ⅱ Exam Objectives

1. Writing ability

1.1   Demonstrating the ability to write different articles such as narrative, expository, argumentative, etc

1.2   Demonstrating the ability to write announcements, notices, official letters, etc

1.3   Demonstrating the ability to master the format and verbiage of practical writing (official documents)

1.4   Demonstrating the ability to understand an entire text accurately

1.5   Demonstrating the ability to write articles full of healthy robust contents, clear outlines and rich materials

1.6   Demonstrating the ability to deliver precise, coherent and decent articles with proper language structure

1.7   Demonstrating the ability to write structured coherent articles

2. Linguistic Proficiency

2.1   Demonstrating the ability to read difficult words

2.2   Demonstrating the ability to differentiate and amend typo/wrong words

2.3   Demonstrating the ability to understand polyphonic and polysemous characters under different contexts

2.4   Demonstrating the ability to understand the meaning of a difficult expression according to the context

2.5   Demonstrating the ability to distinguish words of emotion

2.6   Demonstrating the ability to apply phrases and common expressions accurately

2.7   Demonstrating the ability to form structurally correct sentences

2.8   Demonstrating the ability to single out and correct wrong expressions

2.9   Demonstrating the ability to apply common types of rhetoric

2.10 Demonstrating basic understanding of ancient Chinese literature

2.11 Demonstrating the ability to grasp the basic data of authors in senior Chinese texts

2.12 Demonstrating the ability to recite designated poems

2.13 Demonstrating basic knowledge of Chinese culture

3.   Reading Contemporary Scripts

3.1   Demonstrating the ability to read contemporary literature and articles on social science, science and technology

3.2   Demonstrating the ability to comprehend the meaning and use of expressions and sentences in the context

3.3   Demonstrating the ability to grasp the overall messages and important information in the script

3.4   Demonstrating the ability to perceive an author's thoughts, standpoints and attitude

3.5   Demonstrating the ability to summarize the key points in the script

3.6   Demonstrating the ability to analyze the structure, format and level of the script

3.7   Demonstrating the ability to appreciate and appraise and express one's own thoughts about the content, social impact, presentation skill and use of language in the script

4. Reading Ancient Poetry and Prose

4.1 Demonstrating the ability to comprehend simple ancient prose

4.2 Demonstrating the ability to appreciate classical poetry

4.3 Demonstrating the ability to comprehend expressions in classical Chinese in terms of context

4.4 Demonstrating the ability to comprehend the use of 'empty' words (words without any meaning) in classical Chinese

4.5 The ability to comprehend common phenomena in classical Chinese such as parts of speech, omission, flip, etc

4.6 Demonstrating the ability to transcribe classical Chinese sentences into contemporary Chinese

4.7 Demonstrating the ability to grasp the central ideas of classical Chinese scripts

4.8 Demonstrating the ability to comprehend an author's view and attitude

4.9 Demonstrating the ability to express one's own views on the author's view and attitude, the contents of the scripts

Ⅲ Structure of Exam Paper

There are 2 parts for this exam paper

Paper 1: Writing (40%) ……………………………………………………………………… **Duration: 1 hr 45 mins**

Section A: Essay (30%)

Choose a topic out of 5 and write *at least 600 words* on the chosen topic.

Section B: Practical Writing (10%)

Choose one topic out of 2.

Paper 2: Language Proficiency (60%) ………………………………….……………………… **Duration: 1 hr 45 mins**

Section A: Fundamentals of Chinese Language (10%)

Section B: Knowledge about Literature and Chinese Culture (14%)

Section C: Comprehension on Contemporary Chinese (18%)

Section D: Comprehension on Ancient Poetry and Classical Chinese (18%)

A. Intra-curricular Classical Chinese 8%

B. Extra-curricular Classical Chinese 6%

C. Extra-curricular Ancient Poetry 4%

NB: 1. Essay questions include thematic topics, semi-thematic topics and material composition.

2. Topics under Language Proficiency Test include multiple choice, fill-in-the-blanks and Q&A.

3. There are 9 exam questions in Section B of Exam Paper 2—4 multiple choice with 1% each; 5 fill-in-the-blanks with 2% each.

Ⅳ Exam Content

Item	Particulars
1. Essay	1.1 Narrative, expository, argumentative
2. Practical Writing	2.1 Announcement, notice, official letters

3. Fundamentals of Chinese Language	3.1 Pronunciation and Chinese characters
	  3.1.1 Rare and difficult characters
	  3.1.2 Standard characters
	  3.1.3 Polyphonic and polysemous characters
	3.2 Expressions
	  3.2.1 Semantic (different meanings of a character, derogatory or laudatory)
	  3.2.2 Common expressions (idioms, maxims, proverbs, twisters, common expressions)
	3.3 Sentences
	  3.3.1 Sentence structure (accurate, concise, coherent, decent)
	  3.3.2 Correcting wrong expressions (inaccurate, emotionally unclear, typo, incomplete, redundant, mismatched, disorderly, too complicated sentence, incorrect semantic)
	3.4 Rhetoric
	  3.4.1 Common style (metaphor, metonymy, analogy, exaggeration, match, comparison, repetition, question, palindrome, pun, irony, euphemism, etc)

Item	Particulars
4. Knowledge about Literature and Cultural	4.1 Basics on ancient literature (prose, poetry, novels) 4.2 Authors and their works in senior textbooks (not inclusive of selective texts) 4.3 Poetry in senior textbooks that must be memorized[①] 4.4 Cultural knowledge such as honorifics and social etiquette in senior textbooks
5. Comprehension on Contemporary Chinese	5.1 2 Contemporary articles, including those on literature, social science, science and technology
6. Comprehension on Ancient Poetry and Classical Chinese	6.1 1 Intra-curricular classical Chinese, 1 extra-curricular classical Chinese, 1 extra-curricular ancient poetry

NB ①: Poetry in textbooks that must be memorised by heart

Book	Lesson Frequency	Title
Senior 1 Book 1	Chapter 11	3 quatrains
	Chapter 12	5 verses
Senior 1 Book 2	Chapter 10	a verse from Mo Shang Sang (Mulberry Farm)
	Chapter 12	Xing Xing Chong Xing Xing (Long Journey)
Senior 2 Book 1	Chapter 8	Gui Yuan Tian Ju (Returning to the farm)
	Chapter 9	Yin Jiu (Drinking wine)
	Chapter 10	Duan Ge Xing (Short song)
Senior 2 Book 2	Chapter 8	Guan ju
	Chapter 9	Shuo Shu (A big mouse)
Senior 3 Book 1	Chapter 8	2nd verse from Pi Pa Xing (The Lute)
	Chapter 9	Qiang Jin Jiu (Drinking)
	Chapter 11	Verses 1 & 2 from Zheng Qi Ge (Righteous Song)
Senior 3 Book 2	Chapter 8	Xiang Jian Huan (Meeting with Pleasure)
	Chapter 10	Sheng Sheng Man (Slow Tune)
	Chapter 11	Nian Nu Jiao (Thinking of the Beauty)

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL

COMPUTER & INFORMATION TECHNOLOGY SYLLABUS

Ⅰ Nature of Examination

The purpose of the Senior Middle Three UEC examination for 'Computer and Information Technology' is to assess the level of knowledge and skills of students of Chinese Independent High Schools after completing the three-year Computer and Information Technology curriculum at senior middle level. The results of the assessment can serve as a reference for the candidates' choice of further studies or careers.

Ⅱ Examination Objectives

1. Basic Knowledge
   1.1 Learn about the basic concepts and definitions of computer and information technology
   1.2 Learn and memorise special computer terms, computer parts and categorisations of software and hardware
   1.3 Understand the composition of software and hardware in computer systems and the principles of their functions
   1.4 Understand the composition of software and hardware in computer network systems, network use, network safety and principles of network functions
   1.5 Understand the development trends of computer and information technology
   1.6 The principles of the composition, functions, and development of information systems
   1.7 Understand the concepts, ethics and proper conduct relating to information

2. Basic Skills
   2.1 Perform unit calculations and conversions using data units
   2.2 Solve simple problems using programming concepts and methods

3. Combined Skills
   3.1 Analyse network resources and system safety based on information ethics and conduct, and provide suggestions

Ⅲ Structure of Test

The test is divided into two papers:
Paper 1: Multiple Choice Questions (40%) …………………………………… Duration: 1 hour
         Answer all 40 questions.

Paper 2: Essay Questions (60%) ………………………………………………… Duration: 1 hour 30 minutes
         Answer all 6 questions.

Ⅳ Contents of Examination

1. Learning about Computers

Topic	Knowledge Assessed	Assessment Objectives
1.1 Learning about Computers	1.1.1 Overview (the arrival of the era of information revolution)	Understanding
	1.1.2 Definitions of computers	Memorisation
	1.1.3 Data and information	Understanding
	1.1.4 Information processing cycles	Understanding
	1.1.5 Components of computer hardware	Memorisation, Understanding
	1.1.6 Computer software	Understanding
	1.1.7 Computer networks and the internet	Understanding
	1.1.8 Types of computers	Understanding
	1.1.9 Component elements of computer information systems	Memorisation
	1.1.10 Computer application (individual, family, society, work, living)	Understanding

2. The Internet and its Application

Topic	Knowledge Assessed	Assessment Objectives
2.1 The Internet	2.1.1 The development of the internet	Memorisation
	2.1.2 Internet service providers	Memorisation
	2.1.3 Connections of the internet (data lines, asymmetric digital subscriber lines, cable connections, wireless connections)	Understanding
	2.1.4 The concept of the URL	Understanding
	2.1.5 Applications on the internet (the World Wide Web, e-mail, instant communication, video conferencing, file transfer service, blogs, online telephones)	Understanding
2.2 E-commerce	2.2.1 Definitions of E-commerce	Understanding
	2.2.2 Features of E-commerce	Understanding
	2.2.3 The basic framework of E-commerce	Understanding
	2.2.4 E-commerce models	Understanding
	2.2.5 E-trading and its safety	Understanding, Analysis
2.3 Development Trends of the Internet	2.3.1 Web 3.0	Understanding

3. Computer hardware

Topic	Knowledge Assessed	Assessment Objectives
3.1 System Units	3.1.1 The basic concept of system units	Understanding
	3.1.2 The digital system of computers	Understanding
	3.1.3 Data units of computers	Application
	3.1.4 The coding systems of computers	Application
	3.1.5 The structure and composition of computer motherboards	Memorisation
	3.1.7 The specifications of the central processing unit	Memorisation
	3.1.8 The composition of the central processing unit	Memorisation
	3.1.9 Basic understanding of the main memory	Understanding
	3.1.10 Features of Random Access Memory	Understanding
	3.1.12 Cache Memory	Understanding
	3.1.13 Read-Only Memory	Understanding

Topic	Knowledge Assessed	Assessment Objectives
3.2 Input Devices	3.2.1 Introduction of input devices	Understanding
	3.2.2 Ergonomic keyboards and special keyboards	Memorisation
	3.2.3 The connection of keyboards with system units	Memorisation
	3.2.4 Principles of keyboard functions	Understanding
	3.2.5 The cursor	Understanding
	3.2.6 Scanners	Memorisation, Understanding
	3.2.7 Audio-visual input	Memorisation, Understanding
	3.2.8 Handwriting input	Memorisation, Understanding
	3.2.9 Gaming input devices	Memorisation
	3.2.10 Other input devices (radio frequency identification, biometric input)	Understanding
3.3 Output Devices	3.3.1 Overview of output devices	Understanding
	3.3.2 Flat-panel displays	Understanding
	3.3.3 Printers (ink-jet printers, laser printers, dot matrix printers, multi-function printers)	Understanding
	3.3.4 Projectors	Memorisation
	3.3.5 Speakers	Memorisation
3.4 Storage Devices	3.4.1 Overview of storage devices	Understanding
	3.4.2 Modes of accessing data	Understanding
	3.4.3 Magnetic storage devices (hard drives)	Understanding
	3.4.4 Optical storage devices and the basic principles of their functions	Understanding
	3.4.6 Types of optical discs	Memorisation
	3.4.7 Other storage devices (MO drives, mobile disks, memory cards and smart cards)	Memorisation

4. Computer Software

Topic	Knowledge Assessed	Assessment Objectives
4.1 Computer Software	4.1.1 Categorisations of software (functionalities and authorization codes)	Understanding
	4.1.2 Categorisations of application software	Understanding
	4.1.3 Common application software	Understanding
	4.1.4 Factors in choosing software	Understanding
	4.1.5 Overview of system software	Understanding
	4.1.6 Management functions of operation systems	Understanding
	4.1.7 Common operation systems	Memorisation, Understanding
	4.1.8 Electronic data processing systems	Understanding
	4.1.9 System programme 1.3	Understanding
	4.1.10 Utility programmes	Understanding

5. Network and Communications

Topic	Knowledge Assessed	Assessment Objectives
5.1 Network and Communications	5.1.1 Functions of network communication	Understanding
	5.1.2 Categorisations of data	Understanding
	5.1.3 Modes of data transmission (types of signals, direction of data transmission, transmission technologies, transmission bandwidth)	Understanding
	5.1.4 Data exchange technologies	Understanding
	5.1.5 Network communication medium and transmission devices	Understanding

Topic	Knowledge Assessed	Assessment Objectives
5.1 Network and Communications	5.1.6 Network framework (topology, transmission mechanisms, functions and categorisations)	Understanding
	5.1.7 Principles of network transmission	Understanding
	5.1.8 The Internet Protocol	Understanding
	5.1.9 Wireless networks	Understanding

6. Systems and Programmes

Topic	Knowledge Assessed	Assessment Objectives
6.1 Information Systems	6.1.1 Data and information	Understanding
	6.1.2 Overview of information systems	Understanding
	6.1.3 Types of information systems	Understanding
	6.1.4 System development procedures	Understanding, Application
	6.1.5 Database	Understanding
6.2 Programming Languages and Programming	6.2.1 Introduction to computer programming languages	Understanding
	6.2.2 Types of programming languages	Memorisation, Understanding
	6.2.3 Translation of programming languages	Understanding
	6.2.6 The concept of computer programming	Application
	6.2.7 The composition of programming languages	Application
	6.2.8 The concept of structured programming	Application

7. Computer and Network Safety

Topic	Knowledge Assessed	Assessment Objectives
7.1 Computer and Network safety	7.1.1 The concept of information system safety	Understanding
	7.1.2 The risks of information systems	Understanding, Analysis
	7.1.3 Back-ups and restoration of information systems	Understanding, Analysis
	7.1.4 The safety management of information systems	Understanding, Analysis
	7.1.5 Hardware preservation planning	Understanding, Analysis
	7.1.6 The safety of wireless networks	Understanding, Analysis

8. Information Conduct

Topic	Knowledge Assessed	Assessment Objectives
8.1 Information Conduct	8.1.1 The formation of an information society	Memorisation
	8.1.2 The moral and ethical discourses of the information society	Understanding
	8.1.3 The legal environment of an information society	Understanding
	8.1.4 The reasonable and safe use of network resources	Understanding, Analysis

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL

DIGITAL LOGIC

（Ⅰ） This subject comprises two papers:

Paper 1: Multiple-choice questions (60%) ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯ Time allocated: 1 hour 30 minutes

    Attempt all the **forty (40)** questions.

    Combinational Logic: 22 ~ 24 questions

    Sequential Logic: 10 ~ 12 questions

    Microprocessor 8051: 6 questions

Paper 2: Subjective questions (40%) ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯ Time allocated: 1 hour 15 minutes

    This paper is divided into two sections:

    Section A: Compulsory questions (16%)

        Attempt all the **two (2)** questions.

        Combinational Logic: 1 question

        Sequential Logic: 1 question

    Section B: Elective questions (24%)

        Attempt any **three (3)** questions from the **five (5)** questions.

        Combinational Logic: 2 questions

        Sequential Logic: 2 questions

        Microprocessor 8051: 1 question

（Ⅱ） **Syllabus**

Topic	Contents	Remarks
1. Introduction	1.1 Representation of Quantities 1.2 Digital and Analog Systems 1.3 Logic Levels 1.4 Introduction of Digital Integrated Circuits	
2. Digital System	2.1 Decimal Notation 2.2 Binary Notation 2.3 Octal Notation 2.4 Hexadecimal Notation 2.5 Numeral Notation Conversion 2.6 Complement Number 2.7 Digital Code	
3. Basic Logic Gates	3.1 NOT Gate 3.2 OR Gate 3.3 AND Gate 3.4 NOR Gate 3.5 NAND Gate 3.6 XOR Gate 3.7 XNOR Gate	
4. Boolean Algebra and De Morgan's Theorem	4.1 Characteristics of Boolean Algebra 4.2 Basic Operations of Boolean Algebra 4.3 Basic theory and Hypothesis of Boolean Algebra 4.4 De Morgan's Theorem	

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ECONOMICS SYLLABUS

Ⅰ Syllabus Description

The UEC Senior Economics examination aims to enable students to acquire and develop:
　　一　Knowledge in the subject of economics
The results of the UEC Senior Economics examination may serve as a yardstick for students to decide on going for higher studies or looking for a working career.

Ⅱ Exam Objectives

1. Fundamental Knowledge
    1.1　Demonstrating the ability to memorise basic terms and definitions of Economics
    1.2　Demonstrating understanding of basic concepts of Economics

2. Basic Skills
    2.1　Demonstrating the ability to do calculations with economic equations
    2.2　Demonstrating the ability to use charts and data to explain economic principles
    2.3　Demonstrating the ability to use charts, data and economic principles to explain economic phenomena

3. Economic Thinking
    3.1　Demonstrating the ability to verify the accuracy of theories using economic principles
    3.2　Demonstrating the ability to analyze socio-economic, socio-political and socio-cultural phenomena using fundamental economic principles
    3.3　Demonstrating the ability to evaluate social phenomena using economic principles
    3.4　Demonstrating the ability to propose solutions to actual social problems with economic principles

Ⅲ Exam Structure

This exam is made up of 2 papers:
Paper 1: Objective (30%)…………………………………………………………………………………. Duration: 45 mins

Paper 2: Subjective (70%)………………………………………………………………………………… Duration: 2 hrs
　　　　　Section Ⅰ: Compulsory Questions (10%)
　　　　　　　　　　Answer the only question.
　　　　　Section Ⅱ: Optional Questions (60%)
　　　　　　　　　　Part A: Microeconomics (30%)
　　　　　　　　　　　　　Answer 2 questions out of 3.
　　　　　　　　　　Part B: Macroeconomics (30%)
　　　　　　　　　　　　　Answer 2 questions out of 3.

Ⅳ Exam Content

1. Microeconomics

Primary Subject Matter	Secondary Subject Matters	Knowledge Content
1.1 Introduction to Economics	1.1.1 Definition of Economics	1.1.1.1 Definition of Economics 1.1.1.2 Distinguishing Microeconomics and Macroeconomics
	1.1.2 Scarcity, choice and opportunity cost	1.1.2.1 Explaining scarcity, choice and opportunity cost (family unit, factory unit and government unit) 1.1.2.2 Analysing opportunity cost
	1.1.3 Basic economic problems	1.1.3.1 Economic problems are caused by limited resources and unlimited desires
	1.1.4 Production possibilities curve	1.1.4.1 Possible combinations and changes in production curve 1.1.4.2 Explaining opportunity cost with production possibilities curve
	1.1.5 Definition of commodity	1.1.5.1 Distinguishing different types of commodity
	1.1.6 Economic systems	1.1.6.1 Understanding various types of economic system
1.2 Market Performance	1.2.1 Demand	1.2.1.1 The law of demand 1.2.1.2 Differentiating changes in demand and changes in quantity demanded
	1.2.2 Supply	1.2.2.1 The law of supply 1.2.2.2 Differentiating changes in supply and changes in quantity supplied
	1.2.3 Market equilibrium	1.2.3.1 Analysing market equilibrium 1.2.3.2 Effect of demand and supply on the market
	1.2.4 Elasticity of demand	1.2.4.1 Definition of elasticity of demand (price elasticity, income elasticity and cross elasticity) 1.2.4.2 Demand elasticity index (price elasticity, income elasticity and cross elasticity) 1.2.4.3 Judging the size of demand elasticity (factors affecting the size of price elasticity, income elasticity and cross elasticity)
	1.2.5 Elasticity of supply	1.2.5.1 Definition of elasticity of supply 1.2.5.2 Supply elasticity index 1.2.5.3 Judging the size of supply elasticity
	1.2.6 Consumer surplus	1.2.6.1 Definition of consumer surplus 1.2.6.2 Analysing consumer surplus with data and charts
	1.2.7 Producer surplus	1.2.7.1 Definition of producer surplus 1.2.7.2 Analysing producer surplus with data and charts
	1.2.8 Market efficiency	1.2.8.1 Explaining market efficiency and deadweight loss with supply & demand graph
	1.2.9 Market intervention by the government	1.2.9.1 Methods of government intervention 1.2.9.2 Analysing the outcome of government intervention
1.3 Behavioural Studies of Consumers and Producers	1.3.1 Efficiency	1.3.1.1 Analysing various efficiencies and consumer behaviour 1.3.1.2 Law of diminishing marginal utility 1.3.1.3 Value conflict of water and diamond 1.3.1.4 Analysing consumer equilibrium
	1.3.2 Consumer equilibrium	1.3.2.1 No-difference curve and the budget line 1.3.2.2 Analysing consumer equilibrium
	1.3.3 Production theories	1.3.3.1 Production factors 1.3.3.2 Distinguishing short and long-term 1.3.3.3 Law of diminishing marginal returns 1.3.3.4 Calculation of total production, average production and marginal production 1.3.3.5 Relationship between average production & marginal production

Primary Subject Matter	Secondary Subject Matters	Knowledge Content
1.3 Behavioural Studies of Consumers and Producers	1.3.4 Cost theories	1.3.4.1 Distinguishing accounting cost & economic cost 1.3.4.2 Distinguishing accounting profit & economic profit 1.3.4.3 Distinguishing short & long-term costs 1.3.4.4 Calculation of various costs 1.3.4.5 Relationship between various costs 1.3.4.6 Relationship between short-term & long-term cost curves 1.3.4.7 Shape of the long-term average cost curve
1.4 Market Theory	1.4.1 Market structure	1.4.1.1 Comparing different market strictures (characteristics, profits) 1.4.1.2 Illustrating short-term equilibrium situations of perfect competition, monopoly, monopolistic competition with data and charts 1.4.1.3 Judging short-term closure determinants of perfect competition, monopoly and monopolistic competition with data and charts 1.4.1.4 Analysing long-term equilibrium situations of perfect competition and monopolistic competition 1.4.1.5 Short-term supply curve for manufacturers 1.4.1.6 Impact of market monopoly on social welfare 1.4.1.7 Distinguishing types of competition in various markets (price and non-price competition, collusion)
	1.4.2 Market failure	1.4.2.1 Phenomenon of market failure 1.4.2.2 External effects and maximization of social welfare 1.4.2.3 Appraising the government's remedial actions to external effects 1.4.2.4 Distinguishing public wealth and personal wealth 1.4.2.5 'Hitch-hiking' problems 1.4.2.6 Understanding incongruent information
	1.4.3 Production factors market	1.4.3.1 Definition of various production factors 1.4.3.2 Remuneration of production factors 1.4.3.3 Determinants of remuneration of production factors 1.4.3.4 Backward-bending labour supply curve 1.4.3.5 Impact of labour parties on the labour market 1.4.3.6 Functions of interest rate 1.4.3.7 Functions of profit 1.4.3.8 Distinguishing economic rent, transfer of earnings and quasi-rent 1.4.3.9 Root causes for the occurrence of profit

2. Macroeconomics

Primary Subject Matter	Secondary Subject Matters	Knowledge Content
2.1 National Income & Decision Theory	2.1.1 Concept of national output	2.1.1.1 Concept of national output (GDP, GNP, NDP, NNP, NI, PI and Yd) 2.1.1.2 Distinguishing GDP & GNP 2.1.1.3 Calculation of national output
	2.1.2 Method of calculation for GDP	2.1.2.1 Computing GDP (expenditure method, income method, output method)

Primary Subject Matter	Secondary Subject Matters	Knowledge Content
2.1 National Income & Decision Theory	2.1.3 Limitations of national output statistics	2.1.3.1 Concept of GDP deflator 2.1.3.2 Actual GDP and GDP per capita 2.1.3.3 Limitations of total national output 2.1.3.4 Determining the living standards of a nation with statistical data
	2.1.4 Circulation of national income	2.1.4.1 Models of national income circulation (family, manufacturer, government and foreign trade) 2.1.4.2 Impact of injection & leakage on national output
	2.1.5 Consumption, savings and investment	2.1.5.1 Concepts of consumption function & savings function 2.1.5.2 Relationship between disposable income, consumption, savings & investment 2.1.5.3 Relationship between MEI (marginal efficiency of investment and 'i' (interest rate) 2.1.5.4 Significance of investment to national income of backward countries 2.1.5.5 Factors promoting investment 2.1.5.6 Using multiplier theory to explain the redoubling phenomenon of national income
	2.1.6 Yield equilibrium	2.1.6.1 Using the aggregate expenditure method as well as the investment savings method to explain how total yield achieves equilibrium 2.1.6.2 Relationship between total yield (Y) and aggregate expenditure (AE) (Y>AE, Y=AE, Y<AE) 2.1.6.3 Impact of changes in AE on Y 2.1.6.4 Relationship between total yield (Y), investment (I) and savings (S) (I>S, I=S, I<S)
2.2 Economic Fluctuations, Money & Prices	2.2.1 Economic cycle	2.2.1.1 Understanding the process of economic cycle
	2.2.2 Economic growth	2.2.2.1 Concepts of economic growth & rate of economic growth 2.2.2.2 Explaining economic growth status with rate of economic growth 2.2.2.3 Determining factors of economic growth 2.2.2.4 Impact of economic growth
	2.2.3 Economic development	2.2.3.1 Concept of economic development
	2.2.4 unemployment	2.2.4.1 Definition of unemployment 2.2.4.2 Calculation of employment and unemployment rates 2.2.4.3 Types of unemployment & solutions 2.2.4.4 Natural rate of unemployment and under-employment
	2.2.5 Inflation	2.2.5.1 Definition of consumer price index 2.2.5.2 Definition of inflation 2.2.5.3 Analysing rate of inflation 2.2.5.4 Reasons & impact of inflation
	2.2.6 Deflation	2.2.6.1 Definition of deflation 2.2.6.2 Impact of deflation

Primary Subject Matter	Secondary Subject Matters	Knowledge Content
	2.2.7 Money	2.2.7.1 Evolution of money 2.2.7.2 Functions of money 2.2.7.3 Nature of money 2.2.7.4 Types of money supply
	2.2.8 Quantity theory of money	2.2.8.1 Understanding quantity theory of money 2.2.8.2 Explaining the relationship between quantity theory & price level with the Fischer equation
	2.2.9 Creation of deposit money	2.2.9.1 Explaining the creation of the total amount of deposit money with the deposit multiplier theory
2.3 Macroeconomic Policies	2.3.1 Functions of the central bank	2.3.1.1 Functions of the central bank
	2.3.2 Monetary policy	2.3.2.1 Impact of monetary policy instruments on economy
	2.3.3 Equilibrium interest rate	2.3.3.1 Motivation of money demand 2.3.3.2 Money demand curve & money supply curve 2.3.3.3 Determinants of interest rates
	2.3.4 Monetary policy & interest rates	2.3.4.1 Effects of fiscal policy on interest rate
	2.3.5 The budget	2.3.5.1 Concept and functions of the budget 2.3.5.2 Sources of funding and budget allocation 2.3.5.3 The budgetary plan (balance, deficit, surplus)
	2.3.6 Fiscal policy	2.3.6.1 Impact of fiscal policy on economy 2.3.6.2 Difficulties in the implementation of fiscal policy
2.4 International Economics	2.4.1 International trade	2.4.1.1 Impact of absolute advantage and comparative advantage on individuals and the world 2.4.1.2 Benefits of international trade 2.4.1.3 Free trade & trade protection 2.4.1.4 Globalized economy 2.4.1.5 Effects of globalized economy
	2.4.2 Exchange rate	2.4.2.1 Concepts of foreign exchange rate and foreign exchange reserve 2.4.2.2 Sources of foreign currency supply & demand 2.4.2.3 Determinants of equilibrium exchange rate 2.4.2.4 Types of exchange rate system 2.4.2.5 Impact of changes in foreign exchange supply and demand on equilibrium exchange rate (floating exchange rate regime) 2.4.2.6 Impact of changes in foreign exchange supply and demand on equilibrium exchange rate (managed floating exchange rate regime and the fixed exchange rate regime) 2.4.2.7 Impact of changes in exchange rate on international trade
	2.4.3 Balance of payment	2.4.3.1 Concept of balance of payment 2.4.3.2 Impact of balance of payment on international reserve 2.4.3.3 Causes of imbalance of payment and its adjustment

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL

ELECTRIC MACHINERY

（Ⅰ）This subject comprises two papers:

Paper 1: Multiple-choice questions (60%) ·· Time allocated: 1 hour 30 minutes
      Attempt all the **forty (40)** questions.
      Direct Current (DC) Motors: 22 ～ 24 questions
      Alternating Current (AC) Motors: 8 ～ 10 questions
      Automatic Control: 8 questions

Paper 2: Subjective questions (40%) ·· Time allocated: 1 hour 15 minutes
      This paper is divided into two sections:
      Section A: Compulsory questions (16%)
            Attempt all the **two (2)** questions.
            Direct Current (DC) Motors: 1 question
            Alternating Current (AC) Motors: 1 question
      Section B: Elective questions (24%)
            Attempt any **three (3)** questions from the **five (5)** questions.
            Direct Current (DC) Motors: 2 questions
            Alternating Current (AC) Motors: 1 question
            Automatic Control: 2 questions

（Ⅱ）**Syllabus**
Electric Machinery I

Topic	Contents	Remarks
1. Introduction	1.1 Classification of Electric Machinery 1.2 Basic Electromagnetic Theory	
2. Direct Current (DC) Generator	2.1 Principle of DC Generator 2.2 Construction of DC Generator 2.3 General Aspects of DC Generator 2.4 Classification, Characteristics and Application of DC Generator 2.5 Losses and Efficiency of DC Generator	
3. Direct Current (DC) Motor	3.1 Principle of DC Motor 3.2 Construction of DC Motor 3.3 General Aspects of DC Motor 3.4 Classification, Characteristics and Application of DC Motor 3.5 Losses and Efficiency of DC Motor	
4. Transformer	4.1 Principle and Equivalent Circuit of Transformer 4.2 Short Circuit and Open Circuit Tests on Transformer 4.3 Construction and Characteristics of Transformer 4.4 Connection of Transformers 4.5 Special Transformers	

Electric Machinery II

Topic	Contents	Remarks
5. Single-Phase Induction Motor	5.1 Principle of Single-Phase Induction Motor 5.2 Construction and Classification of Single-Phase Induction Motor 5.3 Starting, Characteristics and Use of Single-Phase Induction Motor 5.4 Speed Control of Single-Phase Induction Motor	
6. Synchronous Generator	6.1 Principle of Synchronous Generator 6.2 Classification and Construction of Synchronous Generator 6.3 Parallel Operation of Synchronous Generator	6.3-2 Parallel Connection Method (self-practice)
7. Synchronous Motor	7.1 Principle and Construction of Synchronous Motor 7.2 Characteristics and Equivalent Circuit of Synchronous Motor 7.3 Starting Method of Synchronous Motor 7.4 Application of Synchronous Motor	7.2.1 Equivalent Circuit and Phasor Diagram of Synchronous Induction Motor. (Not included in the exam) 7.2.2 Synchronous Motor Output Power, Output Torque and Load (Torque) Angle. (Not included in the exam)
8. Special Motor	8.1 Stepper Motor 8.2 Servo Motor 8.3 Brushless Motor 8.4 Linear Motor	

Automatic Control

Topic	Contents	Remarks
9. Introduction	9.1 Control and Automatic Control 9.2 Open-Loop and Closed-Loop Control 9.3 Feedback and Automatic Control 9.4 Automatic Control Classification 9.5 Future Development of Automatic Control	
10. Sequential Control	10.1 Sequential Control 10.2 Electrical Components and Symbols for Sequence Control 10.3 Application of Sequential Circuit	
11. Process Control	11.1 Instruments and Symbols for Process Control 11.2 Process Controller 11.3 Manipulator (Final Control Element) 11.4 Process Simulation 11.5 Process Control Examples	

Topic	Contents	Remarks
12. Feedback Control	12.1 Servo System Construction and Feedback Control 12.2 Classification and Characteristics of Feedback Control 12.3 Block Diagram and Signal Flow Diagram 12.4 Stability of Feedback Control System 12.5 Steady State Error 12.6 Time Response of Linear System 12.7 Frequency Response of Linear System 12.8 Proportional, Integral and Derivative Control 12.9 Frequency Compensation in Feedback Control System 12.10 Influence of Nonlinear Phenomenon on Control System	
13. Types and Uses of Servomechanism	13.1 Servo Motor Mechanism 13.2 Applications and Examples of Servo Mechanism	
14. Feedback Control System Applications	14.1 Automatic Voltage Control 14.2 Automatic Position Control 14.3 Automatic Speed Control 14.4 Examples of Automatic Control Application	

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL

ELECTRONICS

（Ⅰ）This subject comprises two papers:

Paper 1: Multiple-choice questions (60%) ·················· Time allocated: 1 hour 30 minutes

Attempt all the **forty (40)** questions.

Electronics I: 22 ～ 24 questions

Electronics II: 10 ～ 12 questions

Industrial Electronics: 6 questions

Paper 2: Subjective questions (40%) ·················· Time allocated: 1 hour 15 minutes

This paper is divided into two sections:

Section A: Compulsory questions (16%)

　　Attempt all the **two (2)** questions.

　　Electronics I: 1 question

　　Electronics II: 1 question

Section B: Elective questions (24%)

　　Attempt any **three (3)** questions from the **five (5)** questions.

　　Electronics I: 3 questions

　　Electronics II: 1 question

　　Industrial Electronics: 1 question

（Ⅱ）**Syllabus**

Electronics I

Topic	Contents	Remarks
1. Introduction	1.1 Definition of Electronics 1.2 History of Electronics 1.3 Future Development Trends of Electronics 1.4 Understanding of Basic Waveforms	
2. Diode	2.1 Intrinsic Semiconductor 2.2 P-Type and N-Type Semiconductors 2.3 P-N Junction Diode 2.4 Diode Characteristic Curve 2.5 Diode Biasing 2.6 Diode Equivalent Circuit 2.7 Zener Diode 2.8 Light Emitting Diode (LED)	
3. Diode Application Circuits	3.1 Transformer Circuit 3.2 Rectifier Circuit 3.3 Filter Circuit 3.4 Voltage Doubler Circuit 3.5 Clipping Circuit 3.6 Clamping Circuit	

Topic	Contents	Remarks
4. Bipolar Junction Transistor (BJT)	4.1 Structure and Characteristics of BJT 4.2 Three Configurations of Transistor Amplifier 4.3 Switching Function of Transistor	
5. BJT Biasing Circuits	5.1 DC Operating Point 5.2 Fixed Biasing Circuit 5.3 Feedback Biasing Circuit 5.4 Voltage Divider Biasing Circuit	
6. BJT Amplifier Circuits	6.1 Basic Concept of Amplifier 6.2 Importance of Small-Signal Amplifier Circuit 6.3 Transistor Amplifier Working Principle 6.4 Common-Emitter Amplifier Circuit 6.5 Common-Collector Amplifier Circuit 6.6 Common-Base Amplifier Circuit 6.7 Characteristics Comparison between Common-Emitter, Common-Collector and Common-Base Amplifiers	

Electronics II

Topic	Contents	Remarks
7. BJT Cascade Amplifier Circuits	7.1 Voltage Gain of Cascade Amplifier 7.2 Resistance-Capacitance Coupled Amplifier 7.3 Direct Coupled Cascade Amplifier 7.4 Darlington Circuit 7.5 Transformer Coupled Amplifier 7.6 Frequency Response of Amplifier 7.7 Characteristics Comparison of Various Cascade Amplification Circuits	
8. Field Effect Transistor (FET)	8.1 Types of Field Effect Transistor 8.2 Structure and Characteristics of Junction Field Effect Transistor (JFET) 8.3 JFET DC Biasing 8.4 Structure and Characteristics of Metal Oxide Semiconductor Field Effect Transistor (MOSFET) 8.5 Depletion Mode MOSFET DC Biasing 8.6 Enhancement Mode MOSFET DC Biasing	
9. FET Amplifier Circuits	9.1 Common-Source Amplifier Circuit 9.2 Common-Drain Amplifier Circuit 9.3 Common-Gate Amplifier Circuit 9.4 Characteristics Comparison between Common-Source, Common-Drain and Common-Gate Amplifier Circuits	

Topic	Contents	Remarks
10. Operational Amplifier	10.1 Introduction of Ideal Operational Amplifier 10.2 Characteristics and Parameters of Operational Amplifier 10.3 Virtual Ground 10.4 Inverting Amplifier 10.5 Inverter 10.6 Non-Inverting Amplifier 10.7 Voltage Follower 10.8 Adder 10.9 Subtractor 10.10 Differentiator 10.11 Integrator 10.12 Comparator 10.13 Schmitt Trigger 10.14 Bandwidth Limit	
11. Basic Oscillator Circuits	11.1 Introduction of Oscillator 11.2 Phase Shift Oscillator 11.3 Wein Bridge Oscillator 11.4 Cauchy Oscillator 11.5 Hartley Oscillator 11.6 Quartz Crystal Oscillator 11.7 Square Wave Generator 11.8 Triangular Wave Generator 11.9 Astable multivibrator using BJT 11.10 Monostable multivibrator using BJT 11.11 Bistable multivibrator using BJT 11.12 Schmitt Trigger using BJT 11.13 Application Circuits of Integrated Circuit 555 Timer	
12. Power Amplifier	12.1 Class A Amplifier 12.2 Class B Amplifier 12.3 Class AB Amplifier 12.4 Class C Amplifier 12.5 Characteristics Comparison of four types of Amplifiers	

Industrial Electronics

Topic	Contents	Remarks
13. Introduction	13.1 Introduction of Control 13.2 Control Signal	
14. Power Components	14.1 Introduction of Power Component 14.2 Silicon Controlled Rectifier (SCR) 14.3 Triode for AC (TRIAC) 14.4 Unijunction Transistor (UJT) 14.5 Gate Turn-Off Thyristor (GTO) 14.6 Power Transistor 14.7 Power MOSFET 14.8 Insulated Gate Bipolar Transistor (IGBT) 14.9 Various Types of Thyristors 14.10 Power Component Review	
15. Power Conversion	15.1 What is Power Conversion 15.2 AC Voltage to DC Voltage Converter 15.3 DC Voltage to DC Voltage Converter 15.4 DC Voltage to AC Voltage Inverter	
16. Input Sensing Modules	16.1 Introduction and Classification of Sensor 16.2 Introduction of Various Types of Sensors	
17. Application Circuits	17.1 Electric Thermo Control 17.2 Flashlight Circuit 17.3 DC Fluorescent Lamp Circuit 17.4 Emergency Lighting 17.5 TRIAC Light Dimmer Circuit 17.6 Neon Flashing Light Billboard Circuit 17.7 Microwave Oven Circuit 17.8 Liquid Level Control Circuit 17.9 Component Count Circuit 17.10 Motor Speed Control Circuit 17.11 Pulse Width Modulation Speed Control Circuit	

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
ENGLISH LANGUAGE SYLLABUS

Ⅰ Syllabus Aims

The UEC Senior level English Language syllabus is specifically designed for Senior Middle Three candidates and is intended to allow candidates to acquire and develop:

- Use of language skills
- Knowledge of language

Ⅱ Exam Objectives

1. Language Skills

1.1 Reading

1.1.1   Demonstrate understanding and ability to retrieve information from a passage
1.1.2   Demonstrate ability to use contextual clues to find meaning
1.1.3   Demonstrate understanding of logical relationships within and between sentences and paragraphs
1.1.4   Demonstrate ability to discern main ideas and supporting details of a passage
1.1.5   Demonstrate ability to demonstrate relevance
1.1.6   Demonstrate ability to predict outcomes / make hypotheses / form conclusions
1.1.7   Demonstrate ability to identify the purpose of a passage
1.1.8   Demonstrate ability to make an inference from a passage

.

1.2 Writing

1.2.1   Demonstrate ability to construct structurally and grammatically correct sentences
1.2.2   Demonstrate ability to develop coherent and cohesive paragraphs using correct discourse markers, language styles and formats
1.2.3   Demonstrate ability to develop thesis statement and topic sentences effectively
1.2.4   Demonstrate ability to construct a well-structured essay
1.2.5   Demonstrate ability to present a viewpoint critically by giving mature and reasonable justifications
1.2.6   Demonstrate ability to write a summary

2. Language Knowledge

2.1.1   Demonstrate ability to understand and apply correct grammar structure and usage

Ⅲ Test Structure

The examination is administered on paper that requires the candidates to perform a set of skills. The structure of the examination is as follows:

This examination comprises two papers.

Paper 1: Writing (50%) .... **Time allocated: 100 minutes**

Section A: Summary Writing (15%)

A passage of about 450 words will be provided. Candidates are required to read the passage and respond in not longer than 150 words.

Section B: Essay Writing (35%)

Candidates are to choose one out of five topics and write the essay in not less than 350 words. The topics may cover the following modes of writing: factual, opinion, persuasive, cause and effect, compare and contrast.

Paper 2: Reading and Language Use (50%) .... **Time allocated: 80 minutes**

Section A: Reading (30%)

Part Ⅰ: Critical Reading (10%)

Five short extracts of 90-120 words with five multiple-choice questions will be provided. Questions require candidates to identify themes, main ideas and purposes.

Part Ⅱ: Vocabulary (10%)

A passage of 300-350 words or a few passages of 150-250 words with ten multiple-choice questions will be provided. The passage(s) may either be original or extracts taken from newspapers, magazines or books.

Part Ⅲ: Comprehension (10%)

A passage of 500-700 words with ten multiple-choice questions will be provided. The passage may either be original or extracts taken from newspapers, magazines or books.

Section B: Language Use (20％)

Part Ⅰ: Error Identification (10%)

Candidates are to identify the error in each sentence. Ten multiple-choice questions will be provided.

Part Ⅱ: Word Forms (10%)

A passage with ten blanks will be provided. Candidates are to fill in the ten blanks with one word each by changing the words within brackets to the correct form.

Ⅳ Test Content

1. Context
1.1 Self Development
1.2 Social Issues
1.3 Environment
1.4 Health and Hygiene
1.5 Science and Technology
1.6 Lifestyles

2. Text Type
2.1 Articles and Reports
2.2 Conversations, Dialogues and Interviews
2.3 Descriptions of People, Things, Places, Scenes
2.4 Facts and Opinions
2.5 Journals and Diaries
2.6 Letters
2.7 Messages
2.8 Processes and Procedures
2.9 Speeches and Talks
2.10 Narratives

3. Vocabulary
Words or phrases dealing with topics / themes / context of:
3.1 Self Development
3.2 Social Issues
3.3 Environment
3.4 Health and Hygiene
3.5 Science and Technology
3.6 Lifestyles

4. Grammar

4.15 Question Tags

4.16 Negative Form and Interrogative Form

4.17 Punctuations

4.18 Phrases and Clauses

    4.18.1   Adjectival

    4.18.2   Adverbial

    4.18.3   Noun

4.19 Sentence Types

    4.19.1   Simple Sentences

    4.19.2   Compound Sentences

    4.19.3   Complex Sentences

4.20 Phrasal Verbs

4.21 Interjections

N.B. The textbooks *English* (Senior Middle 1, 2 and 3) compiled by the Curriculum Department of the Malaysian Independent Chinese Secondary Schools (MICSS) Working Committee will be used as the main reference for the examination.

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
GEOGRAPHY SYLLABUS

Ⅰ Aims of Examination

UEC Senior Geography examination is a test of high level and selectivity, with the aims of assessing school leavers' proficiency and application ability in Geography. The exam is also a good reflection of contemporary level of Geography education and, at the same time, students may choose to go for higher studies or look for a working career based on the exam result.

Ⅱ Exam Objectives

1. Geography Knowledge
   1.1 An understanding and remembering of geographic locations & features on a local, regional and global scale
   1.2 The ability to use and understand geographical data and information
   1.3 An understanding of how communities around the world are affected and constrained by different environments
   1.4 An understanding of the interrelationship between natural & human environments

2. Geography Skills
   2.1 The use of maps, charts, written data, measurements, computations and interpretations to analyse and obtain geographical data and information
   2.2 Drawing schematic diagrams and charts
   2.3 The appropriate application of geographical and other techniques

3. Geographic Thinking
   3.1 Analyzing interrelationship between natural geography elements
   3.2 Analyzing interrelationship between human geography elements
   3.3 Analyzing interrelationship between natural and human environments of different regions in the world
   3.4 Analyzing the impact of globalization and human life
   3.5 Evaluating human activities on earth and suggesting corrective measures

Ⅲ Structure of Exam Paper

This exam consists of 2 papers:

Paper 1: Answer all questions.
   Multiple Choice Questions (50%) …………………………………………………………… Duration: 1 hr 10 mins
   Comprises 3 sections:
   Section A: Interpreting Maps & Charts (10 questions)
   Section B: Natural Geography (30 questions)
   Section C: Human Geography (10 questions)

Paper 2: Subjective Questions (50%)………………………………………………….…………………… Duration: 1 hr 30 mins
   Comprises 2 sections:
   Section A: World Geography, including

	Asia	Answer any 1 out of 2 questions given.
	Europe, North America	Answer any 1 out of 2 questions given.
	Other Regions	Answer any 1 out of 2 questions given.

   Section B: Human Geography Answer any 2 out of 4 questions given.

Ⅳ Syllabus Content

1. World Geography

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
1.1 Asia	1.1.1 Outline	1.1.1.1 Location & geographic divisions of Asia 1.1.1.2 Topographic features of Asia 1.1.1.3 Impact of Asian topography on natural & human environments 1.1.1.4 Factors influencing Asian climate 1.1.1.5 Types of climate in Asia 1.1.1.6 Population distribution in Asia 1.1.1.7 Differences in economic development in Asia	Remembering, understanding & applying Analysis, comprehension Analysis, comprehension Application, comprehension Comprehension, analysis
	1.1.2 East Asia	1.1.2.1 Factors causing climatic differences in East Asia 1.1.2.2 Impact of natural environment on economic development of East Asia 1.1.2.3 Natural environmental features of Japan 1.1.2.4 Japan's economic development, problems & solutions 1.1.2.5 Natural environmental features of China	Comprehension, analysis Comprehension, application, analysis Remembering, comprehension, analysis, evaluation Remembering, comprehension, application,
	1.1.3 South-east Asia	1.1.3.1 Importance of geographic location of South-east Asia 1.1.3.2 Natural environmental features of south-east Asia & their impact on its economic development 1.1.3.3 Natural & human environments of Indo-China peninsula countries 1.1.3.4 Natural & human environments of archipelago nations in South-east Asia 1.1.3.5 Singapore's strategic location & economic development	Remembering, comprehension Remembering, comprehension, analysis Remembering, comprehension, comprehension, comprehension, analysis
	1.1.4 South Asia	1.1.4.1 3 major topographic features of South Asia 1.1.4.2 Impact of monsoons on South Asian climate 1.1.4.3 India's economic development 1.1.4.4 Impact of India's geographic environment on its economic development 1.1.4.5 Natural environment & economic development of Pakistan & Bangladesh	Remembering, comprehension Remembering, comprehension, application Remembering, comprehension Remembering, comprehension, application Remembering, comprehension
	1.1.5 South-west Asia	1.1.5.1 Importance of South-west Asia's geographic location 1.1.5.2 Natural environmental features of South-west Asia 1.1.5.3 Economic status of South-west Asia	Remembering, comprehension Remembering, comprehension Remembering, comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
1.1 Asia	1.1.6 Central Asia	1.1.6.1 Importance of Central Asia's geographic location	Remembering, comprehension
		1.1.6.2 Natural environmental features of Central Asia	Remembering, comprehension
1.2 Australasia	1.2.1 Outline	1.2.1.1 Countries in Australasia & the importance of its geographic location	Remembering, comprehension
		1.2.1.2 Characteristics of 3 major types of island	Remembering, comprehension
	1.2.2 Australia	1.2.2.1 Australia's natural environmental features & their impact on her economic development	Remembering, comprehension, application, analysis
		1.2.2.2 Population distribution in Australia	Remembering, comprehension,
	1.2.3 New Zealand	1.2.3.1 Topographic features of New Zealand	Remembering, comprehension
		1.2.3.2 New Zealand's economic status	Remembering, comprehension
1.3 Africa	1.3.1 Outline	1.3.1.1 Importance of Africa's geographic location	Remembering, comprehension
		1.3.1.2 Africa's natural environment	Remembering, comprehension
		1.3.1.3 Reasons for food shortage in some African countries	Remembering, comprehension
		1.3.1.4 Economic development problems faced by most African countries	Remembering, comprehension, analysis
	1.3.2 Northern Africa	1.3.2.1 Natural & human environmental features of Northern Africa	Remembering, comprehension,
		1.3.2.2 Importance of the Nile & its influences	Remembering, comprehension,
		1.3.2.3 Key factors affecting Egypt's economic development	comprehension, analysis
	1.3.3 Western Africa	1.3.3.1 Economic development status of Western Africa	Remembering, comprehension,
		1.3.3.2 Geographic problems and remedies of Western Africa	Remembering, comprehension, analysis
	1.3.4 Central Africa	1.3.4.1 Natural & human environmental features of Central Africa	Remembering, comprehension
	1.3.5 Eastern Africa	1.3.5.1 Natural & human environmental features of Eastern Africa	Comprehension
	1.3.6 Southern Africa	1.3.6.1 Natural environmental features of Southern Africa	Remembering, comprehension
		1.3.6.2 Distribution of mineral resources in Southern Africa	Remembering
		1.3.6.3 Reasons for South Africa's strong economic growth	Remembering, comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
1.4 Europe	1.4.1 Outline	1.4.1.1 Europe's natural environmental features & their influences	Remembering, comprehension, analysis
		1.4.1.2 Europe's population growth & its influences	Remembering, comprehension
		1.4.1.3 Europe's economic development status	Comprehension
		1.4.1.4 EU functions	Comprehension
	1.4.2 Scandinavia	1.4.2.1 Scandinavia's natural environmental features & their influences	Remembering, comprehension,
		1.4.2.2 Economic development status of the 5 Scandinavian countries	Remembering, comprehension, analysis
	1.4.3 Western Europe	1.4.3.1 Western Europe's natural & human environments	Remembering, comprehension,
		1.4.3.2 England's climate & its influences on agriculture	Remembering, comprehension,
		1.4.3.3 Relationship between England's natural resources & their influences on human environment	Remembering, comprehension, analysis,
		1.4.3.4 Impact of France's natural environment on her human environment	Remembering, comprehension, analysis,
		1.4.3.5 Holland's way to overcome natural environmental constraints	Remembering, comprehension, analysis
	1.4.4 Central Europe	1.4.4.1 Natural environmental features of Central Europe	Remembering, comprehension,
		1.4.4.2 Germany's natural environmental features & their influences on her agriculture	Remembering, comprehension,
		1.4.4.3 Germany's industrial development status	Remembering, comprehension, analysis
		1.4.4.4 Switzerland's economic activities in tandem with her geographic location	Remembering, comprehension
	1.4.5 Eastern Europe	1.4.5.1 Russia's natural environmental features & their influences on her human environment	Remembering, comprehension, analysis
	1.4.6 Southern Europe	1.4.6.1 Southern Europe's natural environmental features & their influences	Remembering, comprehension
		1.4.6.2 Italy's natural environment & its impact on her economic activities	Remembering, comprehension
1.5 North America	1.5.1 Outline	1.5.1.1 Topographic features of North America	Remembering, comprehension
		1.5.1.2 Factors affecting North America's climate	Remembering, comprehension
		1.5.1.3 Importance of the Mississippi & 5 major lakes	Remembering, comprehension
	1.5.2 Canada	1.5.2.1 Influences of Canada's natural environment on her human environment	Remembering, comprehension, analysis
		1.5.2.2 Reasons for economic development of the southern corridor in Canada	comprehension, analysis
	1.5.3 America	1.5.3.1 Influences of America's natural environment on her economic development	Remembering, Comprehension, analysis
		1.5.3.2 America's industrial development status	Remembering, Comprehension,
		1.5.3.3 America's agricultural development status	Remembering, Comprehension,
		1.5.3.4 America's population distribution & its reasons	Remembering, Comprehension,
	1.5.4 Central America	1.5.4.1 Central America's natural environment	Remembering, comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
1.6 South America	1.6.1 Outline	1.6.1.1 South America's natural environment & its influences on her economic development	Remembering, comprehension, analysis
	1.6.2 Brazil	1.6.2.1 Influences of Brazil's natural environment on her human environment	Remembering, comprehension, analysis
	1.6.3 Venezuela, Argentina, Chile	1.6.3.1 Venezuela's natural environment & its influences on her economic development 1.6.3.2 Argentina's natural environment & its influences on her economic development 1.6.3.3 Chile's natural environment & its influences on her economic development	Remembering, comprehension Remembering, comprehension Remembering, comprehension

2. Natural Geography

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
2.1 Universe	2.1.1 Astronomical Bodies	2.1.1.1 Solar System & major astronomical bodies 2.1.1.2 Impact of the sun's activities on Earth 2.1.1.3 Classification & characteristics of planets 2.1.1.4 Earth's conditions that support life 2.1.1.5 Phases of the moon, eclipses and tides, their impact on human life	Remembering, comprehension, application, Remembering, comprehension, comprehension, comprehension, analysis, comprehension, application, analysis
2.2 Earth	2.2.1 The Atmosphere	2.2.1.1 Stratification of the atmosphere 2.2.1.2 Impact of the atmosphere on sun radiation 2.2.1.3 Overview on temperature changes 2.2.1.4 Principles of atmospheric movements & their influences 2.2.1.5 Influences of land & sea distribution on atmospheric circulation 2.2.1.6 Types of local atmospheric circulation 2.2.1.7 Conditions for & formation of condensation 2.2.1.8 Cloud formation & their characteristics 2.2.1.9 Types of rain & their characteristics 2.2.1.10 Rain distribution in the world	Remembering, comprehension, Remembering, comprehension, application, Analysis, comprehension, application, Analysis, comprehension, application, Analysis, comprehension, application, Comprehension, application, comprehension, Comprehension, comprehension, comprehension Comprehension, application, analysis
	2.2.2 Weather	2.2.2.1 Factors governing weather & phenomena caused by them 2.2.2.2 Weather observation & recording methods 2.2.2.3 Judging weather conditions using weather maps 2.2.2.4 Detrimental effects of catastrophic weather & preventive measures	Remembering, comprehension, application, analysis, comprehension, Applications, comprehension, Application, comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
2.2 Earth	2.2.3 Climate	2.2.3.1 Factors governing climate	Remembering, comprehension, analysis, memorisation
		2.2.3.2 Climate distribution, their causes & features	comprehension, application, analysis,
		2.2.3.3 Features & uses of climatic resources	comprehension, analysis,
		2.2.3.4 Detrimental effects of catastrophic climate & preventive measures	comprehension, analysis, comprehension, application,
		2.2.3.5 Influences of human activities on the climate	analysis, evaluation
	2.2.4 Water	2.2.4.1 Ratio of water storage quantity in the world	Remembering, comprehension,
		2.2.4.2 Types, features & meaning of the Water Cycle	Remembering, comprehension,
		2.2.4.3 Principles of water balance	comprehension, comprehension, analysis
		2.2.4.4 Importance of water balance principles to sensible planning of water resources	Analysis
	2.2.6 Lakes	2.2.6.1 Features of a lake & its forming elements	Remembering,
		2.2.6.2 Inflow & outflow lakes	Remembering,
		2.2.6.3 Types, features & distribution of lakes	comprehension, application,
		2.2.6.4 Evolution processes of lakes	remembering,
		2.2.6.5 Functions of lakes	comprehension, application
		2.2.6.6 Impact of human activities on lakes & protective measures	
	2.2.7 Glaciers	2.2.7.1 Formation of glaciers	Remembering, comprehension,
		2.2.7.2 Types, features & distribution of glaciers	Remembering, comprehension,
		2.2.7.3 Factors governing glacier accumulation & melting	Remembering, comprehension,
		2.2.7.4 Impact of glaciers on natural environment & human life	Remembering, comprehension, analysis
	2.2.8 Oceans	2.2.8.1 Impact of natural factors on heat balance of the oceans	Comprehension, application, remembering,
		2.2.8.2 Laws & factors that affect ocean salinity	comprehension, application,
		2.2.8.3 Forms of ocean movement	remembering
		2.2.8.4 Different types of waves & their impact	remembering,
		2.2.8.5 Types & formation causes of ocean currents	comprehension, comprehension, application
		2.2.8.6 Distribution of ocean currents & their impact on geographic environments	Comprehension, application, analysis,
		2.2.8.7 Impact of oceans on geographic environments	Comprehension, analysis
		2.2.8.8 Impact of human activities on coastlines	Comprehension, analysis
	2.2.9 Underground Water	2.2.9.1 Conditions for underground water formation	Remembering, comprehension,
		2.2.9.2 Types & features of underground water	
		2.2.9.3 Features & conditions for formation of springs and wells	Remembering, comprehension, application
		2.2.9.4 Factors governing movement of underground water	Remembering, comprehension,
		2.2.9.5 Supply & discharge of underground water	Comprehension
		2.2.9.6 Underground water utilization & protective measures	Comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
2.2 Earth	2.2.10 Earth's Internal Forces & Topographic Changes	2.2.10.1 Characteristics of seismic wave propagation & the use of seismic wave to probe the Earth's internal structure	Remembering, comprehension,
		2.2.10.2 Division & features of the Earth's inner circles	Remembering, comprehension,
		2.2.10.3 Continental drift theory	comprehension,
		2.2.10.4 Seabed expansion theory	comprehension,
		2.2.10.5 Plate tectonics theory	comprehension,
		2.2.10.6 Classification of geological functions	comprehension, application
		2.2.10.7 Forms of earth crust movements & their phenomena	Remembering, comprehension,
		2.2.10.8 Basic forms of folds & their formation	comprehension, application,
		2.2.10.9 Basic forms of faults & their significance	comprehension, application,
		2.2.10.10 Volcanic eruptions & features of volcanic discharges	comprehension, Remembering
		2.2.10.11 Structure of a volcano	Comprehension
		2.2.10.12 Distribution of volcanic belts	Comprehension
		2.2.10.13 Impact of volcanic activities to human life	Comprehension
		2.2.10.14 Causes of earthquake	Comprehension
		2.2.10.15 Sources & epicenters	Comprehension
		2.2.10.16 Richter scale	Comprehension
		2.2.10.17 Laws of earthquake distribution	Comprehension
		2.2.10.18 Catastrophes & prediction of earthquakes	
	2.2.11 Earth's External Forces	2.2.11.1 Types, formation & impact of weathering	Remembering, comprehension,
		2.2.11.2 Effect of water movement on topography	Remembering, comprehension, application
		2.2.11.3 Effect of wind power on topography & human life	Remembering, comprehension, application
		2.2.11.4 Effect of waves on shapes of coastlines	Remembering, comprehension,
		2.2.11.5 Effect of glaciers on topography	comprehension, application
	2.2.12 Minerals & Rocks	2.2.12.1 Main rock-forming minerals	Remembering
		2.2.12.2 Physical characteristics of different minerals	Remembering, comprehension
		2.2.12.3 Types, features & formation of rocks	Remembering, comprehension
		2.2.12.4 Uses of rocks	Remembering
		2.2.12.5 Recycling earth crust materials	Remembering, comprehension, application, memory
		2.2.12.6 Composition & classification of mineral deposits	
		2.2.12.7 Composition, formation & characteristics of soil	
		2.2.12.8 Types, distribution & significance of major types of soil	
		2.2.12.9 Interrelationship of earth crust & human activities &its corrective measures	Remembering, comprehension Comprehension, analysis
2.2 Earth	2.2.13 Ecosystems	2.2.13.1 Concept of ecosystems & their formation	Remembering,
		2.2.13.2 Basic laws governing energy flow & material recycle in an ecosystem	Remembering, comprehension
		2.2.13.3 Meaning & significance of ecological balance	
		2.2.13.4 Impact of mankind on ecological balance	Remembering, comprehension
		2.2.13.5 Reasons for current threats on biological resources	Comprehension
		2.2.13.6 Significance of managing & protecting the environment & biological resources	Comprehension Comprehension

3. Human Geography

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
3.1 Resources	3.1.1 Development & Utilization of Resources	3.1.1.1 Classification of natural resources 3.1.1.2 Importance of developing resources	Remembering Remembering, comprehension
	3.1.2 Water Resources	3.1.2.1 Importance of water resources in Malaysia 3.1.2.2 Pros and cons of developing water resources 3.1.2.3 Problem of overdeveloping water resources & its remedial actions	Remembering, comprehension Remembering, comprehension Remembering, comprehension
	3.1.3 Forests	3.1.3.1 Importance of forest resources 3.1.3.2 Management protocol for developing forest resources	Comprehension, Comprehension, analysis, evaluation
	3.1.4 Minerals	3.1.4.1 Importance of mineral resources 3.1.4.2 Characteristics of mineral resources 3.1.4.3 Utilisation of energy mineral resources 3.1.4.4 Impact of energy crisis on human life & development of alternative energy 3.1.4.5 Functions of OPEC 3.1.4.6 Use & management of mineral resources	Comprehension, memory, Remembering Comprehension, analysis, evaluation Comprehension comprehension
3.2 Population	3.2.1 Population Growth	3.2.1.1 Rapid increase of world population — 3 stages and factors 3.2.1.2 Causes of population growth 3.2.1.3 Theories on population growth	Comprehension, Remembering, comprehension application, analysis
	3.2.2 Migration	3.2.2.1 Causes of migration 3.2.2.2 Migration status in Malaysia 3.2.2.3 Causes of international migration	Comprehension, Comprehension, application, analysis Comprehension, application, analysis
	3.2.3 Population Structure	3.2.3.1 Forms of population structure and their effects on a country	Remembering, comprehension, application, analysis, evaluation
	3.2.4 Population Problems	3.2.4.1 Causes of population problem & its corrective measures	Comprehension, analysis, evaluation
3.3 Settlement	3.3.1 Nature of Settlement	3.3.1.1 Meaning of settlement	Remembering, comprehension
	3.3.2 Rural Settlement	3.3.2.1 Features & evolution of rural settlement 3.3.2.2 Forms of rural settlement 3.3.2.3 Structures & functions of rural settlement	Comprehension, Remembering, comprehension Remembering, comprehension

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
3.3 Settlement	3.3.3 Urban Settlement	3.3.3.1 Locations of cities	Remembering, comprehension, analysis, remembering, comprehension
		3.3.3.2 Functions of cities	Remembering, comprehension
		3.3.3.3 Land use & structures of cities	Remembering, comprehension, application
		3.3.3.4 Land use models	Comprehension
		3.3.3.5 Factors affecting land use in the city	
		3.3.3.6 Urbanisation & its impact	Comprehension, analysis
3.4 Transport & communication	3.4.1 Transport	3.4.1.1 Definition of transport	Remembering,
		3.4.1.2 Impact of transport development	Remembering, comprehension,
		3.4.1.3 Significance of transport	comprehension,
		3.4.1.5 Transport development status in various regions (case studies)	comprehension, application, application, analysis, evaluation
	3.4.2 Land Transport	3.4.2.1 Advantages & disadvantages of road transport	Remembering, comprehension
		3.4.2.2 Advantages & disadvantages of rail transport	Remembering, comprehension
		3.4.2.3 Advantages & disadvantages of pipeline transport	Remembering, comprehension
	3.4.3 Water Transport	3.4.3.1 Advantages & disadvantages of water transport	Remembering, comprehension,
		3.4.3.2 Prerequisites for ideal inland water transport	comprehension,
		3.4.3.3 World's major shipping routes	comprehension, application
	3.4.4 Air Transport	3.4.4.1 Advantages & disadvantages of air transport	Remembering, comprehension,
		3.4.4.2 Conditions for setting up airports	comprehension, analysis
	3.4.5 Communication	3.4.5.1 Significance of communication	Remembering, comprehension
3.5 Agriculture	3.5.1 Agricultural Development	3.5.1.1 Factors governing agricultural development	Remembering, comprehension, analysis,
		3.5.1.2 Agricultural development status of various regions (case studies)	comprehension application, analysis, evaluation
	3.5.2 Types & Regions of Agriculture	3.5.2.1 Features & distribution of intensive agriculture	Remembering, comprehension, application
		3.5.2.2 Features & energy cycle of paddy fields	Comprehension, application
		3.5.2.3 Features & distribution of extensive agriculture	Comprehension, application
		3.5.2.4 Features & distribution of dairy farming	Comprehension, application
		3.5.2.5 Features & distribution of mixed farming	Comprehension, application
		3.5.2.6 Features, distribution of and development conditions for tropical enterprise agriculture	Comprehension, application
		3.5.2.7 Features & distribution of gardening agriculture	Remembering, comprehension, application
		3.5.2.8 Types, features & distribution of primitive agriculture	Remembering, comprehension, application
	3.5.3 Agricultural Erosion, Disaster & Management Measures	3.5.3.1 Reasons for farmland erosion	Comprehension, Remembering ,
		3.5.3.2 Types & features of agricultural disaster	comprehension, analysis,
		3.5.3.3 Management procedure for farmland	evaluation

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
3.5 Agriculture	3.5.4 Agricultural Location Theory	3.5.4.1 Concept of Thunen Circle 3.5.4.2 Amendments on Thunen Circle 3.5.4.3 Interrelationship between agricultural development in various regions and Thunen Circle	Remembering, comprehension, application, comprehension, application
3.6 Fishery, Forestry & Animal Husbandry	3.6.1 Fishery	3.6.1.1 Definition of fishery 3.6.1.2 Formative conditions for fishing grounds 3.6.1.3 Impact of fishery development on the environment 3.6.1.4 Fishery development status in various regions (case studies)	Remembering, comprehension, comprehension, application, analysis, comprehension, application, analysis evaluation
	3.6.2 Forestry	3.6.2.1 Types of forest & distribution of forestry 3.6.2.2 Booming factors for forestry and problems encountered 3.6.2.3 Forestry development status in various regions (case studies)	Remembering, comprehension, application, comprehension, application, analysis, evaluation
	3.6.3 Animal Husbandry	3.6.3.1 Features & distribution of subsistence husbandry 3.6.3.2 Features & distribution of commercial husbandry 3.6.3.3 Husbandry development status in various regions (case studies)	Remembering, comprehension, application, Remembering, comprehension, application, Comprehension, application, analysis, evaluation
3.7 Mining & Hydropower	3.7.1 Mining	3.7.1.1 Conditions for mining development 3.7.1.2 Formation, use, mining method & distribution of coal 3.7.1.3 Formation, use, mining method & distribution of petroleum 3.7.1.4 Impact of petroleum drilling & use on the environment 3.7.1.5 Types, uses, mining methods and distribution of iron ores 3.7.1.6 Features, uses & distribution of other minerals	Comprehension, Remembering, comprehension, application Remembering, comprehension, application comprehension, comprehension application, comprehension, application
	3.7.2 Hydropower	3.7.2.1 Conditions for hydropower development, its distribution & impact on the environment	Remembering, comprehension, application, analysis
3.8 Industry & Service Industry	3.8.1 Industry	3.8.1.1 Industry locations—factors & changes 3.8.1.2 Distribution, development conditions and overview of major industrial areas 3.8.1.3 Impact of industrial development on the environment	Remembering, comprehension, application, comprehension, application, analysis, evaluation Comprehension, analysis
	3.8.2 Service Industry	3.8.2.1 Importance & development conditions for tourism 3.8.2.2 Tourism development status in various regions (case studies)	Remembering, comprehension, comprehension, application, analysis, evaluation
3.9 International Trade & Cooperation	3.9.1 International Trade	3.9.1.1 Conditions for international trade to take place & its changes 3.9.1.2 Trade status in various countries of the world (case studies)	Remembering, comprehension, comprehension, application, analysis, evaluation

Primary Content	Secondary Content	Knowledge Content	Cognitive Demand
3.9 International Trade & Cooperation	3.9.2 International Cooperation	3.9.2.1 Importance of international cooperation 3.9.2.2 Cooperation status between Malaysia & other nations	Remembering, comprehension Remembering, comprehension

4. Reading & Interpreting Maps & Charts

Theme	Content	Knowledge	Cognitive demand
4.1 Basic Knowledge of Map Reading	4.1.1 Position	4.1.1.1 Using graticules & ordinary maps	Comprehension, application
	4.1.2 Directions	4.1.2.1 Different ways to indicate directions	Comprehension, application
	4.1.3 Scale	4.1.3.1 Scale indication & conversion 4.1.3.2 Zoom-in and out of a map	Comprehension, application Comprehension, application
	4.1.4 Distance	4.1.4.1 Measuring distances on the map	Comprehension, application
	4.1.5 Area	4.1.5.1 Calculating areas on the map	Comprehension, application
4.2 Contour Map	4.2.1 Elevation	4.2.1.1 Indication of elevation	Comprehension, application
	4.2.2 Cross-Sectional Map	4.2.2.1 Definition & illustration method of cross-sectional maps	Comprehension, application
	4.2.3 Hillside And Visibility	4.2.3.1 Types of hillside & computation of slope gradient 4.2.3.2 Visibility between different locations	Comprehension, application Comprehension, application
4.3 Map	4.3.1 Natural Landscape of Malaysia	4.3.1.1 Determining highlands, lowlands, river basins and coastlines of Malaysia 4.3.1.2 Assessing natural vegetation of Malaysia	Comprehension, application Comprehension, application
	4.3.2 Cultural Landscape of Malaysia	4.3.2.1 Determining agricultural produce, mineral deposits, settlements and transport status of Malaysia	Comprehension, application

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECODARY SCHOOLS
SENIOR MIDDLE LEVEL
HISTORY SYLLABUS

(Ⅰ) This subject consists of two papers:

Paper 1: Multiple-choice Questions（30%）··Duration: 40 mins

      History of Malaysia & Singapore and Southeast Asia: 10 questions.

      History of China: 10 questions.

      World History: 10 questions.

Paper 2: Subjective Questions（70%）··· Duration: 2 hrs

      This paper consists of two sections：

    Section A   Short Essay Questions（10%）

           Answer 1 of the 3 questions

           Note: 2015: Source: World History

                 2016: Source: History of Malaysia & Singapore and Southeast Asia

                 2017: Source: History of China

    Section B   Subjective Questions（30%）

           This paper is divided into two parts：

           Part I: History of Malaysia & Singapore （30%）

                 Answer 2 of the 4 questions.

           Part II: Regional History

                 History of Southeast Asia 3 questions; History of China 3 questions; and World History 3 questions

                 Answer 2 of the 9 questions.

           Candidates are required to answer 4 questions from 13 questions in the two parts.

(Ⅱ) **Syllabus**

    Part I: History of Malaysia & Singapore and Part II: History of Southeast Asia

      The History textbook ***History of Malaysia and Southeast Asian Countries*** published by the United Chinese School Committees' Association of Malaysia (UCSCAM) is used as the basis for setting the questions.

Topic	Summary	Remarks

1. The Spread of Islam to Southeast Asia and Emergence of Malacca Sultanate	1.1 The spread of Islam to Southeast Asia
	    — Islam spread along trade routes and its influence
	1.2 The rise and fall of Malacca Sultanate
	    — Foreign relations and development of nation
	    — Political and social system
	    — Tun Perak and prosperity of Sultanate
	    — Internal conflict and the decline of nation	

Topic	Summary	Remarks
2. 16th-17th century Southeast Asia Faced Challenges from the West	2.1 Portuguese invasion of Malacca and activities in Southeast Asia — The Portuguese rule in Malacca 2.2 Establishment of Johor Sultanate and Triangular War — Establishment of Johor Sultanate — Triangular war among Portugal, Johor Sultanate and Aceh 2.3 The Dutch captured the East Indies and Malay Peninsula — Competition among the Netherlands, Portugal and Britain — Establishment of Batavia and Agke Massacre 2.4 Spain invaded the Philippines and the Spanish rule	Subjective questions: Triangular War is not tested in the exam.
3. The Dutch and British power and Development of the 18th-19th Century Malay Peninsula	3.1 Malay Peninsula after the Triangular War — The Dutch plundered the Malay Peninsula — The rise and fall of Johor Sultanate — The Bugis dominated the Malay Peninsula — Minangkabau people and establishment of Sembilan 3.2 Expansion of British power in Malay Peninsula — The British occupation of Penang Island — The British occupation of Singapore — The signing of Anglo-Dutch Treaty and establishment of the Straits Settlements — Development of the Straits Settlements	
4. East Indies and Southeast Asia during the Expansion of Western Power	4.1 The Java War and the implementation of forced cultivation system 4.2 Mainland Southeast Asia — The British invasion of Burma — The French invasion of Indochina 4.3 The early Chakri Dynasty foreign relations and Boni Treaty	
5. Malaya and North Borneo under the British Rule (I)	5.1 The British intervention of Malayan internal affairs — Reasons for intervention — Perak State and the Pangkor Treaty — Selangor—the British second intervention — Pahang was forced to accept the British consul general 5.2 Formation of the Federation of Malaya and Malay Native States — Formation of the Federation of Malaya — Formation of Malay Native States — The modernization of Johor 5.3 The British in Sarawak and North Borneo — Sarawak under the rule of the Brooke family — The British North Borneo Chartered Company — The people of Sarawak and North Borneo resistance against the British rule	
6. Malaya and North Borneo under the British Rule (II)	6.1 Formation of pluralistic society 6.2 Development of education in four major streams	
7. Western Power Occupation of Southeast Asia	7.1 The new colonial policy of the Dutch government 7.2 Burma under the British rule 7.3 The expansion of French power in Indochina and establishment of Indochinese Federation 7.4 Siam and the colonial rivalry between Britain and France, Siam's reformation	

Topic	Summary	Remarks
8. Background of Southeast Asian Nationalist Movement	8.1 World capitalism and the rise of the Southeast Asian middle classes 8.2 Nationalist and democratic movements in Southeast Asian nations	
9. The Nationalist Movement of the Philippines	9.1 Publicity campaign 9.2 The armed conflict between the Spanish colonial regime and the Katipunan 9.3 Political development under the US rule 9.4 Establishment of the Republic of the Philippines	
10. The Development of Indonesian Nationalist Movement and Independence	10.1 The rise of nationalism 10.2 Political parties and the nationalist movement 10.3 The development of nationalist movement during the Japanese occupation 10.4 War of independence and unification of nation	
11. The Nationalist Movement of Malaya and North Borneo	11.1 The rise of Malay nationalist movement 11.2 Development of pre-war Malay nationalist movement 11.3 Political activities of the ethnic Chinese	
12. Japanese Invasion of Malaya and Establishment of the Federation of Malaya	12.1 Japanese invasion of Malaya 12.2 The Federation of Malaya 12.3 The establishment of the Federation of Malaya and the state of emergency	
13. Development of Thailand's Nationalist and Democratic movement	13.1 The 1932 Revolution 13.2 Great Thai Doctrine and Thailand during the second World War	
14. Development of Burmese Nationalist Movement and its Independence	14.1 The emergence of nationalist movement 14.2 Formation of Deqin Party and its activities 14.3 Development of nationalist movement during the Japanese Occupation 14.4 Independence of Burma	
15. Development of Indochinese Nationalist Movement	15.1 Indochinese nationalism — The rise of nationalism — Founding of political parties and activities 15.2 Indochinese Peninsula during WWII 15.3 Battle of Dien Bien Phu and the end of the French colonial rule	
16. Political, Economic and Social Development of the Republic of the Philippines	16.1 Two-party system and socio-economic development during constitutional democracy period 16.2 The Philippines under the 20-year rule of Marcos	
17. Political, Economic and Social Development of Indonesia	17.1 The political change of Indonesia after independence — The political turbulence after the independence — The political change in the Sukarno era — The 930 incident and the rise of Sukarno — The political development under the new order	

Topic	Summary	Remarks
18. From Malaya to Malaysia and Independence of Singapore	18.1 Independence of Malaysia and post-war British North Borneo — The launch of electoral system — The independence negotiation, constitution and independence of nation — Three states of North Borneo become British colony 18.2 Establishment of Malaysia 18.3 Post-independence political and socio-economic development — Political, economic and social situation and May 13 Incident — Formation of the Barisan Nasional and Malaysia in the 70s' — Malaysia under the leadership of Dr Mahathir 18.4 Post-independence educational and cultural development — Educational development — Cultural development 18.5 Self-rule, independence and nation building of Singapore	
19. Burma from Multi-party Democracy to Military Dictatorship	19.1 Ne Win's military junta took over power	
20. The Political and Social Development of Post-war Thailand	20.1 The era of military dictatorship	
21. The Second Indochina War and Post-war Development	21.1 The Anti-American War	
22. Southeast Asian and Regional Cooperation After WWII	22.1 Southeast Asia after WWII 22.2 Southeast Asian countries' cooperation bodies	

Part II: History of China

The History textbook *History of China* published by the United Chinese School Committees' Association of Malaysia (UCSCAM) is used as the basis for setting the questions.

Topic	Summary	Remarks
23. The Rise and Fall of Xia, Shang, Zhou Dynasties	23.1 The Western Zhou system 23.2 The cultures of the Xia, Shang, Zhou Dynasties	
24. Spring and Autumn Period and Warring States Period	24.1 Its dictatorships and the 7 major states 24.2 Its economy and Shang Yang's Reforms 24.3 Its culture	
25. Establishment of Centralized Imperial Rule --Qin Dynasty	25.1 The unification of China of the First Emperor and the imperial rule 25.2 The historical influence of the Qin Dynasty 25.3 The fall of the Qin Dynasty	
26. The Rise and Fall of Han Dynasty and Social Economy and Culture of Qin Han	26.1 Establishment of the Western Han Dynasty 26.2 The rise and fall of the Eastern Han Dynasty 26.3 Economic and cultural exchanges between Western – Eastern Han and the outside world 26.4 The culture during the Qin Han Period	

Topic	Summary	Remarks
28. Sui Tang Dynasties	28.1 Short-lived prosperity of the Sui Dynasty 28.2 The creation and the golden age of the Tang Dynasty 28.3 Development of the Tang Dynasty 28.4 Rebellion and the fall of the Tang Dynasty 28.5 Socio-economic development of the Tang Dynasty 28.6 Socio-economic exchange between Sui Tang and various countries 28.7 The culture of the Sui Tang Dynasties	Subjective questions: The occurrence of Rebellion is not tested in the exam.
29. Song Dynasty	29.1 The centralized power of Emperor Taizu of Song and its influence 29.2 Wang Anshi Reform 29.3 Relationships between Liao Xia Jin and Song, Song of the reign existed 29.4 The culture of the Song Dynasty	
30. Yuan Dynasty	30.1 The reign and fall of the Yuan Dynasty 30.2 The development of communication between East and West during the Yuan Dynasty	
31. Ming Dynasty Under the Absolute Monarchy and Foreign Relations	31.1 Authoritarian politics of the Ming Dynasty 31.2 Political Situation of the Ming Dynasty — Court eunuchs' autocratic rule — Crisis of Tumubao — The demise of the Ming Dynasty 31.3 Ming foreign relations — Admiral Zheng He to the western ocean —The Japanese pirate raid —The arrival of European missionaries	
32. The Rise and Fall of Qing Dynasty	32.1 The rise of Manchu clan and unification of the Qing Dynasty 32.2 The policy of the early Qing Dynasty	
33. Cultures of Yuan Ming Qing Dynasties	33.1 The culture of the Yuan Dynasty 33.2 The culture of the Ming Dynasty 33.3 The culture of the early Qing Dynasty	
34. Invasion of Western Powers and China's Response	34.1 The Opium War 34.2 The rise and fall of Taiping Heavenly Kingdom 34.3 The Battle of Anglo-French Army 34.4 The Westernisation Movement 34.5 China's border crisis	
35. Reformation, Revolution and the Fall of Qing Dynasty	35.1 The Sino-Japanese War 35.2 Foreign powers carved up China 35.3 Wuxu Reform 35.4 The Boxers and the Battle of Eight-Nation Alliance 35.5 Sun Yat-sen and the Chinese Revolutionary Alliance 35.6 Constitutional movement in late Qing Dynasty 35.7 Xinhai Revolution and its historical meaning 35.8 Formation of the Republic of China and Yuan Shikai usurped power 35.9 The post-Qing dynasty culture	

Topic	Summary	Remarks
36. The Political Situation of Early Republic and Battle of Northern Expedition	36.1 Yuan Shikai's ascendancy 36.2 The warlord disputes and their influences 36.3 The foreign relations of the early Republic 36.4 The New Cultural Movement and the May Fourth Movement 36.5 Battle of Northern Expedition and the relationship between the Nationalist Party and the Chinese Communist Party	
37. The Japanese Invasion and Founding of the Republic of China	37.1 The Japanese invasion of China 37.2 Xi'an Incident and the Anti-Japanese War 37.3 The Chinese Civil War and the formation of the People's Republic of China	Subjective questions: The occurrence of the Chinese Civil War is not tested in the exam.
38. Development on Both Sides of the Taiwan Straits in the Past 50 Years	38.1 The Three Red Banners campaign 38.2 10 Years of the Cultural Revolution 38.3 China's Open Door Policy 38.4 The transformation of Taiwan	

Part II: World History

The History textbook *World History* published by the United Chinese School Committees' Association of Malaysia (UCSCAM) is used as the basis for setting the questions.

Topic	Summary	Remarks
39. Towards the Modern Era (I)	39.1 The Renaissance — Its meaning and reason why it originated in Italy — The Puritan Revolution and Cromwell's short-lived rule 39.2 The Nationalist Countries — Meaning and background of formation — The formation of Britain and France Nationalist Countries	
40. Towards the Modern Era (II)	40.1 Geographic Discovery — Its motives, causes, occurrence and effects 40.2 Religious reformation — Its background, outbreak and effects — Factions of new religion and its propagation — The reformation of the Roman Catholic Church — The outbreak of Thirty Years' War and its effects 40.3 Formation of European dictatorial rule 40.4 Education and culture of the 17th and 18th century Europe — The establishment of Rationalism — The emergence of the Enlightenment movement	
41. The Bourgeoisie Revolution (I)	41.1 The revolution of 17th century England and establishment of constitutional monarchy — The Stuart Dynasty authoritarian monarchy — The Puritan Revolution and Cromwell's short-lived rule — The causes and occurrences of the Glorious Revolution — Establishment of constitutional politics in Britain 41.2 The American Revolution (the American War of Independence) — Establishment of colonies in North America — Formation of American people — The causes, outbreak and meaning of the American War of Independence — The 1787 Constitution	Subjective questions: The American War of Independence is not tested in the exam.

Topic	Summary	Remarks
42. The Bourgeoisie Revolution (II)	42.1 The French Revolution 　— The causes, outbreak and its meaning 42.2 The Napoleonic Wars and their effects 　— Napoleon's ascendancy 　— Napoleon's conquest of Europe and its effects 　— Napoleon's decline and his fall	Subjective questions: The evolution of the French Revolution is not tested in the exam.
43. The Industrial Revolution and Its Effects	43.1 The Industrial Revolution 　— The reasons why The first Industrial Revolution occurred in Great Britain 　— The effects of the Industrial Revolution 43.2 The creation of Capitalism and emergence of new thinking 　— Mercantilism 　— Liberalism 　— The creation of capitalism	
44. Liberalism and Nationalism (I)	44.1 Vienna Conference 　— The principles and effects 　— Establishment of Four-nation Alliance 　— The Cairo Declaration 44.2 Europe in 1830 　— The July Revolution in France and its effects 　— The Parliamentary Reform in Britain 44.3 Labor movement and socialism 　— The emergence of labor movement 　— The Chartist Movement in Britain 　— The emergence of Socialist ideologies 44.4 France's February Revolution of 1848	
45. Liberalism and Nationalism (II)	45.1 Unification of Germany 　— Foundation of unification movement 　— The rule of Prussia 　— The process and meaning of unification 45.2 Unification of Italy 　— Italy after the 1848 revolution 　— The occurrences of unification movement 45.3 The post-independence United States and its development 　— Westward expansion 　— The outbreak of the American Civil War 　— The American overseas expansion and the US hegemony 45.4 The 19th century European art and culture 　— Science 　— Literature	Subjective questions: The occurrence of American Civil War is not tested in the exam.
46. Asian and Latin American Countries under the Power of European Powers	46.1 The modernization of Japan 　— The Shogunate system and its policy 　— Semi-colony crisis in the late Shogunate period 　— The Meiji Restoration 　— The prosperity of Japan and its external expansion	

Topic	Summary	Remarks
47. Asia and Africa, the Rise of New Imperialism	47.1 The rise of New Imperialism, the background and its characteristics	
48. The First World War	48.1 The causes and background of the First World War	
	48.2 The outbreak of the war, US joined the war and the end of the war	
	48.3 The Paris Peace Conference and the League of Nations	
	48.4 The effects of the war	
49. The Russian Revolution and Establishment of the Soviet Union	49.1 The background of the revolution	
	49.2 Two revolutions in 1917	
	49.3 Consolidation of the Soviet power	
	49.4 Stalin comes to power	
50. Post-war Ethnic Movement and Development of Capitalist Countries	50.1 Ethnic movement around the world — India's Non-Cooperation Movement	
	50.2 US economic development and Roosevelt's New Deal	
	50.3 The emergence of the fascism in Italy	
	50.4 The emergence of the Nazi Germany	
	50.5 Military dictatorship and fascism in Japan	
51. The Second World War	51.1 Pre-war international situation — The collapse of collective security system — The policy of Great Britain, France and the US — The intensification of fascist aggression of Germany, Italy and Japan	
	51.2 The outbreak and expansion of the war — European battlefield — Asian and Pacific battlefield — Formation of Anti-Fascist Alliance of the world	
	51.3 The end of World War II and its effects	
52. The World After World War II	52.1 The establishment of the United Nations, its mission, principles and structure	
	52.2 Disintegration of Germany and the Berlin crisis	
	52.3 West Germany and economic reconstruction of Japan	
	52.4 Independence of South Asian countries	
	52.5 Formation and confrontation of two blocs	
53. Integration and Disintegration of the World's Various Forces, Reform and Trends	53.1 The emergence of the Third World	
	53.2 Regional integration — Integration of Europe — North-South dialog and cooperation	
	53.3 The end of the Cold War — The lessening and the end of the Cold War — The drastic change of Eastern Europe in 1989 — The disintegration of the USSR	
	53.4 The emergence of the Pacific region — Japan became economic powerhouse	
	53.5 Post-war technological revolution and social and cultural development	

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL
MATHEMATICS SYLLABUS

Ⅰ Syllabus Description

The Senior Middle Level Mathematics syllabus is to assess the level of Independent Chinese Secondary School students' knowledge and ability after completing three years of high school Mathematics curriculum.

Ⅱ Exam Objectives

1. Basic Knowledge and Skills
   1.1 Demonstrating knowledge and understanding of basic algebra, trigonometry, analytic geometry, probability and statistics, and calculus
   1.2 Demonstrating ability to perform basic computing, data processing, interpretation or draw diagrams, etc. according to certain rules and procedures
   1.3 Demonstrating understanding of the basic mathematical thinking and mathematical methods
   1.4 Demonstrating ability to solve simple application

2. Mathematical Thinking Ability
   2.1 Demonstrating use of appropriate mathematical thinking, mathematical methods and data to solve problems based on conditions
   2.2 Demonstrating the ability to distinguish basic figures from complex figures and analyse the relationships between their basic elements
   2.3 Demonstrating the ability to apply logical thinking to perform correct inference or proof
   2.4 Demonstrating the ability to apply the mathematical knowledge, select effective strategies and use reasoning skills to solve problems, evaluate the problem-solving process and rationality

3. Comprehensive ability of problem solving
   3.1 Demonstrating the ability to utilise of mathematical knowledge and methods in different fields to solve problems

Ⅲ Structure of Exam Paper

This subject comprises two papers:

Paper 1: Multiple-choice Questions（40%）.. Duration: 1 hr
　　　　Answer all 20 questions.

Paper 2: Subjective Questions（60%）... Duration: 2 hrs
　　　　This paper consists of two sections：
　　　　Section A　Compulsory（20%）
　　　　　　　　　Answer all five questions.
　　　　Section B　Elective　（40%）
　　　　　　　　　Answer any four, but not more than four out of the seven questions.

Ⅳ Exam Content

1. Algebra

Subject Matter	Knowledge Content
1.1 Quadratic Equations in One Variable	1.1.1 Understand the solving methods of quadratic equations in one variable 1.1.2 Apply the discriminant of quadratic equation 1.1.3 Understand the relationship between roots and coefficients of quadratic equations in one variable
1.2 Polynomials	1.2.1 Perform the operations of polynomials 1.2.2 Perform factorisation of cubic polynomials in one variable 1.2.3 Solve the cubic equations in one variable
1.3 Rational Expressions	1.3.1 Perform the four operations of rational expressions 1.3.2 Understand the solving methods of rational equations
1.4 Irrational Expressions	1.4.1 Perform the radical operations 1.4.2 Understand the methods of rationalising denominators 1.4.3 Find the square roots of quadratic surds
1.5 Sequences and Series	1.5.1 Understand the general form of Arithmetic sequences and sum of Arithmetic series/ progressions and their applications 1.5.2 Understand the general form of Geometric sequences and sum of Geometric series/ progressions and their applications
1.6 Matrices and Determinants	1.6.1 Understand the concept of matrices 1.6.2 Perform the matrices operations [the calculation of the sum and subtraction, scalar products, products (where appropriate) of matrices] 1.6.3 Understand the methods for finding the inverses of nonsingular 2 by 2 matrices 1.6.4 Find the solutions of systems of linear equations in two variables with inverse matrices 1.6.5 Compute the second order determinants and third order determinants
1.7 Systems of Equations	1.7.1 Solve the systems of equations in two variables which consist of linear equation and quadratic equation 1.7.2 Solve the systems of equations in three variables
1.8 Inequalities	1.8.1 Understand the properties of inequalities 1.8.2 Solve the linear inequalities in one variable and systems of inequalities in one variable 1.8.3 Solve the quadratic inequalities in one variable 1.8.4 Solve the linear inequalities in two variables and systems of inequalities in two variables
1.9 Functions	1.9.1 Understand the definitions and notations of functions 1.9.2 Find the domains and ranges of functions 1.9.3 Recognise the graphs of functions 1.9.4 Understand the concept of composite functions and their calculations
1.10 Exponents and Logarithms	1.10.1 Understand the properties and laws of exponents and logarithms 1.10.2 Understand the change-of-base formula of logarithms 1.10.3 Solve the exponential equations which can be written as $a^x = b$

2．Trigonometry

Subject Matter	Knowledge Content
2.1 Angles and Their Measure	2.1.1 Convert between radian and degree 2.1.2 Understand the formulas of the lengths of arcs and areas of sectors
2.2 Trigonometric Functions	2.2.1 Understand the definitions of the trigonometric functions 2.2.2 Know the exact values of trigonometric functions of special angles (0°, 30°, 45°, 60°, 90°) to perform operations 2.2.3 Determine the signs value of the trigonometric functions and compute their values 2.2.4 Recognise the graphs of trigonometric functions 2.2.5 Understand the elementary trigonometric identities
2.3 Solutions of Any Triangle	2.3.1 Solve the questions of right-angled triangles and related measurement problems 2.3.2 Understand the applications of Sine Rule and Cosine Rule 2.3.3 Understand the formulas for areas of triangles
2.4 Solid Geometry	2.4.1 Find the angles between straight lines and planes, angles between two planes

3．Analytic Geometry

Subject Matter	Knowledge Content
3.1 Rectangular Coordinate System and Areas of Polygons	3.1.1 Understand the distance formula between two points 3.1.2 Understand the formulas of internal and external divisions of a line 3.1.3 Use the vertex coordinates to find the areas of triangles and polygons
3.2 Straight Lines	3.2.1 Understand the definition of gradients 3.2.2 Understand the conditions of parallelisms and perpendicularities of two straight lines 3.2.3 Understand the methods to find the equations of straight lines 3.2.4 Find the gradients and intercepts from equations of straight lines 3.2.5 Find the intersection point of two straight lines

4．Statistics and Probabilities

Subject Matter	Knowledge Content
4.1 Statistics	4.1.1 Produce the tables of the cumulative frequency distributions, frequency polygons and cumulative frequency polygons / ogives 4.1.2 Understand the measures of central tendency 4.1.3 Understand the measures of dispersion 4.1.4 Understand the concept and calculations of statistical indices
4.2 Probabilities	4.2.1 Understand the concepts of sample spaces, events and probabilities 4.2.2 Solve simple probability questions 4.2.3 Understand the Addition Rule and Multiplication Rule

5．Calculus

Subject Matter	Knowledge Content
5.1 Differentiations	5.1.1 Understand the concept of derivatives
	5.1.2 Understand the differentiation formulas of exponential functions
	5.1.3 Understand the differentiation rules
	5.1.4 Apply the Chain Rule to find the differentiation of composite functions
	5.1.5 Find the second derivatives
5.2 Applications of Differentiations	5.2.1 Find the tangent and normal of a point on a curve
	5.2.2 Determine the increase and decrease of functions
	5.2.3 Find the maxima and minima of functions
5.3 Indefinite Integrals	5.3.1 Understand the concept of indefinite integrals
	5.3.2 Understand the integration formulas of exponential functions
	5.3.3 Understand the integration rules
5.4 Definite Integrals and Their Applications	5.4.1 Understand the relationship between indefinite integrals and definite integrals
	5.4.2 Understand the properties and operations of definite integrals
	5.4.3 Apply the definite integrals to find areas (figures are provided)

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECODARY SCHOOLS
SENIOR MIDDLE LEVEL

PHYSICS SYLLABUS

Ⅰ Nature of Examination

The purpose of the senior middle three UEC examination for Physics is to assess the level of knowledge and skills of students of Chinese Independent High Schools after completing the three-year Physics curriculum at senior middle level. The results of the assessment can serve as a reference for the candidates' choice of further studies or careers.

Ⅱ Examination Objectives

1. Basic Knowledge
   1.1 Understand the meanings of basic concepts of Physics, and the meanings and general calculation of basic laws and formulas
   1.2 Understand the physical states, processes and patterns as indicated in graphs and diagrams

2. Basic Skills
   2.1 Carry out analysis, assessment and inference based on physical principles
   2.2 Produce diagrams based on physical patterns, and carry out analysis, assessment and inference
   2.3 Solve relevant physical problems with mathematical skills

3. Combined Skills
   3.1 Break complicated problems down into multiple simple problems to be solved
   3.2 Carry out analysis of the various possibilities for specific problems, and produce an assessment
   3.3 Analyse and handle the operation, processes, phenomena or data of experiments, and obtain conclusions

Ⅲ Structure of Test

The test for this subject is divided into two papers:
Paper 1: Multiple Choice Questions (50%) ………………………………… Duration: 1 hour
      Answer all 25 questions.

Paper 2: Essay Questions (50%) …………………………………………… Duration: 1 hour 40 minutes
      Section I: Compulsory Questions (30%)
          Answer all 6 questions.
      Section II: Essay Questions (20%)
          Group A: Geometric Optics, Mechanics, Thermal Physics
             Answer 1 out of 2 questions.
          Group B: Wave Mechanics, Electromagnetism, Modern Physics
             Answer 1 out of 2 questions.

Ⅳ Contents of Examination

1. Measurement

Topic	Knowledge Assessed	Assessment Objectives
1.1 Measurement	1.1.1 Calculation and units of measurement of basic physical quantities	Understanding & Application
	1.1.2 Errors and significant figures	Understanding
	1.1.3 Fundamental units of physical quantities	Understanding & Application
	1.1.4 Scientific notation and order of magnitude	Understanding

2. Mechanics

Topics	Knowledge Assessed	Assessment Objectives
2.1 Kinematics	2.1.1 Particle kinematics and frames of reference	Understanding
	2.1.2 Distance and displacement	Understanding
	2.1.3 Speed and velocity	Understanding
	2.1.4 Patterns of the uniform linear motion and its calculation	Understanding, Application
	2.1.5 Accelerated and uniformly accelerated linear motion and their calculations	Understanding, Application
	2.1.6 Diagrams of linear motions	Application, Analysis
	2.1.7 Free fall motion and its calculation	Understanding, Application, Analysis
	2.1.8 Vertical uniformly accelerated linear motion and its calculation	Understanding, Application, Analysis
	2.1.9 Trajectory movement and its calculation	Understanding, Application, Analysis
	2.1.10 Uniform circular motion and its calculation	Understanding, Application, Analysis
2.2 Dynamics	2.2.1 Types of force (free-body diagrams)	Understanding
	2.2.2 Friction and its calculation	Understanding, Application, Analysis
	2.2.3 Inertia and Newton's First Law of Motion	Understanding
	2.2.4 The concept of momentum	Understanding
	2.2.5 Newton's Second Law of Motion and its calculation	Understanding, Application, Analysis
	2.2.6 Newton's Third Law of Motion	Understanding, Application
	2.2.7 Centripetal force and its calculation	Understanding, Application, Analysis
	2.2.8 The law of universal gravitation and its calculation	Understanding, Application
2.2 Dynamics	2.2.9 Work and power, and their calculations	Understanding, Application, Analysis
	2.2.10 The work-energy theorem and its calculation	Application, Analysis
	2.2.11 Kinetic and potential energy, and their calculations	Understanding
	2.2.12 The principle of conservation of mechanical energy and its calculation	Application, Analysis
	2.2.13 The relationship between impulse and momentum	Understanding, Application
	2.2.14 The principle of conservation of momentum and its calculation	Application, Analysis
	2.2.15 Elastic and inelastic collision and their calculations	Application, Analysis
	2.2.16 Rigid body rotation	Understanding
2.3 Statics	2.3.1 Resultants and components of force systems	Understanding, Application
	2.3.2 Equilibrium of concurrent forces and its calculation	Application, Analysis
	2.3.3 Torque equilibrium, equilibrium of coplanar force systems and their calculations	Application, Analysis
	2.3.4 Parallel force system and its calculation	Application, Analysis
2.4 Fluid Mechanics	2.4.1 Liquid pressure and Pascal's law, and their calculations	Understanding, Application
	2.4.2 Archimedes' principle and its calculation	Understanding, Application, Analysis
	2.4.3 Gas pressure and its calculation	Understanding, Application
	2.4.4 The concept of steady flow	Understanding
	2.4.5 The continuity equation and Bernoulli equation, and their calculations	Application

3. Thermal Physics

Topic	Knowledge Assessed	Assessment Objectives
3.1 Temperature and Heat	3.1.1 Concepts of temperature and internal energy	Understanding
	3.1.2 Principles of temperature measurement in thermometers and its calculation	Understanding
	3.1.3 Concepts of specific heat capacity and heat capacity, and their calculations	Understanding, Application, Analysis
	3.1.4 The concept of latent heat and its calculation	Understanding, Application, Analysis
3.2 Heat Transfer	3.2.1 Heat conduction and its calculation	Understanding, Application, Analysis
	3.2.2 Thermal convection and thermal radiation	Understanding
3.3 Thermal Expansion	3.3.1 Thermal expansion of solids and liquids and their calculations	Understanding, Application, Analysis
3.4 Gas Laws	3.4.1 Gas laws and their calculations	Understanding, Application, Analysis
	3.4.2 Diagrams of gas laws	Application, Analysis
3.5 Kinetic Theory of Gases and Thermodynamics	3.5.1 The ideal gas model	Understanding
	3.5.2 Gas pressure and its calculation	Application, Analysis
	3.5.3 The relationship between the kinetic energy, internal energy and temperature of gas molecules	Understanding, Application
	3.5.4 The first law of thermodynamics and its calculation	Understanding
	3.5.5 The application of the first law of thermodynamics to the four processes of the ideal gas	Application, Analysis

4. Geometric Optics

Topic	Knowledge Assessed	Assessment Outcomes
4.1 The Rectilinear Propagation of Light	4.1.1 The rectilinear propagation movement of light	Understanding
4.2 Reflection	4.2.1 The patterns of the reflection of light	Understanding
	4.2.2 The principles of the formation of images through plane and spherical mirrors	Understanding
	4.2.3 The calculation and optical path diagram of the formation of images through mirrors	Application, Analysis
4.3 Refraction	4.3.1 The patterns of the refraction of light	Understanding
	4.3.2 The calculations of the absolute index of refraction and relative index of refraction of a medium	Application, Analysis
	4.3.3 The total internal refraction of light and its calculation	Understanding, Application, Analysis
	4.3.4 The patterns of the refraction of prisms and its calculation	Understanding, Application, Analysis
	4.3.5 The phenomenon of dispersion	Understanding
	4.3.6 The principles of the formation of images through lens	Understanding
	4.3.7 The calculation and optical path diagram of the formation of images through lens	Application, Analysis
4.4 Formation of Images through Compound Lenses and Optical Instruments	4.4.1 The calculation and optical path diagram of the formation of images through compound lenses	Application, Analysis
	4.4.2 The formation of images through optical instruments and their calculations (spectacles, magnifying glasses, microscopes, telescopes)	Understanding, Application

5. Wave Mechanics

Topic	Knowledge Assessed	Assessment Objectives
5.1 Vibration	5.1.1 Characteristics of simple harmonic motion	Understanding
	5.1.2 Equations of simple harmonic motion and their calculations	Understanding, Application
	5.1.3 The energy of simple harmonic motion and its calculation	Understanding, Application
	5.1.4 The diagram of simple harmonic motion	Understanding, Application, Analysis
	5.1.5 The simple harmonic motion system	Understanding, Application, Analysis
	5.1.6 The phenomena of damping, forced vibration and resonance	Understanding
5.2 Mechanical Waves	5.2.1 The forward wave equation and its calculation	Understanding, Application
	5.2.2 The diagram of forward waves	Understanding, Application, Analysis
	5.2.3 The reflection, refraction, superposition, diffraction, interference and polarisation of waves	Understanding
	5.2.4 Standing waves and its calculation	Application, Analysis
	5.2.5 Sound waves	Understanding
	5.2.6 The Doppler effect and its calculation	Application, Analysis
5.3 Light Waves	5.3.1 The particle theory and wave theory of light	Understanding
	5.3.2 The interference of light waves and its calculation	Understanding, Application, Analysis
	5.3.3 The diffraction of light waves and its calculation	Understanding, Application
	5.3.4 The polarisation of light	Understanding
	5.3.5 The electromagnetic nature of light and the electromagnetic spectrum	Understanding

6. Electromagnetism

Topic	Knowledge Assessed	Assessment Objectives
6.1 Electrostatics	6.1.1 Electrostatic force and its calculation	Understanding, Application, Analysis
	6.1.2 Electric field intensity and its calculation	Understanding, Application, Analysis
	6.1.3 Electric potential and electric potential energy	Understanding, Application, Analysis
	6.1.4 The relationship between voltage and electric field intensity	Understanding, Application
	6.1.5 Charged particles and their movement in a uniform electric field	Application, Analysis
	6.1.6 Capacitors and capacitance, and its calculation	Understanding, Application
	6.1.7 The composition of a capacitor and its calculation	Application, Analysis
	6.1.8 The energy stored in a capacitor and its calculation	Understanding, Application
6.2 Constant Current	6.2.1 Current and the calculation of current strength	Understanding
	6.2.2 Ohm's law and its calculation	Understanding
	6.2.3 Calculation of resistance and the law of resistance	Understanding, Application
	6.2.4 Electrical work and electric power, and their calculations	Understanding, Application
	6.2.5 Closed circuits and Ohm's law, and their calculations	Understanding, Application
	6.2.6 Series and parallel circuits, and their calculations	Application, Analysis
	6.2.7 Kirchhoff's laws and their application	Application, Analysis
6.3 Magnetic Fields and Electromagnetic Induction	6.3.1 Magnetic induction and magnetic flux	Understanding
	6.3.2 Current-generating magnetic fields and its calculation	Understanding, Application, Analysis
	6.3.3 The force of magnetic fields on currents, and its application	Understanding, Application, Analysis
	6.3.4 The force of magnetic fields on electric charges in motion, and its movement	Understanding, Application, Analysis
	6.3.5 The phenomenon of electromagnetic induction	Understanding, Application
	6.3.6 Lenz's law	Understanding

Topic	Knowledge Assessed	Assessment Objectives
6.3 Magnetic Fields and Electromagnetic Induction	6.3.7 Faraday's law of electromagnetic induction and its calculation	Understanding, Application, Analysis
	6.3.8 The phenomenon of self-inductance	Understanding
	6.3.9 Alternative current and its parameters	Understanding
	6.3.10 RCL series AC circuits	Application, Analysis
	6.3.11 Principles of the function of transformers and its calculation	Understanding, Application
6.4 Simple Electronics	6.4.1 Characteristics of semi-conductors	Understanding
	6.4.2 Principles of the functions of diodes and transistors	Understanding

7. Modern Physics

Topic	Knowledge Assessed	Assessment Objectives
7.1 Quantum Physics	7.1.1 The photon theory and calculation of photon energy	Understanding, Application
	7.1.2 The photoelectric effect and its calculation	Understanding, Application, Analysis
	7.1.3 The wave-particle duality of light	Understanding
	7.1.4 Matter waves and its calculation	Application
7.2 Atomic Physics	7.2.1 The structure of atoms	Understanding
	7.2.2 The emission spectrum of atomic hydrogen	Understanding
	7.2.3 The Bohr Atomic Model	Understanding, Application
	7.2.4 Energy levels of hydrogen atoms	Application, Analysis
	7.2.5 Characteristics of X-Rays and the application of their diffraction	Understanding, Application
	7.2.6 The principles of the formation of lasers	Understanding
	7.2.7 The composition of the nucleus	Understanding
	7.2.8 Radioactivity and decay	Application, Analysis
	7.2.9 The nuclear reaction equation	Understanding
	7.2.10 Nuclear energy and its calculation	Application

THE UNIFIED EXAMINATION
MALAYSIAN INDEPENDENT CHINESE SECONDARY SCHOOLS
SENIOR MIDDLE LEVEL

PRINCIPLES OF ELECTRICITY

（Ⅰ）This subject comprises two papers:

Paper 1: Multiple-choice questions (60%) ·· Time allocated: 1 hour 30 minutes

      Attempt all the **forty (40)** questions.

      Direct Current (DC) Electricity: 26 ~ 30 questions.

      Alternating Current (AC) Electricity: 10 ~ 14 questions.

Paper 2: Subjective questions (40%) ·· Time allocated: 1 hour 15 minutes

      This paper is divided into two sections:

      Section A: Compulsory questions (16%)

            Attempt all the **two (2)** questions.

            Direct Current (DC) Electricity: 1 question

            Alternating Current (AC) Electricity: 1 question

      Section B: Elective questions (24%)

            Attempt any **three (3)** questions from the **five (5)** questions.

            Direct Current (DC) Electricity: 3 questions

            Alternating Current (AC) Electricity: 2 questions

（Ⅱ）**Syllabus**

Basic Electricity I

Topic	Contents	Remarks
1. Basic Electrical Concepts	1.1 Electrical Characteristics 1.2 Electrical Units 1.3 Electric Charges 1.4 Voltage 1.5 Current 1.6 Power 1.7 Electrical Energy and Efficiency 1.8 Basic Components and Symbols Recognition	
2. Resistance	2.1 Resistance and Conductance 2.2 Resistor Types 2.3 Ohm's Law 2.4 Temperature Coefficient of Resistance 2.5 Joule's Law	
3. Series and Parallel Circuits	3.1 Definitions and Characteristics 3.2 Voltage Source and Current Source 3.3 Kirchhoff's Voltage Law 3.4 Kirchhoff's Current Law 3.5 Y-△ Transformations 3.6 Wheatstone Bridge	

Topic	Contents	Remarks
4. DC Network Analysis	4.1 Loop Current Analysis 4.2 Nodal Analysis 4.3 Superposition Theorem 4.4 Thevenin's Theorem 4.5 Norton's Theorem 4.6 Thevenin-Norton Equivalent Circuit Transformations 4.7 Maximum Power Transfer Theorem	
5. Capacitance and Electrostatic	5.1 Electric Field and Electric Potential 5.2 Capacitor 5.3 Capacitance	
6. Inductance and Electromagnetism	6.1 Basic Concept of Electromagnetism Effect 6.2 Electromagnetic Effect 6.3 Electromagnetic Induction 6.4 Inductor 6.5 Inductance	

Basic Electricity II

Topic	Contents	Remarks
7. DC Transients	7.1 RC Transient Circuit 7.2 RL Transient Circuit	
8. Alternating Current (AC)	8.1 Concept of Power System 8.2 Waveform, Frequency and Period 8.3 Vector Arithmetic	
9. Basic AC Circuits	9.1 Pure Resistive AC Circuit 9.2 Pure Capacitive AC Circuit 9.3 Pure Inductive AC Circuit 9.4 RLC Series Circuit 9.5 RLC Parallel Circuit 9.6 RLC Series and Parallel Circuit Transformations 9.7 RLC Series and Parallel Circuit	
10. AC Power	10.1 Power of Pure Resistive AC Circuit 10.2 Power of Pure Inductive AC Circuit 10.3 Power of Pure Capacitive AC Circuit 10.4 AC Power of RLC AC Circuit 10.5 Complex Power 10.6 Methods of Power Factor Improvement	
11. Resonant Circuits	11.1 Series Resonance 11.2 Parallel Resonance 11.3 Series and Parallel Resonant Circuit	
Appendix A: Application of Basic Instruments (Practice)	A.1 Measurement and Application of Analog Multimeter A.2 Measurement and Application of Digital Multimeter A.3 Measurement and Application of Oscilloscope	