GRADE - 12	
SUBJECT	**SYLLABUS**
ENGLISH	**Total Marks (50)** **Reading Comprehension (16 Marks)** ● Unseen Passages (1. Factual & 2. Case based factual) **Writing (9 Marks)** ● Notice Writing ● Letter to the Editor ● Job Application & Biodata **Literature (25 Marks)** ● The Last Lesson ● My Mother at 66 ● The Third Level ● Lost Spring ● Poets & Pancakes ● A Thing of Beauty
MATHEMATICS	**Total Marks (50)** **Relations and functions (10 Marks)** ● Types of Relations ● Types of Functions ● Composition of Functions and Invertible Function **Inverse trigonometric functions (8 Marks)** ● principal value branches ● Properties of Inverse Trigonometric Functions **Continuity and differentiability (17 Marks)** ● Continuity ● Algebra of continuous functions ● Differentiability ● Derivatives of composite functions ● Derivatives of implicit functions

	● Exponential and Logarithmic Functions ● Derivatives of inverse trigonometric functions ● Derivatives of parametric functions ● Second order derivatives **Applications of derivatives (15 Marks)** ● Rate of Change of Quantities ● Increasing and Decreasing Functions ● Maxima and Minima ● Maximum and Minimum Values of a Function in a Closed Interval
APPLIED MATHEMATICS	**Total Marks (50)** ● **Number Quantification and numerical Application (15 Marks)** ● **Matrices (10 Marks)** ● **Determinant (10 Marks)** ● **Differentiation and its Application (15 Marks)**
ACCOUNTANCY	**Total Marks (50)** **Fundamentals of Partnership (14 Marks)** ● Partnership: features, Partnership Deed, Provisions of the Indian Partnership Act, 1932 in the absence of partnership deed, Fixed v/s fluctuating capital accounts, Preparation of Profit and Loss Appropriation Account-division of profit among partners,Calculation of interest on capital, interest on drawings,interest on loan, managers commission, guarantee of profits. ● Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio). **Goodwill - Nature and valuation (5 Marks)** ● Goodwill: Meaning, nature, factors affecting and methods of valuation-average profit,weighted Average, super profit and capitalisation **Accounting for shares Capital (16 Marks)** ● Features and types of companies. • Share and share capital: nature and types.• Accounting for share capital: issue and allotment of equity and preferences shares. Public subscription of shares - over subscription and under subscription of shares; issue at par and at

premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash. • Concept of Private Placement and Employee Stock Option Plan (ESOP), Sweat Equity. • Accounting treatment of forfeiture and reissue of shares. • Disclosure of share capital in the Balance Sheet of a company.

Accounting for Debentures (5 Marks)

- Debentures: Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures as collateral security

Analysis of Financial Statements & Financial statements of a Company: (10 Marks)

- Meaning, Nature, Uses and importance of financial Statement. Statement of Profit and Loss and Balance Sheet. Major headings and subheadings (as per Schedule III to the prescribed form with major headings and subheadings (as per Schedule III to the Companies Act, 2013) • Financial Statement Analysis: Meaning, Significance Objectives, importance and limitations.

PHYSICS	

Total Marks (50)

Electric charges and fields (15 Marks)

- Electric charges, Conservation of charge, Coulomb's law-force between two- point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential and capacitance (20 Marks)

- Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate

	capacitor with and without dielectric medium between the plates, energy stored in a capacitor. **Current electricity (15 Marks)** ● Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics ,electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.
BIOLOGY	**Total Marks (50)** **Sexual Reproduction in Plants (15 Marks)** ● Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation **Human Reproduction (10 Marks)** ● Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation; parturition; lactation. **Reproductive Health (10 Marks)** ● Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT **Principles of Inheritance (15 Marks)** ● Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple

	alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in human being, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans -thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.
CHEMISTRY	**Total Marks (50)** **Solutions (17 Marks)** ● Types of solutions, expression of concentration of solutions of solids in liquids, ● Solubility of gases in liquids, solid solutions, Raoult's law ● Colligative properties - relative lowering of vapor pressure, elevation of boiling point, ● Depression of freezing point, osmotic pressure, ● Determination of molecular masses using colligative properties ● Abnormal molecular mass, Van't Hoff factor **Electrochemistry (18 Marks)** ● Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells ● Relation between Gibbs energy change and EMF of a cell ● Conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law ● Electrolysis and law of electrolysis ● Dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion. **Haloalkanes and Haloarenes (15 Marks)** ● Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties ● Optical rotation mechanism of substitution reactions ● Haloarenes: Nature of C–X bond, substitution reactions ● Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.
BUSINESS STUDIES	**Total Marks (50)**

Part A - Unit 1:Nature and Significance of Management (13 Marks)

- Management - concept, objectives, and importance.
- Management as Science, Art and Profession
- Levels of Management
- Management functions-planning, organizing, staffing, directing and controlling
- Coordination- concept and importance

Unit 2: Principles of Management (13 Marks)

- Principles of Management - concept and significance
- Fayol's principles of management
- Taylor's Scientific management - principles and techniques

Unit 3: Business Environment (12 Marks)

- Business Environment- concept and importance
- Dimensions of Business Environment -
- Economic, Social, Technological, Political and Legal
- Demonetization - concept and features

Unit 4: Planning (12 Marks)

- Planning: Concept, importance and limitation
- Planning process
- Single use and Standing Plans. Objectives, Strategy, Policy, Procedure, Method, Rule, Budget and Programme.

ECONOMICS

Total Marks (50)

Unit 1- Part A: Introductory Macroeconomics (30 Marks)

- Basic concepts in macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation.
- Circular flow of income (two sector model);
- Methods of calculating National Income -Value Added or Product method, Expenditure method, Income method.
- Aggregates related to National Income: Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product
- (GDP) and Net Domestic Product (NDP) - at market price, at factor cost; Real and Nominal GDP
- GDP Deflator, GDP and Welfare

	Unit 2 - Money and Banking (15 Marks) ● Money – meaning and functions, supply of money - Currency held by the public and net demand deposits held by commercial banks. ● Money creation by the commercial banking system. ● Central bank and its functions- Bank of issue, Govt. Bank, Banker's Bank, Control of Credit through Bank Rate, Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), Repo Rate and Reverse Repo Rate, Open Market Operations, Margin requirement. **Unit 6 - Development Experience (1947-90) and Economic Reforms since 1991 (5 Marks)** ● A brief introduction of the state of the Indian economy on the eve of independence. ● Indian economic system and common goals of Five Year Plans.
INFORMATICS PRACTICES	**Total Marks (50)** **Unit 1: Data Handling using Pandas** ● Introduction to Python libraries **(5 Marks)** ● Pandas Series and its operations **(10 Marks)** ● Creation of DataFrames **(10 Marks)** ● Operations on DataFrames **(20 Marks)** ● Data Visualization Plotting using Matplotlib **(5 Marks)**
COMPUTER SCIENCE	**Total Marks (50)** **Python Tour I&II - Tuples - Dictionary - strings (20 Marks)** **Working with functions - Types of arguments - Types of functions (10 Marks)** **Exception handling - Python Libraries (5 Marks)** **File handling - Text file - Programs (15 Marks)**
PAINTING	**Total Marks (50)** **Still Life Painting (50 Marks)**
PSYCHOLOGY	**Total Marks (50)**

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	Variations in Psychological Attributes (25 Marks) ● Individual Differences in Human Functioning ● Assessment of Psychological Attributes ● Intelligence ● Theories of Intelligence ● Individual Differences in Intelligence ● Culture and Intelligence ● Emotional Intelligence ● Special Abilities ● Creativity **Self and Personality (25 Marks)** ● Self and Personality ● Concept of Self ● Cognitive and Behavioural aspects of Self ● Culture and Self ● Concept of Personality ● Major Approaches to the Study of Personality ● Assessment of Personality
ARTIFICIAL INTELLIGENCE	**Total Marks (50)** **Employability Skills (20 Marks)** ● Communication Skills,Self-Management Skills ● ICT Skills, Entrepreneurial Skills, Green Skills **Data Science Methodologies (30 Marks)** ● Introduction to Data Science Methodology ● Steps for Data Science Methodology ● Model Validation Techniques ● Model PerformanceEvaluation Metrics
MARKETING	**Total Marks (50)** **Communication skills IV (10 Marks)** ● Writing skills to the Following ● Sentence ● Kinds of Sentences ● Parts of Speech ● Construction of a Paragraph

- Phrase
- Parts of a sentence
- Articles

Self-Management Skills-IV (5 Marks)

- The Basic personality traits,types and disorders
- Meaning of personality
- How personality influence others
- Basic personality test
- Personality disorder

ICT Skills-IV (5 Marks)

- Perform tabulation using spreadsheet application
- Prepare and presentation using presentation application

Entrepreneurial Skills-IV (10 Marks)

- The general and entrepreneurial behavioral
- competencies
- knowledge of self-assessment of behavioral
- Competencies

Green Skills-IV (10 Marks)

- The role and importance of green jobs in different
- sectors.
- The role and importance of green jobs in different
- Sectors.

Part B - Product (10 Marks)

- Introduction, Product life cycle and packaging, &Product process