**Karnataka Board Syllabus for Class 11**

**Accountancy Part 1**

* Chapter 1: Introduction to Accounting
* Chapter 2: Theory Base of Accounting
* Chapter 3: Recording of Transactions – I
* Chapter 4: Recording of Transactions – II
* Chapter 5: Bank Reconciliation Statement
* Chapter 6: Trial Balance and Rectification of Errors
* Chapter 7: Depreciation, Provisions and Reserves
* Chapter 8: Bill of Exchange

**Accountancy Part 2**

* Chapter 9: Financial Statements – I
* Chapter 10: Financial Statements – II
* Chapter 11: Chapter 11: Accounts from Incomplete Records
* Chapter 12: Applications of Computers in Accounting
* Chapter 13: Applications of Computers in Accounting
* Chapter 14: Computerised Accounting System

**Maths**

1. Bridge Course

2. Sets

3. Relations and Functions

4. Trigonometric Functions

5. Straight Lines

6. Limits and Derivatives

7. Liner Inequalities

8. Permutations and Combinations

9. Sequence and Series

10. Complex Numbers and Quadratic Equations

11. Introduction to 3 Dimensional Geometry

12. Statistics

13. Probability

Appendix 1: Infinite Series

A.1.1 Introduction

A.1.2 Binomial Theorem for any Index

A.1.3 Infinite Geometric Series

A.1.4 Exponential Series

A.1.5 Logarithmic Series

Appendix 2: Mathematical Modelling

A.2.1 Introduction

A.2.2 Preliminaries

A.2.3 What is Mathematical Modelling

## **Physics Syllabus**

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| **Unit 1 PHYSICAL WORLD**  1.1 What is physics ?  1.2 Scope and excitement of physics (deleted)  1.3 Physics, technology and society (deleted)  1.4 Fundamental forces in nature  1.5Nature of physical laws (deleted-To be discussed as a part of Introduction and integrated with other topics) |
| **Unit 2 UNITS AND MEASUREMENTS**  2.1 Introduction  2.2 The International System of Units  2.3 Measurement of length  2.4 Measurement of mass  2.5 Measurement of time  2.6 Accuracy, precision of instruments and errors in measurement  2.7 Significant figures  2.8 Dimensions of physical quantities  2.9 Dimensional formulae and dimensional equations  2.10 Dimensional analysis and its applications |
| **Unit 3 MOTION IN A STRAIGHT LINE**  3.1 Introduction  3.2 Position, path length and displacement  3.3 Average velocity and average speed  3.4 Instantaneous velocity and speed  3.5 Acceleration  3.6 Kinematic equations for uniformly accelerated motion  3.7 Relative velocity  Deleted portion- Frame of reference: Position-time graph, speed and velocity |
| **Unit 4 MOTION IN A PLANE**  4.1 Introduction  4.2 Scalars and vectors  4.3 Multiplication of vectors by real numbers  4.4 Addition and subtraction of vectors – graphical method  4.5 Resolution of vectors  4.6 Vector addition – analytical method  4.7 Motion in a plane  4.8 Motion in a plane with constant acceleration  4.9 Relative velocity in two dimensions  4.10 Projectile motion  4.11 Uniform circular motion |
| **Unit 5 LAWS OF MOTION**  5.1 Introduction  5.2 Intuitive Concept of Force (deleted)  5.3 The law of inertia (deleted)  5.4 Newton’s first law of motion (deleted)  5.5 Newton’s second law of motion (deleted)  5.6 Newton’s third law of motion (deleted)  5.7 Conservation of momentum  5.8 Equilibrium of a particle  5.9 Common forces in mechanics  5.10 Circular motion  5.11 Solving problems in mechanics |
| **Unit 6 WORK, ENERGY AND POWER**  6.1 Introduction  6.2 Notions of work and kinetic energy : The work-energy theorem  6.3 Work  6.4 Kinetic energy  6.5 Work done by a variable force  6.6 The work-energy theorem for a variable force  6.7 The concept of potential energy  6.8 The conservation of mechanical energy  6.9 The potential energy of a spring  6.10 Various forms of energy : the law of conservation of energy  6.11 Power  6.12 Collisions |
| **Unit 7 SYSTEM OF PARTICLES AND ROTATIONAL MOTION**  7.1 Introduction  7.2 Centre of mass  7.3 Motion of centre of mass  7.4 Linear momentum of a system of particles  7.5 Vector product of two vectors  7.6 Angular velocity and its relation with linear velocity  7.7 Torque and angular momentum  7.8 Equilibrium of a rigid body  7.9 Moment of inertia  7.10 Theorems of perpendicular and parallel axes (deleted-Statement of parallel and perpendicular axes theorems and their applications)  7.11 Kinematics of rotational motion about a fixed axis  7.12 Dynamics of rotational motion about a fixed axis  7.13 Angular momentum in case of rotation about a fixed axis  7.14 Rolling motion |
| **Unit 8 GRAVITATION**  8.1 Introduction  8.2 Kepler’s laws (deleted -Kepler’s Laws of Planetary Motions)  8.3 Universal law of gravitation  8.4 The gravitational constant  8.5 Acceleration due to gravity of the earth (deleted)  8.6 Acceleration due to gravity below and above the surface of earth  8.7 Gravitational potential energy  8.8 Escape speed  8.9 Earth satellite  8.10 Energy of an orbiting satellite  8.11 Geostationary and polar satellites  8.12 Weightlessness |
| **Unit 9 MECHANICAL PROPERTIES OF SOLIDS**  9.1 Introduction  9.2 Elastic behaviour of solids (deleted)  9.3 Stress and strain  9.4 Hooke’s law  9.5 Stress-strain curve  9.6 Elastic moduli (deleted-hear modulus of rigidity,Poisson’s ratio; elastic energy)  9.7 Applications of elastic behaviour of materials |
| **Unit 10 MECHANICAL PROPERTIES OF FLUIDS**  10.1 Introduction  10.2 Pressure  10.3 Streamline flow  10.4 Bernoulli’s principle  10.5 Viscosity  10.6 Reynolds number  10.7 Surface tension |
| **Unit 11 THERMAL PROPERTIES OF MATTER**  11.1 Introduction  11.2 Temperature and heat (deleted)  11.3 Measurement of temperature  11.4 Ideal-gas equation and absolute temperature  11.5 Thermal expansion  11.6 Specific heat capacity  11.7 Calorimetry  11.8 Change of state  11.9 Heat transfer (deleted- conduction, convection, radiation)  11.10 Newton’s law of cooling |
| **Unit 12 THERMODYNAMICS**  12.1 Introduction  12.2 Thermal equilibrium  12.3 Zeroth law of thermodynamics  12.4 Heat, internal energy and work  12.5 First law of thermodynamics  12.6 Specific heat capacity  12.7 Thermodynamic state variables and equation of state  12.8 Thermodynamic processes  12.9 Heat engines  12.10 Refrigerators and heat pumps  12.11 Second law of thermodynamics  12.12 Reversible and irreversible processes  12.13 Carnot engine |
| **Unit 13 KINETIC THEORY**  13.1 Introduction  13.2 Molecular nature of matter  13.3 Behaviour of gases  13.4 Kinetic theory of an ideal gas  13.5 Law of equipartition of energy  13.6 Specific heat capacity  13.7 Mean free path |
| **Unit 14 OSCILLATIONS**  14.1 Introduction  14.2 Periodic and oscillatory motions  14.3 Simple harmonic motion  14.4 Simple harmonic motion and uniform circular motion  14.5 Velocity and acceleration in simple harmonic motion  14.6 Force law for simple harmonic motion  14.7 Energy in simple harmonic motion  14.8 Some systems executing SHM  14.9 Damped simple harmonic motion  14.10 Forced oscillations and resonance |
| **Unit 15 WAVES**  15.1 Introduction  15.2 Transverse and longitudinal waves  15.3 Displacement relation in a progressive wave  15.4 The speed of a travelling wave  15.5 The principle of superposition of waves  15.6 Reflection of waves  15.7 Beats  15.8 Doppler effect (deleted)  Deleted- Fundamental mode and harmonics |

## **Chemistry Syllabus**

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| **Unit 1 Some Basic Concepts of Chemistry (Term 1)**  Importance and scope of chemistry. Historical approach to particulate nature of matter, laws of chemical combination, Dalton’s atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses. Mole concept and molar mass; percentage composition and empirical and molecular formula; chemical reactions, stoichiometry and calculations based on stoichiometry. |
| **Unit 12 Organic Chemistry (Term 1)**  General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyperconjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions; electrophiles and nucleophiles, types of organic reactions. |
| **Unit 2 Structure of Atom (Term 2)**  Discovery of electron, proton and neutron; atomic number, isotopes and isobars. Thompson’s model and its limitations, Rutherford’s model and its limitations, Bohr’s model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie’s relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals – Aufbau principle, Pauli exclusion principle and Hund’s rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals. |
| **Unit 3 Classification of Elements and Periodicity in Properties ( Term 2)**  Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements –atomic radii, ionic radii, inert gas radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence. Nomenclature of elements with atomic number greater than 100. |
| **Unit 5 States of Matter :Gases and Liquids ( Term 2)**  Three states of matter, intermolecular interactions, types of bonding, melting and boiling points. role of gas laws in elucidating the concept of the molecule, Boyle’s law, Charle’s law, Gay Lussac’s law, Avogadro’s law, ideal behaviour, empirical derivation of gas equation, Avogadro number, ideal gas equation. Kinetic energy and molecular speeds (elementary idea), deviation from ideal behaviour, liquefaction of gases, critical temperature. Liquid State – Vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations). |
| **Unit 6 Thermodynamics (Term 2)**  Concepts of system, types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics – internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess’s law of constant heat summation, enthalpy of : bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Introduction of entropy as a state function, Second law of thermodynamics, Gibbs energy change for spontaneous and non-spontaneous process, criteria for equilibrium. Third law of thermodynamics –Brief introduction |
| **Unit 4 Chemical Bonding and Molecular Structure ( Term 3)**  Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only). Hydrogen bond. |
| **Unit 13 Hydrocarbons (Term 3)**  Classification of Hydrocarbons. Aliphatic Hydrocarbons: Alkanes – Nomenclature, isomerism, conformations (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes – Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation; chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov’s addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes – Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of – hydrogen, halogens, hydrogen halides and water.  Aromatic hydrocarbons – Introduction, IUPAC nomenclature; Benzene: resonance, aromaticity; chemical properties: mechanism of electrophilic substitution – nitration sulphonation, halogenation, Friedel Craft’s alkylation and acylation; directive influence of functional group in monosubstituted benzene; carcinogenicity and toxicity. |
| **Unit 7 Equilibrium (Term 3)**  Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier’s principle; ionic equilibrium – ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of polybasic acids, acid strength concept of pH. |
| **Unit 7 Equilibrium Contd. (Term 4)**  Hydrolysis of salts (elementary idea), buffer solutions, Henderson equation, solubility product, common ion effect (with illustrative examples). |
| **Unit 8 Redox Reactions (Term 4)**  Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions in terms of loss and gain of electrons and changes in oxidation numbers , applications of redox reactions |
| **Unit 9 Hydrogen (Term 4)**  Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen; hydrides – ionic, covalent and interstitial; physical and chemical properties of water, heavy water; hydrogen peroxide-preparation, reactions, use and structure; hydrogen as a fuel. |
| **Unit 10 s-Block Elements (Term 4)**  (Alkali and Alkaline earth metals) Group 1 and Group 2 elements: General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens; uses.  Preparation and Properties of Some Important Compounds: Sodium carbonate, sodium chloride, sodium hydroxide and sodium hydrogen carbonate, biological importance of sodium and potassium. CaO, CaCO3, and industrial use of lime and limestone, biological importance of Mg and Ca. |
| **Unit 11 Some p-Block Elements (Term 4)**  General Introduction to p-Block Elements Group 13 elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of the first element of the group; Boron: physical and chemical properties, some important compounds: borax, boric acids, boron hydrides. Aluminum’s uses, reactions with acids and alkalis. Group 14 elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first element. Carbon – catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides. Important compounds of silicon and a few uses: silicon tetrachloride, silicones, silicates and zeolites, their uses. |
| **Unit 14 Environmental Chemistry (Term 4)**  Environmental pollution – Air, water and soil pollution, chemical reactions in the atmosphere, smog, major atmospheric pollutants; acid rain, ozone and its reactions, effects of depletion of ozone layer, Greenhouse effect and global warming – pollution due to industrial wastes; green chemistry as an alternative tool for reducing pollution, strategy for control of environmental pollution. |

## **Biology Syllabus**

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| **UNIT I DIVERSITY IN THE LIVING WORLD**  1 : The Living World  2 : Biological Classification  3 : Plant Kingdom  4 : Animal Kingdom |
| **UNIT II STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS**  5 : Morphology of Flowering Plants  6: Anatomy of Flowering Plants  7: Structural Organisation in Animals |
| **UNIT III CELL : STRUCTURE AND FUNCTIONS**  8 : Cell : The Unit of Life  9 : Biomolecules  10 : Cell Cycle and Cell Division |
| **UNIT IV PLANT PHYSIOLOGY**  11: Transport in Plants  12: Mineral Nutrition  13 : Photosynthesis in Higher Plants  14 : Respiration in Plants  15: Plant Growth and Development |
| **UNIT V HUMAN PHYSIOLOGY**  16: Digestion and Absorption  17 : Breathing and Exchange of Gases  18 : Body Fluids and Circulation  19 : Excretory Products and their Elimination  20 : Locomotion and Movement  21 : Neural Control and Coordination  22 : Chemical Coordination and Integration |

**Karnataka Board Business**

Chapter 1: Business, Trade and Commerce

Chapter 2: Forms of Business Organisation

Chapter 3: Private, Public and Global Enterprises 5

Chapter 4: Business Services

Chapter 5: Emerging Modes of Business

Chapter 6: Social Responsibilities of Business and Business Ethics

Chapter 7: Formation of a Company

Chapter 8: Sources of Business Finance

Chapter 9: Small Business and Entrepreneurship

Chapter 10: Internal Trade

Chapter 11: International Business

**Karnataka Board Economics**

Chapter 1: Indian Economy on the Eve of Independence

Chapter 2: Indian Economy (1950 – 1990)

Chapter 3: Liberalisation, Privatisation and Globalisation: An Appraisal

Chapter 4: Poverty

Chapter 5: Human Capital Formation In India

Chapter 6: Rural Development

Chapter 7: Employment Growth, Informalisation and Other Issues

Chapter 8: Infrastructure

Chapter 9: Environment And Sustainable Development

Chapter 10: Comparative development Experiences Of India and Its Neighbors