

B.El.Ed. (YEAR - 2) Semester III

Paper 7: Development and Understanding of the Learner

Objectives: -

The Pupil teacher will be able to:

1. Know concept of Educational Psychology, Scope.
2. Understand the concept of Growth & Development.
3. Understand the Learning, Theories & Importance.
4. Know the Concept & Meaning of Intelligence.
5. Know the Personality, Concept & Theories.
6. Understand the Creativity & Exception of Children.

UNIT - I

- Relationship between Psychology and Education, Educational Psychology – Meaning, Concept and Scope.
- Methods of Educational Psychology and its Classroom implications.
- Growth and Development – Concept, Factors Influencing Development.
- Type of Development.

UNIT - II

- Learning – Meaning, Nature and Concept Factors affecting Learning.
- Theories of Learning – Behavioral approach to learning. Thorndike's Trial and Error Theory, Skinner's operant conditioning and its educational implication.
- Cognitive approach to learning – Insight theory of Learning and its Educational Implications.
- Transfer of Learning / Training – Nature, Concept and Theories.

UNIT - III

- Personality – Meaning, Nature and determinants of personality.
- Approaches to Personality – Trait and, type approach.
- Assessment of Personality

UNIT - IV

- Intelligence – Meaning, Concept and Theories.
- Concept of mental age and intelligence quotient, Measurement of Intelligence.
- Creativity – Meaning, Concept, difference between intelligence and creativity.
- Methods and Techniques of fostering creativity: brain storming, problem solving, group discussion, play way, quiz.

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Suggested Readings:

- Anderson, R. C. & Faust. G. (1973) Educational Psychology, New York: Harper & Row
- Bhatia. H. R. (1977) Text Book of Educational Psychology Delhi: Mc Milan
- Skinner. C. E. (1964) Educational Psychology, New Delhi Prentice Hall of India.
- Bigic, M. L. & Hunt, M. P. (1962) Psychological Foundation of Education, Newyork, Harper & Row.
- Pandey, Ram Shakal (2007) Educational Psychological Surya Publication, Meerut.
- Kuppuswamy, B: Advanced Educational Psychology, New Delhi University Published.
- Pillai, N. P. Pillai, K. S. Nair K. S. – Psychological Foundation of Education.

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B.El.Ed.(Year.2) Semester.III

Hindi-I

उद्देश्य

- शुद्ध हिन्दी का ज्ञान कराना।
- शुद्ध एवं उत्कृष्ट हिन्दी लिखने के लिए प्रेरित करना।
- अशुद्ध व त्रुटिपूर्ण हिन्दी को पहचान कर उसको शुद्ध करने का कौशल विकसित करना।
- हिन्दी भाषा व्याकरण व संरचना के माध्यम से अपने भावों को अभिव्यक्त करने के योग्य बनाना।

इकाई-एक

- हिन्दी वर्णमाला, वर्तनी, वाक्य एवं शुद्धि।
- संज्ञा, सर्वनाम, विशेषण, क्रिया तथा इनके प्रकार।

इकाई-दो

- सन्धि : परिभाषा एवं प्रकार
- समास : परिभाषा एवं प्रकार
- अलंकार : परिभाषा एवं प्रकार
- विपरीतार्थक शब्द, पर्यायवाची शब्द, वाक्यांश के लिए एक शब्द

इकाई-तीन

- वचन : भेद (एकवचन, बहुवचन)
- कारक : भेद चिन्हों सहित
- काल : भेद (भूतकाल, वर्तमानकाल, भविष्य काल)
- मुहावरे व लोकोक्तियाँ

इकाई-चार

- वाक्य विचार - (क) संरचना के आधार पर
(ख) अर्थ के आधार पर
- शब्द रचना - उपसर्ग, प्रत्यय
- अपठित गद्यांश
- निबन्ध लेखन

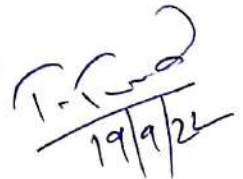
सन्दर्भ ग्रन्थ सूची :

1. रामचन्द्र शुक्ल- हिन्दी साहित्य का इतिहास
2. पी. एन. पाण्डेय- हिन्दी साहित्य का इतिहास
3. हरदेव वाहरी- हिन्दी व्याकरण
4. लूसेन्ट- हिन्दी व्याकरण
5. कक्षा 6 से लेकर 10 तक की हिन्दी पुस्तकें




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B.El.Ed. Semester III

English -I

Course Objectives:

- To develop an understanding of the various aspects of communicative English
- To Understand functional English and its application in practical life
- To express ideas in grammatically correct English.
- To enable students to express creatively and imaginatively in English
- To develop basic understanding of Linguistics

Unit-I :

- Articles, Prepositions, Verbs, Adverbs, Tenses,
- Idioms and phrases, Common errors, Vocabulary,
- Parts of speech ,Vocabulary building, Use of a dictionary.

Unit 2-

- Essay, Letter, Application, Reports, Email, Precis Writing, Bio- data/Curriculum Vitae(CV)and Résumé Writing, Email and email étiquettes
- Professional and General communication, group discussions, delivering speeches, note taking, stress and rhythm, verbal and non verbal communication

Unit 3

- Origin and Development of Human Language
- Characteristics of Human Language
- Linguistics as a Science

Unit-4

- Syntax Types of Clauses and Sentences The Simple Sentence Structure of the Noun Phrase and Verb Phrase
- Phonetics and Phonology The Speech Mechanism Phonemes and Allophones
- Intonation in speech

References:

1. Singh, R.P.(2004).Functional Skills in Language and Literature. OUP. India.
2. Padhya, S.Sudhir. (2017).English Grammar and Writing Skills. Notion Press. Sen.
3. Leena.(2007). Communication Skills.PHI Learning Pvt.Ltd.
4. M. H., Leech, G.N., & Leech, P.G. N.(1981).Style in Fiction: A Linguistic Introduction to English Fictional Prose. Longman.
5. Simpson, P.(1997). Language Through Literature: An Introduction. Routledge.
6. <https://www.englishgrammar.org/>
7. <https://www.grammarly.com/blog/how-to-improve-writing-skills/>
8. <https://drexel.edu/goodwin/professional-studies-blog/overview/2018/July/Five-types-of-communication/>
9. <http://orelt.col.org/module/5-language-through-literature>

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B.El.Ed.(Year.2) Semester.III

Sanskrit-I

उद्देश्य

- संस्कृत भाषा के विभिन्न आयामों से परिचित कराना।
- वर्ण, शब्द रूप व धातु रूप के विभिन्न प्रकारों से परिचित कराना
- संधि व समास के प्रकारों से अवगत कराना व उनमें अंतर करना सीखाना।
- व्याकरण सम्मत भाषा का उपयोग करने की योग्यता को विकसित करना।

इकाई-एक

- संस्कृत साहित्य का परिचय।
- संस्कृत भाषा का महत्त्व व योगदान।
- गद्य, पद्य कथा व उपन्यास का सामान्य परिचय।
- शब्द शक्ति-अभिधा, लक्षणा, व्यंजना

इकाई-दो

- वर्ण विचार -माहेश्वरी सूत्र, स्वर, व्यंजन, अनुस्वार,
- शब्द स्वरूप - परिचय अकारांत आकारांत (पुल्लिंग) इकरांत (स्त्रीलिंग)
- धातुरूप परिचय - लट, लोट, लंड, विधिलिङ् लङ्, लकार

इकाई-तीन

- संधि - स्वर- दीर्घ गुण, अयादि वृद्धि
- व्यंजन - श्चुत्व, ष्टुत्व, जश्त्व
- विसर्ग - उत्त्व, सत्व, रूत्व

इकाई-चार

समास - अव्ययी भाव, तत्पुरुष, द्विगु, द्वन्द्व, बहुव्रीहि,

प्रत्यय - कृत व तद्धित्व

सन्दर्भ ग्रन्थ :-

1. सिद्धान्त कौमुदी -
2. संस्कृत व्याकरण - श्री निवास शास्त्री, साहित्य भण्डार मेरठ
3. संस्कृत साहित्य का इतिहास - गुप्ता पुष्पा, इस्टर्न बुक दिल्ली
4. संस्कृत साहित्य का इतिहास - बलदेव उपाध्याय शारदा मंदिर वाराणसी
5. भाषा विज्ञान एवं भाषा शास्त्र - डॉ० कपिलदेव शास्त्री

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B.E.Ed SEMESTER III
PAPER- MATHEMATICS-I

OBJECTIVES: Pupil Teachers will be able to:

- Understand the concept of elementary algebra
- Study the concept and determinants of matrices
- Acquaint the students with the various types of vectors and its application to geometry
- Introduce the students with the fundamental principal, concepts in the areas of integral calculus.

UNIT-I

- Algebraic Expression
- Linear equation in one and two variables and its application
- Exponents and Powers, Factorization
- Complex Numbers
- De-Moivre's theorem and its Applications

UNIT-II

- Differentiation, integration by substitution and by parts
- Integration of rational, irrational and trigonometric functions
- Definite integral and their properties
- Definite integral as limit of sum
- Fundamental theorem of integral calculus

UNIT-III

- Definitions and concept of matrices
- Special types of matrices
- Determinant of square matrices
- Properties of determinants
- Adjoint and Inverse of square matrix




UNIT-IV






- Vectors, Scalar and products of vectors
- Application of vectors to geometry gradient
- Straight line in two dimensions
- Standard equation of Conics section (Circle, Parabola, Ellipse and Hyperbola)
- Elementary Properties of conic section

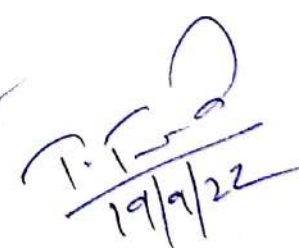
Suggested Readings

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1. Bloom, B.S. and et.al Handbook on Formative and Summative Evaluation.
2. NCERT, New Delhi : A text book of Content-cum-Methodology of Teaching Mathematics.
3. NCERT.A Text Book of content-cum-methodology of Teaching Mathematics, New Delhi:NCERT.
4. Ballabh, Ram. A Textbook of Coordinate Geometry, Prakashan Kendra: Delhi, 13th Edition.
5. Narayan, Shanti, Differential Calculus, S. Chand and Co: New Delhi, 13th Edition.
6. Narayan, Shanti Analysis Solid Geometry, S. Chand and Co: New Delhi, 15th Edition.
7. Singal, M.K. and Asha Rani Singal, Topics in Analysis I, R Chand & Co: New Delhi, 2000, 6th Edition.
8. Singal, M.K. and Asha Rani Singal, Algebra, R. Chand and Co: New Delhi, 22nd Edition.
9. Arora, S.C. and Ramesh Kumar. A Text book of Calculus, Pitamber Publishing Co: Delhi, 1993.
10. Bartle, R.G. and D.R. Sherbert, Introduction to Real Analysis, John Wiley & Sons: New York, 1982.
11. Fraleigh, John, B. Calculus with Analysis Geometry, Addison- Wesley : Guion Road, Indianapolis, 1990.
12. Khurana, K. and S.B. Malik, Elementary Topics in Algebra, Vikas Publishing House: Delhi, 1994.
13. Spiegel, M.R. Vector Analysis, McCraw Hill Book Co: New York, 1997.



B.El.Ed. Year 2, Semester III

Botany-I

General Objectives: -

1. Students will be able to understand the structure and function of organelles in a cell.
2. Students will be able to Understand general structure of nucleus and chromatin structure.
3. Students will be able to understand the classification of Stem, Root and Leaves.
4. Students will be able to develop an understanding about plant ecology.

Unit I

Cell Biology- Prokaryotic and Eukaryotic cell, basic structure and ultrastructure detail, Function of Nucleus, cell wall, chloroplast, mitochondria, endo-membrane system, lysosomes, peroxisomes.

Unit II

General structure of stem, root and leaves.
Modification of stem root and leaves.

Unit III

Plant taxonomy-classification- thallophyta, bryophyta, pteridophyte, gymnosperms, angiosperm.
Scientific name Vs vernacular names, Plant phyla, Plant families, genus and species.

Unit IV

Genetics- Basic principles of heredity, Mendel's Laws of Dominance, sex determination. sex linked inheritance and dosage compensation.

Suggested Readings:

1. Alexopoulos, C.J. and Mimes C.W., Introductory Mycology. Wiley Eastern Ltd.: New Delhi 1979.
2. Pandey, S.N. and Trivedi, P.S. A text book of botany, Vol. I & II, Vikas Publishing House, New Delhi, 1995.
3. Pelezar, J.R. Microbiology, McGraw Hill: New York, 1988.
4. Vashishta, B.R. Fungi, S. Chand & Company: New Delhi, 1995.
5. Vashishta, B.R. Algae, S. Chand & Company: New Delhi, 1990.
6. Vashishta, P.C. Gymnosperms, S. Chand & Company: New Delhi, 1983.
7. Devlin, R.M. and Witharn, F.H. Plant Physiology, CBS Publisher and Distributors: Shahadara.
8. Noggle, G.R. and G.J. Fritzt. Introductory Plant Physiology, Prentice Hall: New Delhi, 1976.

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B.El.Ed.-YEAR 2 SEMESTER III

Zoology-I

Objectives-

1. Students will be able to explain general fundamental concept of cordata and non cordata
2. Students will be able to understand concept and structure of cell and its organelles
3. Students will be able to understand the genetics and its laws.
4. Students will be able to explain concept and role of chromosome in heredity.

Unit I

Diversity of Life-Structure and reproduction of monera, protista, fungi, viruses and animalae.

Animalae- general characteristics of Non chordata, and chordata

The habit, morphology, physiology, reproduction, brief development of non chordata and chordata animals with reference to.

Unit II

Origin of life-brief history, chemical evolution of cell, and auto trophs, advent of oxygen

Structure and function of animals, hormonal regulation, circulation and excretion

Unit III

Cell biology-structure and function of cell, ultra structure and function of cell membrane, golgi bodies, ribosome, nucleus and endoplasmic reticulum

Unit IV

Structure of chromosome, Watson and crick model of DNA, difference between DNA and RNA, MENDEL'S principles of heredity on chromosomal basis, dominance, multiple alleles, linkage and crossing over, interaction of gene

Suggested Readings

1. Adhikari, S. and Sinha, A.K. Fundamentals of Biology of Animals, Vol-3, New Central Book Agency: Calcutta.
2. Alexander, R. McNeill. Animals, Cambridge University Press: Cambridge 1990
3. Ayyer, Ekambaranatha, M.A. Manual of Zoology Part I and II, S. Viswandathan: II McNichols Road, Chetput, Madras, 1966.
4. Cleveland, P. Hickman, Integrated Principles of Zoology, The C.V. Mosby Co: London 1970.
5. Robinson, M.A. and Wiggins, J.F. Animal Types (Invertebrates), Hutchinson Educational: London, 1970.
6. Beri, A.K. Textbook of Animal Physical. EMK Pub.: North Suite, 313 Pnate, 1981.
7. De Robertis, EDP and EMF De Robertis. Cell and Molecular Biology, Saunders and Co: USA.
8. Nielson, Schmidt. Principles for Animal Physiology, Prentice Hall: New Delhi, 1973.

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B.El.Ed.Semester-III

History-1

Objectives:

Students will be able to

- Understand the major milestones of civilization
- Comprehend the socio economic structure during Ancient India
- Understand the socio- religious reform movements
- Understand the Ancient Indian Education System
- Understand the Socio economic contribution of Sultanate, Mughal and Maratha period in India

Unit-I

- Historiography, Historical sources, Nature and characteristic of History
- Salient features of Paleolithic, Mesolithic and Neolithic period
- Salient features of Harappan Civilization

Unit-II

- Vedic Culture : Early Vedic Period. Society and Economy during Later Vedic Period
- Socio-Religious Reforms Movements : Jainism and Buddhism
- Ancient Indian Education System

Unit-III

- Cultural and Economic History of Mauryan Age,
- Ashoka and its Dhamma
- Cultural and Economic History of Gupta Period

Unit-IV

- Sultanate Dynasty-Social, Cultural and Economic contributions
- Soofi and Bhakti movement
- Mughal Dynasty-Social , cultural and economic contributions
- Maratha: An Introduction

Books Recommended

1. दिल्ली सल्तनत-ए०एल० श्रीवास्तव, L.P. शर्मा.
2. Mughal India S.R.Sharma (Hindi & English).
3. Medieval Indian History-Jshwari Prasad
4. Mendis, G.C. The Early History of Ceylon.
5. Carr, E.H. What is History? Macmillan: London 1962.
6. Clarke, Graham. World Pre-History, Oxford University Press: London 1977.
7. Clarke and Piggett. Pre-Historic Societies, Penguin: London, 1965.
8. Thapar, Romila. History of India. Penguin: England, 1966.
9. Habib, Iftan. Agrarian System of Mughal india, Asia Publishing House: Bombay, 1963, Chapter 5.

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B.El.Ed. Semester III

Geography -I

Objectives: Students will be able –

- To understand the basics of Geography as an discipline
- To understand our solar system
- To learn the physical and human geography
- To understand the location ,area ,space and environment

UNIT-1

- Meaning , Definition, Nature, Scope, Basic Concept and Approaches of Geography
- Objectives , Relevance and Branches of Geography,
- Relationship with other social sciences

UNIT-2

- Physical Dimension in Geography; The Universe, Solar System, Earth Movement, Latitude and Longitude
- Human Dimension in Geography: Society, Culture and Civilization

UNIT-3

- India: Size, Location, Physical features and Characteristics of Indian Climate and Its Effect.
- Climate: Factors influencing climate, Rain falls and temperature distribution, Water Conservation and Management.

UNIT-4

- Land Resources: Soil and Minerals-Types, Uses and Distribution; Forest and Wild Life Resources-Types, Uses and Distribution
- Agriculture: Types of Farming, Contribution of Agriculture in National Economy, Study of Major Crops of Indian Wheat, Rice, Cotton, Sugarcane etc.

Suggested Reading:

- A text book of geography, class VI to VII , ICSE , New Delhi.
- David Harvey (1972), Explanation in geography Edward-Amold, London
- Dohrs. F.E. and Sommers , L. W. (1958), introduction to geography , Thomas Y. Crowell co. Chicago
- Fundamental of physical geography , class XI, N.C.E.R.T. , New Delhi
- Jones, P.A. (1968): field work In geography, longmans
- HoltJensen (1980), A geography :Its history and concept, Longmans
- Minshull, R (1970), The changing Nature of Geography, Hultchinson University Library, London.

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B.El.Ed.(Year.2) Semester. III

Political Science-I

Objectives:

- Understand the scope of Political Science.
- Understand the Historical and Philosophical Approach.
- Understand the Nature and Ends.
- Understand the Law and Justice.

UNIT-I

- Definition, Nature, scope and Significance of Political Science.
- Relation with other social Sciences.

UNIT-II

- Approaches to the study of Political Science Traditional Approach- and Philosophical, Historical, legal and Institutional
- Modern Approaches: Behavioral, Post Behavioral. And Neo-Institutional approach

• UNIT-III

- State; origin, Nature, ends and Theories of State Action
- Liberalism, Marxism, Evolutionary Socialism, Welfare state

UNIT-IV

- Concepts of Sovereignty, Law, Justice, Liberty, Equality and Right
- Citizenship and Its Theories

Suggested Readings:

1. Gamble, A. An Introduction to Modern Social and Political Thought, MacMillan: London, 1981.
2. Leftwich, A. (ed.) What is Politics, Blackwell Pub: Cambridge, 1984.
3. Arblaster, A. Democracy, Open University Press: Milton Keynes, 1988.
4. Held, D. Models of Democracy, Stanford University Press: Stanford, 1987.
5. Keane, J. Democracy and Civil Society, Routledge: New York, 1988.
6. Birch, Anthony H. The Concepts and Theories of Modern Democracy. Routledge and Kegan Paul: London, 1993. Chapter 2.
7. Kedourie, E. (ed.) Nationalism in Asia and Africa, Weidenfield and Nicholson: London, 1970
8. Aggarwal, N. N., et. al. (1978), *Principles of Political Science*, 6th Edition. New Delhi: Ram Chand & Co.
9. Ambrose, A. and Mial, A. (1968), *Children's Social Learning*, New York: Association for supervision and Curriculum Development.
10. Apter, David, E. (1978), *Introduction to Political Analysis*, New Delhi: Prentice Hall of India.

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11. Buch, M. B. (1969), *Improving Instruction in Civics*, New Delhi: NCERT.
12. Fenton, Edwin (1967), *The New Social Studies*, New York: Holt Rinehart & Winston, Inc.
13. Nicholson & Write, *Social Studies for Future Citizen*, George Harrap.
14. Verma, S. P. (1975), *Modern Political Theory*, New Delhi: Vikas Publishing House.

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B. El. Ed. – Semester - III

Economics -1

Objectives-

On completion of this course, students will be able to

1. Understand the significance of economies.
2. Know about Demand and Supply
3. Understand the basic concepts of production.
4. Understand about different types of economy.
5. Understand about the Micro Economics
6. Understand about the basic concepts of National Income.
7. Know the importance of international trade.

UNIT – I

- Economics : Meaning and definition
- Economics : Importance, Scope and Limitations
- Definition: Wealth, Welfare, Scarcity and Growth
- Micro and Macro Economics

UNIT – II

- Demand - Meaning, types, slope, assumptions, and law of demand.
- Supply – Meaning, types, slope, assumptions and law of supply.
- Law of demand and supply and its equilibrium.
- Inferior Goods and Griffin Goods.

UNIT – III

- Production – Concept and Factors
- Production possibility curve, production function,
- Short run theory of production,
- Law of Variable proportions; Long run theory of production, Laws of Returns to scale, concept of Isocost line

UNIT –IV

- Micro Economics : Definition, Nature, Scope and Methods of Economics.
- Equilibrium : Partial and General, Static and Dynamic.
- Cost curve – Total Cost (TC), Marginal Cost (MC) and Average cost (AC), Total Fixed cost (TFC) Total variable cost (TVC), Average fixed cost (AFC) and Average Variable cost (AVC).
- Revenue curve – Total Revenue (TR), Marginal Revenue (MR) and Average Revenue (AR).

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Suggested Readings

- 1) Becherman, W. An Introduction to National Income Analysis, University Book Store: Seattle, 1984.
- 2) Lipsey, R.G. An Introduction to Positive Economics, English Language Book Society: London, 1995.
- 3) Ray, N.C. An Introduction to Micro Economics, Macmillan: Delhi, 1975.
- 4) Samuelson, Paul A. and William D. Nordhaus. Economics, McGraw Hill : New York, 1989.
- 5) Jalan, Bimal.(edu) The Indian Economy: Problems and Prospects, Penguin Books: New Delhi, 1992.
- 6) Kapila, Uma. Indian Economy: Issues in Development Planning and Sectorial Aspects, Academic Foundations: New Delhi, 200c.
- 7) Kapila, Uma:(ed) Indian Economy since Independence, Academic Foundation: New Delhi, annual updated edition.
- 8) Mishra, S.K. and Puri, V.K. Indian Economy, Himalaya Publishing House: Bombay, annual edition.
- 9) Patel, I.G. 'Strategy of Indian Planning', in P. Chaudhary, (ed.) Aspects of Indian Economic Development : A Book of Readings. Allen and Unwin : London, 1971.
- 10) Todaro, M.P: Economic Development in the Third World, Longman : New York, 1989, Chapter 1&2.

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B.El.Ed. Semester-III

Physics-I

Objectives: The students will be able to understand the concept of-

- Units and Measurement.
- Motion of bodies and its role in daily life.
- Rotational motions and motion under gravity.
- Sounds and its propagation in media.

UNIT-1

Unit and measurement: Fundamental quantity and its unity, derived physical and quantity and its units, Unit System (M.K.S., C.G.S., F.P.S., and S.I.) Conversion of units, Standard prefixes, non-SI units, Uncertainty in Measurement, The Algebra of units.

UNIT-2

Mechanism: Scalars and Vectors, addition of Vectors, rest and motion, distance and displacements, equation of motion, distance-time graph, velocity-time graph, acceleration-time graph, Circular motion, Newton's Law of motion, Force, Pseudo force, pressure, work energy theorem, conservative forces, Conservation of energy, power conservation of linear momentum, centre of mass, particle collision in 2D.

UNIT-3

Rotational Motion: Rotational Motion, torque, angular displacement, angular momentum, conservation of angular momentum, moment of inertia. Law of moment of inertia.

UNIT-4

Gravitation: The universal law of gravitation, inertial and gravitational masses, centre of gravity, motion of planets and satellites, Kepler's law, gravitation constant, Acceleration due to gravity, gravitational potential energy, mass and weight.

Sound: Nature of sound, wave motion and sound, wavelength, frequency, wave speed, speed and sound, pitch, loudness, range of hearing, reflection of sound, echo, ultrasound, human ear.

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B.El.Ed. (YEAR - 2) Semester III

Chemistry 1

Course objectives:-

1. Identify the concepts of chemistry that are alternatively conceptualized by teacher & students in general.
2. Analyse the concept of chemistry with respect to its branches, process skills knowledge.
3. To understand the concepts of inorganic, organic & physical chemistry.
4. To differentiate various concepts of chemistry and integrate it with its fields.

UNIT - I

- Atomic Structure; Quantum Mechanics based structure of atom, shapes of S;P and d Orbit.
- Multi Electron System: - Principles & its limitations, energy level diagrams.
- Periodic Table: - Modern Periodic Table, Periodicity Properties of Elements.

UNIT -II

- Chemical Bonds & Molecules: - Shapes of simple molecules, types of bonding, resources & hybridization.
- Elementary Idea of Bronsted - lowry & Lewis concept, comparative study of Shero, S, P. Block, related effects, brief knowledge of transitional metals.
- Electronic Configuration of Elements

UNIT - III

- Melting & Boiling points, crystallization, sublimation, distillation, chromatography (paper thin layer); tetrahedral concepts: catenation, hybridization, sp , sp^2 , sp^3 , Nomenclature.
- Types of Bonds: inductive, electrometric & mesomeric effects, Aromatic character (Rules) & Hydrocarbons.
- Isomerism (structural & geometrical), stereoisomerism functional group, cap polymers (synthetic & natural)

UNIT IV

- Soaps & Detergents, insecticides & pesticides.
- difference between gases and liquids, chemical kinetics & chemical equilibrium & its laws of factors in fluency equilibrium state. Photo chemistry, Ionic equilibrium conductors.
- Chemicals in medicines,

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2. James E, Huhey, et.al. Inorganic Chemistry, Harper Collins: London, 1993.
3. Mohan, Bruce H. Inorganic Chemistry, Narosa Publishing: New Delhi, 1990.
4. Bahl, R.S. and Arun Bahl. Advanced Organic Chemistry, S. Chand and Co: New Delhi, 1990.

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6. Sykes, Peter. A Guide Book to Mechanism in Organic Chemistry, Orient Longman: Bombay, 1971.
7. Donald, H. Andrews. Introductory Physical Chemistry, McGraw Hill : New York, 1970.
8. Rastogi, R.P. and Misra R.R. An Introduction to Chemical Thermo dynamics, Vikas Publishing House, New Delhi, 1995.
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