

Annexure – XVIII

(Enclosure to Notification No. 1479/SS/T9/KGBV/URS/2022, Dt:16.06.2023 of DSE & EO-SPD, TSS, Hyd.)

Syllabus of Written Test for Recruitment of CRTs in KGBVs

CRT – Physical Science

Part I - General Studies

1. Current Affairs - Regional, National & International.
2. Indian Constitution; Indian Political System: Governance and Public Policy.
3. Social Exclusion; Rights issues such as Gender, Caste, Tribe, Disability etc., and inclusive policies.
4. Society Culture, Civilization Heritage. Arts and Literature of India and Telangana
5. General Science; India's Achievements in Science and Technology
6. Environmental Issues; Disaster Management- Prevention and Mitigation Strategies and Sustainable Development.
7. Economic and Social Development of India and Telangana.
8. Socio-economic, Political and Cultural History of Telangana with special emphasis on Telangana Statehood Movement and formation of Telangana state.

Part II – Basic Proficiency in English

1. School Level English Grammar:
Articles; Tenses; Noun & Pronouns; Adjectives; Adverbs; Verbs; Modals; Subject-verb Agreement; Non-finites; Reported Speech; Degrees of Comparison; Active and Passive Voice; Prepositions; Conjunctions; Conditionals.
2. Vocabulary:
Synonyms and Antonyms; Phrasal Verbs; Related Pair of Words; Idioms and Phrases; Proverbs.
3. Words and Sentences:
Use of Words; Choosing appropriate words and words often confused; Sentence Arrangement, Completion, Fillers and Improvement; Transformation of Sentences; Comprehension; Punctuation; Spelling Test; Spotting of Errors.

Part III - Perspectives in Education

1. **History of Education:** Pre-Vedic and Post-Vedic period, Medieval period Recommendations of various Committees during British period with special reference to Woods Despatch (1854), Hunter Commission (1882), Hartog Committee (1929), Sargent Committee (1944), Recommendations of various Committees in the post independent period with special reference to Mudaliar Commission (1952-53), Kothari Commission (1964-66), Ishwarbhai Patel Committee (1977), National Policy on Education, 1968, National Policy on Education, 1986, Programme of Action, 1992 and National Educational Policy, 2020.

Aims, Objectives, Functions, Unipolar, Bipolar and Tripolar Processes of Education, Types of Education - Formal, Informal and Non-formal Education, their significance and interrelations, Philosophical, Sociological and Psychological Perspectives of Education.

2. **Teacher Education:** Concept, Teacher Preparation, NCFTE-2009, Pre-service and In service Teacher Education Programs, Teacher Motivation, Continuous Professional Development.

Teacher Empowerment: Meaning, Interventions for Empowerment, Professional Code of Conduct for Teachers, Role of Teacher Organisations in Professional Development of Teachers, National and State Level Institutions for Teacher Education.

3. **Educational Concerns in Contemporary India:**

Environmental Education: Meaning, Scope of Environmental Education, Concept of Sustainable Development, Role of Teacher, School and NGOs in Development and Protection of Environment; **Democracy and Education:** Equality, Equity, Equality of Educational Opportunities, Role of Education in promoting Democracy; **Economics of Education:** Meaning and Scope, Education as Human Capital, Education and Human Resource Development; **Population Education:** Significance of Population Education. Population situation, Approaches to Population Education and Themes of Population Education, Family Life Education, Sustainable development, Adolescence Education, Health Education, Gender Equality, Equity and Empowerment of Women, the Role of School and Teacher, Urbanization and Migration, Life Skills; **Inclusive Education:** Concept, Prevalence, Areas of Disabilities, Disadvantaged Groups, Gender etc., Myths & Facts, Importance of Early Identification and Assessment, Planning Inclusive

Education, Initiatives in Education, Method & Strategies of Classroom Management, Psycho-Social Management, Creation of Awareness – Students, Parents and Society & Sensitization Strategies, Evaluation, Documentation and Maintenance of Records; **Liberalization, Privatization and Globalization; Value Education; Initiatives in Education:** Sarva Siksha Abhiyan (SSA), National Programme for Education of Girls at Elementary Level (NPEGEL), Mid-day-Meal Programme, Rashtriya Madhyamika Siksha Abhiyan (RMSA), Samagra Shiksha and its interventions, KGBVS and Model Schools etc.

4. Constitutional Provisions relevant to Education: Acts/Rights, Right of Children to Free and Compulsory Education Act, 2009, Right to Information Act 2005, Child Rights, Human Rights, PWD Act, 2016 and other Provisions pertaining to Education.
5. National Curriculum Framework, 2005 and NCFSE, 2023.

Part IV - Content

1. **Measurement:** Measurement of lengths, Units of Measurements, Measurement of thickness of a coin, Measurement of the length of a curved path, Measurement of Area, Measurement of the area of a regular and irregular surface, Measurement of volume, measurement of volume of liquids, Measurement of volume of irregular solids using a measuring cylinder
2. **Natural Resources:**
 - i. **Air and Water:** Composition of air, Hot air and Cool air, Effects of moving air, Cyclone, Measurement of Atmospheric Pressure, Air Pollution, Sources water on earth, Forms of water, evaporation of water, condensation of water, water cycle, Water and its uses, Measurement of the volume of water, Water pollution, Process of waste water treatment, safe drinking water stages, Diseases caused by untreated water, other ways of disposing sewage, Types of drainage systems, Draughts, Floods, Conservation of water.
 - ii. **Weather and Climate:** Measuring components of weather, measurement of temperature of a place, Measurement of rainfall, direction of wind, Humidity, Climate and life style.
 - iii. **Coal and Petroleum:** Sources of materials, Exhaustible and Inexhaustible materials, Coal - formation, Uses of Coal - Coal, coke and Coal tar, Col gas, Petroleum - formation, refining of petroleum, uses of petroleum, use of natural gases, Petrochemical products, conservation of coal and petroleum, Misuse of energy resources and consequences, harmful effects caused during use of fuels.

iv. Combustion, Fuels and flame: Combustible and non-combustible materials, Process of combustion, Ignition temperature, Types of combustion, Fuels, calorific value, Fire control, Flame, structure of flame

3. **Natural Phenomena**

i. **Light:** Sources of light, Shadows, Reflection, Laws of Reflection, Periscope,

Kaleidoscope, Pin hole camera, Reflection of light by plane surfaces- Formation of image by a pinhole camera, Fermat principle, Plane mirror, Reflection of light by plane mirror, Plane of reflection, Formation of an image by plane mirror and its characteristics, uses of plane mirrors, Reflection of light at curved surfaces (Spherical Mirrors), Finding the normal to a curved surface, Pole, Principal axis, Centre and Radius of curvature, Ray diagrams for concave and convex mirrors, Sign convention, Magnification, Characteristics of the images formed by spherical mirrors, Refraction- Refraction of light at plane surfaces- Refractive index, Relative refractive index, Snell's law, Total Internal Reflection, Mirages, Applications of total internal reflection, Refraction through glass slab, lateral shift and vertical shift, Refraction of Light at curved surfaces- Image formation, Types of lenses (converging and diverging) , Focal length, Rules to draw ray diagrams for image formation by lenses, Characteristics of the images formed by lenses, Lens formula, Magnification, Lens maker formula, Human eye, Least distance of distinct vision, Structure of human eye, Vision defects-Myopia, Hypermetropia and Presbyopia, Power of lens, Prism, Refractive index of Prism, Dispersion and Scattering of Light.

ii. **Sound:** Identifying different sounds, Sound is a form of energy, Production of sound, Propagation of sound in different media, Types of waves, Sound waves- Longitudinal, Characteristics of the sound Wave-Loudness, feebleness, Wave length, Amplitude, Time period and frequency, Speed of sound wave, Noise and Music, Musical instruments, Characteristics of a musical Sound-Pitch, Loudness, Quality, Audible range, Sound pollution, Measure to control sound pollution. Reflection of sound, Echo, Reverberation, Uses of multiple reflection of sound, Range of hearing, applications of ultrasound, SONAR.

iii. **Heat:** Sources of Heat, Heat is a form of an Energy, Heat, Temperature and Units, Measurement of Temperature, Fahrenheit and Centigrade scales, Different types of thermometers, Thermal equilibrium, Temperature and kinetic energy, Specific heat, Applications of specific heat capacity, Method and Principles of mixtures, Determination of specific heat of a solid, Evaporation, Condensation, Humidity, Dew and Fog, Boiling, Latent heat of vaporization, Melting, Freezing.

iv. **Some natural phenomena:** Types of charges and their interaction, Presence of charge of a body, transfer of charge, Lightning, Lightning safety, Lightning conductors, Earthquakes, Tsunami, protection against Earthquakes, Earthquakes in Telangana.

v. **Stars and solar system-** Length of a shadow, North-south movement of the

Sun. Sun dial, Moon, Phases of Moon, Solar and Lunar eclipses, Constellations, Pole star, Solar System, The planets, Stars, Meteors, Asteroids and Comets, Artificial Satellites.

4. **Kinematics and Dynamics**

i. Motion- Motion and rest, Types of motions- Translatory motion, Rotatory motion, Oscillatory motion, Distance and Displacement, Scalars and Vectors, Speed, Velocity, Average speed and Average velocity, direction of motion of a body, Uniform motion, Non-uniform motion, Acceleration, Deceleration, Equations of uniform accelerated motion, time-distance graphs, Difference between graph and map, Graphs of objects moving at different uniform speeds, Relation between speed and the slope of a graph, Graphs of stationary objects, Graphs of non-uniform motion, Newton's laws of Motion- First law of motion, Inertia and mass, Second law of motion, Linear momentum, Atwood machine, Third law of motion, Conservation of momentum, Impulse,

ii. Gravitation- Uniform circular motion, Universal law of Gravitation, Freefall, Direction of 'g', Weight, Weight of a free-fall body, Changes during the free-fall of a body, Centre of Gravity, Stability

iii. Work and Energy- Work, Idea of Energy, Energy transfer and work, Understanding the increase and decrease in energy of an object, Kinetic energy, Potential Energy, Observing the energy in-stretched rubber band and in an object at some height, Mechanical energy, Conservation of Energy-Conservation of mechanical energy, Calculation of the total energy of freefall at different heights, Power, Sources of Energy, Fuels, Renewable sources of Energy.

iv. Force: Types of forces- Contact forces and field forces, Net force, Effects of net force acting on a table, Effect of stretched rubber bands on fingers, calculation of net force from free body diagrams, Effect of force on change the state of motion and its direction, Effects of net force on direction of moving object, other effects of force, Pressure,

v. Friction: Types of friction, Factors affecting friction, friction produces heat, Increasing and decreasing of friction, principle of ball bearings, Fluid friction, factors influencing the fluid friction.

vi. Floating bodies- Density and relative density, Relative density of liquids, Lactometer, Upward force in liquids, Pressure of air, Measurement of atmospheric pressure, Buoyancy and measurement of the force of Buoyancy, Archimedes' Principle, Pascal's Law.

vii. Time: Estimating time, Units of time, Time Measuring instruments.

5. **Magnetism:** Story of magnet, Magnets of different shapes, materials attracted by Magnet, Poles of a Bar magnet, Directions of a Bar magnet, Magnetic compass, attraction and repulsion between two magnets, Earth as a Magnet, Magnetic and non-magnetic substances, Making of a magnet and magnetic compass, Magnetic induction.

6. **Electricity** -Electric cell-Dry cell, Bulb, Switch, Torch light, Electric symbols and their uses, Simple electric circuits, Connecting Electric cells and bulbs in Series and Parallel, Heating effect of electric current, Tube lights, Compact Florescent lamps, Miniature circuit breaker(MCB), Electric fuses, Testing conductivity of materials- conductors, insulators, Electric conductivity of liquids, Electric conductivity of electrolyte, Chemical effect of electric current, Electrolytic cell, Electroplating and its uses,

Electric current: Potential difference, Electromotive force(emf), Ohm's law, Electric shock, Factors affecting the resistance of the Material-Temperature, Nature of material, Length of the conductor, cross section area. Electric Circuits-Series and parallel connections of resistors, Kirchhoff's Laws-Junction law and Loop law, Electric power.
7. **Electromagnetism**- Oersted's Experiment, Magnetic field, Lines of magnetic field, Magnetic flux and flux density, Magnetic field due to currents-Magnetic field due to straight wire carrying current, Magnetic field due to circular coil, Magnetic field due to solenoid, Magnetic force on moving charge and current carrying wire- Right hand rule, Electric Motor, Electromagnetic Induction, Faraday's Law, Lenz law, Applications of Faraday's law of electromagnetic induction, Electric Generator, Alternating & Direct Currents.
8. **States of Mater** – Matter around us- Properties of Materials-Transparent, Opaque, translucent, States of matter, Changes in Matter(Physical change and Chemical Change, Slow and fast changes, temporary and permanent changes), Properties of solids, liquids and gases. Compressibility, Diffusion- diffusions in liquids, diffusion of solids in liquids, Diffusion of two gases, Matter- Changing its states.
9. **Atomic Structure and Atoms, molecules:**
 - i. **Atoms, molecules**- Law of conservation of mass, Laws of constant proportions, Dalton's atomic theory, Atoms and molecules, Symbol of elements, Atomicity, Molecules of compounds, Chemical formulae of compounds, Formula unit mass, Mole concept, Molar mass.
 - ii. **Atomic Structure**- Sub atomic particles, Electron, Proton and Neutron, Structure of Atom, Atomic Models – Thomson's model of Atom, Rutherford's alpha particles scattering experiment, Rutherford's model of atom and its limitations, Bohr's model of atom. Distribution of electrons in different Orbits (Shells), Valency, Atomic number, Atomic mass number, Writing symbols of atoms, Isotopes. Applications of Isotopes. Spectrum, Characteristics of electromagnetic wave, Electromagnetic spectrum, Bohr's model of hydrogen atom and its limitations, Bohr-Sommerfield model of atom, Quantum mechanical model of atom, Quantum numbers, Electronic configuration, The Pauli Exclusion principle, Aufbau principle, Hund's Rule.
10. **Classification of Elements-Periodic Table:** Need for the arrangement of elements in an organised manner, Dobereiner's law of Triads, Mendeleeff's Periodic table, The periodic law, Salient features and achievements of the Mendeleeff's periodic table,

Limitations, Modern periodic table, Positions of elements in the Modern periodic table, Groups and Periods. Metals and Non-metals. Periodic properties of elements in the modern periodic table, Properties of elements and their trends in Groups and Periods- Valance, Atomic radius, Ionisation energy, Electron Affinity-Electron gain enthalpy, Electronegativity, Metallic and non-Metallic properties

11. **Materials**

i. Acids, Bases and Salts: Natural indicators, Chemical indicators to test Acids and Bases, Acid rains, Manures, Salts, Chemical properties of Acids and Bases, Reaction of Acids and Bases with Metals, metal hydrogen carbonates and metal oxides, non-metal oxides. Neutralization reaction, General properties of Acids and Bases, Strength of acid or base, Concept of pH, Importance of pH in everyday life, Family of Salts, pH of salts, Chemicals from common salt, Common salt-A raw material for chemicals, Sodium hydroxide from common salt, bleaching powder, Baking soda, washing soda, Removing water of crystallisation, Plaster of Paris.

ii. Natural Fibres, Synthetic Fibres and plastics: Types of fibres, Natural fibres- Cotton, Jute, Silk, Wool, Yarn to fabric, identifying fibres - burning test, Synthetic fibres- Nylon, Rayon, Acrylic, Polyesters, Plastics-Resin identification codes, Plastics, Types of plastics - Thermo plastics, Thermosetting plastics, plastics and environment, Bio degradable and non-biodegradables, 4R principle, recycling code.

iii. Metals and Non-metals: Physical properties of Metals-Appearance, Sonority, Malleability, Ductility, Electric and Thermal conductivity. Chemical properties of metals- Reaction with oxygen, rusting of metals, Reaction with water, Reaction with Acids, Reactivity of metals, Uses of metals and non-metals.

12. **Chemical Bonding and Molecular Structure**

Lewis dot structures, Electronic theory of valence by Lewis and Kossel, Ionic Bond, Formation of Ionic bond, Cation formation, Anion formation, The arrangement of Ions in ionic compounds, Factors affecting the formation of cation and anion, Covalent bond, Formation of O_2 , N_2 , Methane, Ammonia, water molecules, The bond lengths and Bond energies of covalent bonds, Draw backs of electronic theory of valence, Valance shell electron pair repulsion (VSEPR) theory, Valence bond theory, Hybridization.

13. **Chemical Equations and Reactions:** Chemical equations, writing a chemical equation, balancing of chemical equations, making chemical equations more informative, Interpreting a balanced chemical equation, Types of Chemical reactions - Chemical combination, Chemical decomposition, Chemical displacement, Chemical Double decomposition,

14. **Solutions and Separation of Substances**

i. Solutions: Mixtures, Types of mixtures, Solutions, properties of solution, Concentration of solutions, Saturated and unsaturated solutions, Factors affecting the

rate of dissolving. Mass percentage, Volume percentage and Mass by volume percentage. Suspensions and colloidal solutions. Tyndall effect,

ii. Separation: Separating the components of a mixture, Hand picking, Sedimentation and decantation, sieving and filtration, Crystallization, Sublimation, Evaporation, Paper chromatography, Separation of immiscible and miscible liquids, Distillation, fractional distillation, Types of pure substances.

15. **Chemistry of Carbon and its Compounds**

Hybridization, Allotropic forms of Carbon, Versatile nature of Carbon, Hydro carbons, Functional groups in carbon compounds, Isomerism, Homologous series, Nomenclature of organic compounds, Chemical properties of carbon compounds- Combustion, oxidation reactions, addition reactions, substitution reactions, Some important carbon Compounds-Ethanol, Ethanoic acid. Esterification, Soaps- Saponification and Micelles.

16. **Principles of Metallurgy**

Occurrence of the metals in nature, Extraction of the metals from the Ores, Concentration or dressing of the Ore, Extraction of crude metal from the Ore, Reduction of purified Ore to the metal, Purification methods of the crude metal, Corrosion, Prevention of Corrosion, few importance processes used in Metallurgy- Smelting, Roasting, Calcination, Furnace.

Part V- Pedagogy

1. Nature of Physical Sciences

- i. Science as a particular way of looking at nature, a rapidly expanding body of knowledge, an interdisciplinary area of learning, always tentative, an approach to investigation and as a Process of constructing knowledge.
- ii. Scientific Method: Observation, inquiry, hypothesis, experimentation, data collection, generalization.
- iii. How Science Works, how children learn science?

2. Science and Society – Historical Development

- i. Physical science for environment, health, peace, equity (Gender & Science) and Inclusion.
- ii. Need and Significance of History of science in teaching science – Historical development perspective of Science.
- iii. Contributions of Scientists– Isaac Newton, John Dalton, J.C. Bose, Albert Einstein, Niels Bohr, C.V. Raman, Louis Victor de Broglie, Bimla Buti, Venkataraman Ramakrishnan, APJ Abdul Kalam, Marie Curie.

3. Aims of Learning Physical Science

- i. Aims of Learning Science

- ii. Knowledge and Understanding through Science
- iii. Nurturing Process Skills of Science, Curiosity, Creativity and Aesthetic Sense
- iv. Development of Scientific Attitude and Scientific Temper- Respect for evidence, Open-mindedness, Truthfulness in reporting observations, Critical thinking, Logical thinking, Skepticism, Objectivity, Perseverance – Notion of Popular Science – Its importance and involvement of science teacher.
- v. Relating Physical Science Education to Natural and Social Environment, Technology, Society and Environment.
- vi. Imbibing the Values Through Science Teaching – Feynman’s Perspective of Science values
- vii. Development of Problem Solving Skills

4. Learning objectives of physical science

- i. Meaning of Learning Objectives
- ii. Developing Learning Objectives, Features of well-developed learning objectives.
- iii. Bloom’s Taxonomy, Anderson and Krathwohl’s Taxonomy
- iv. Writing Learning Objectives, Remembering, Understanding, Applying, Analysing, Evaluating, Creating
- v. Learning Objectives for Upper Primary, Secondary and Higher Secondary Stages
- vi. Learning Objectives in the Constructivist Perspective
- vii. Academic Standards in Physical Science

5. Pedagogical Shift in Physical Science

- i. Pedagogical Shift:
 - a. Science as Fixed Body of Knowledge to the Process of Constructing
 - b. Knowledge
 - c. Nature of Science
 - d. Learners learning and teacher
 - e. Physical Science curriculum, Diversity in class, Approaches
 - f. Planning Teaching-Learning Experiences
 - g. Assessment
 - h. Inclusion- Information and Communication Technology (ICT)
 - i. Professional development
- ii. Democratising Science Learning: Critical Pedagogy- Critical pedagogy and role of Teachers.
- iii. Content-cum-methodology: Meaning, Concept & Nature
- iv. Steps to Content-cum-methodology
 - v. Steps to Pedagogical Analysis
 - vi. Content and Teaching Skills

6. School Curriculum in Physical Science

- i. History of Development of Curriculum Framework
- ii. Curriculum Framework, Curriculum and Syllabus
- iii. Curriculum Development; From Subject-centred to Behaviourist to Constructivist Approach,
- iv. Recommendations of NCF-2005 and APSCF-2011 on Science Curriculum-National Focus Group position paper on Science and State position paper (2011) on Science
- v. Print Resources- Textbooks, Popular science books, Journals and magazines
- vi. Dale's Cone of Experience- Using the Cone of Experience
- vii. Teacher as Curriculum Developer – Localized curriculum, place for Artisans knowledge systems in curriculum, local Innovators and Innovative Practices of science.

7. Approaches and Strategies for Learning Physical Science

- i. Approaches and Strategies for Learning Physical Science, Difference between approach and strategy.
- ii. Different approaches and strategies of learning
 - a. Scenario from 1950–1980
 - b. Post 1980 Scenario
 - c. Selecting appropriate approach and strategy
- iii. Essential components of all approaches and strategies
- iv. Constructivist Approach – Science teaching strategies – State developed model.
- v. 5E Learning Model
- vi. Collaborative Learning Approach (CLA)
 - a. Steps of collaborative approach
 - b. Ensuring meaningful learning through CLA
 - c. Ways of applying collaborative learning approach
 - d. Limitation of collaborative learning approach
- vii. Problem Solving Approach (PSA)
 - a. Steps in problem solving approach,
 - b. Teacher's role in problem solving approach,
 - c. Problem solving approach: an example
- viii. Concept Mapping- Phases of the concept mapping, Uses of concept maps
- ix. Experiential Learning- Abilities of an experiential learner

8. Learning Resources – Community, ICT and Laboratory

- i. Using Community Resources- Bringing community to the class, Taking class to the community: Field visit
- ii. Pooling of Learning Resources
 - a. Learning Resources from Immediate Environment (Natural pH indicators, Soaps and detergents, Baking soda, Washing soda, Common salt, Fruits, Fibre, Pulleys, Projectiles, Lenses and Mirrors, Inter-conversion of one form of energy to other, Propagation of waves in Solid, Liquid and Gas)
 - b. Improvisation of Apparatus

- c. Inexpensive Sources of Chemicals
- iii. Science Kits
- iv. Laboratory as a Learning Resource- Approaches to laboratory work, Planning and organising laboratory work, Working in group in the laboratory
- v. Handling Hurdles in Utilization of Resources – Addressing underutilization of resources.
- vi. ICT resources – e-Text books, Journals, Websites, Magazines, Different forms of ICT and its applications in science education- Audio-aids, Video-aids, Audio-Video aids, educational T.V., Use of computer for simulations, internet and Open Educational Resources

9. Planning for Teaching-Learning of Physical Sciences

- i. Planning - Annual Plan, Unit Plan and Period plan
- ii. Identification and Organisation of Concepts for teaching -learning of science / Physics and Chemistry (Motion, Work and Energy, Matter and their Measurements, Carbon and its Compounds, Periodic Properties of Elements, Atomic Structure, Dual Nature of Matter and Radiation).
- iii. Elements of a Physical Science Lesson- Learning objectives and key concepts, Pre-existing knowledge, Teaching-learning materials and involving learners in arranging them, Introduction, Presentation/ Development, Assessment: Acceptable evidences that show learners understand (i) Determining learning evidences (ii) Planning of the acceptable evidences of learning for assessment Extended learning/assignment.
- iv. Making Groups-Why group learning? Facilitating formation of groups
- v. Planning and Organising Activities in Physical Science
- vi. Planning Laboratory Work – State commitments in organizing experiments Text-book orientation.
- vii. Planning ICT Applications - Integrating ICT in teaching and learning process

10. Physical Science Teacher

- i. Characteristics and role Science Teacher
- ii. Professional Development
- iii. Reflective Practices
- iv. Science Teacher as a Researcher

11. Tools and Techniques of Assessment

- i. Test, Examination, Measurement, Assessment and Evaluation.
- ii. Continuous and Comprehensive Evaluation (CCE)- Educational assessment and educational evaluation, Performance-based assessment: A flexible way of school based assessment.
- iii. Assessment Framework,
 - a. Purpose of assessment
 - b. Learning Indicators (LI);

- Types of indicators
 - Illustrations of Learning Indicators,
 - Assessment of activity
 - Assessment of presentation
 - Assessment of group work
 - Assessment of collaborative learning
- c. Tools and Techniques of Assessment
- Written test
 - Project Work
 - Field trips and field diary
 - Laboratory work
 - Interview/Oral test
 - Journal writing
- d. Recording and Reporting
- Measurement of students' achievements
 - grading system
 - Measurement of process skills
 - Measurement of attitudes
 - Portfolios
- e. Reflecting Process; Assessment as a reflecting process
- iv. Assessment of Learning of Students with Special Needs.