

तृतीय पत्र (Paper III) : Technical Subject

Section A- 30 Marks

- 1. Properties of matter** **10%**
 - 1.1 Vector, Motion, Torque.
 - 1.2 Circular motion, Simple harmonic motion
 - 1.3 Gravitation and Gravity
 - 1.4 Fluids at rest, Elasticity.
 - 1.5 Thermometry and Calorimetry
 - 1.6 Thermodynamics, Heat transfer.

- 2. Light, Sound Electricity and magnetism** **10%**
 - 2.1 Basic properties, Huygen's principle.
 - 2.2 Interference, Diffraction, Polarization of light,
 - 2.3 Electromagnetic waves.
 - 2.4 Beats, Stationary waves, Waves in strings, Waves in pipes, Musical notes of sound
 - 2.5 Charge, Current, Potential difference, Power
 - 2.6 Whetstone bridge, Potentiometer
 - 2.7 Magnetic effects of electric current
 - 2.8 Alternating currents
 - 2.9 Magnetic materials
 - 2.10 Semiconductor, Electronics

- 3. Earth and Space Science** **10%**
 - 3.1 Origin of Solar system
 - 3.2 Solar system and its members
 - 3.3 Eclipse, Satellites, Meteors, Comets, Galaxies
 - 3.4 Astronomical instruments
 - 3.5 Sun and Stars
 - 3.6 Earth quake: Meaning, Causes, nature, prevention measures
 - 3.7 Mountains: Formation, advantages, disadvantages
 - 3.8 History of the Earth: Major division, size, functions of each part, Rocks, uses

Section B- 20 Marks

- 4. Atomic structure, Periodic Table and Chemical Bonding** **10%**
 - 4.1 Rutherford's, Bohr's model, drawbacks
 - 4.2 Quantum numbers, Orbitals
 - 4.3 Pauli's & Aufbau's principle
 - 4.4 Hydrogen spectrum.
 - 4.5 Classification, Hybridization
 - 4.6 Interpretation, properties of Chemical bondings
 - 4.7 Vanderwaal force
 - 4.8 Modern periodic table
 - 4.9 Important periodic properties
 - 4.10 Bond energy Electron affinity, Atomic size, Ionic radius
 - 4.11 Superiority and defects of Long form of periodic table

लोक सेवा आयोग
नेपाल शिक्षा सेवा, शिक्षा प्रशासन समूह, विज्ञान उपसमूहको राजपत्राङ्कित तृतीय श्रेणी पदको खुल्ला
प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

- 5. Metals and metallurgy, man made materials, Organic compounds 10%**
- 5.1 Extraction, properties, uses of Group I B and Group II B, Group VIII
 - 5.2 Preparation, properties and uses of Copper oxide, Cupric Sulphate, Cupric Carbonate, Silver chloride, Silver nitrate
 - 5.3 Plastics, Pesticides, Cement, Glass, Fibers, Soaps, Detergents, (nature preparation, properties, uses)
 - 5.4 Homologous series
 - 5.4.1 Alkenes, Alkenes, Alkynes
 - 5.5 Benzene
 - 5.5.1 Structure, preparation & properties
 - 5.6 Introduction, general methods of preparation, physical and chemical properties of Aromatic nitro compounds
 - 5.6.1 Amino compounds
 - 5.6.2 hydroxy compounds
 - 5.6.3 aldehyde, Ketone
 - 5.6.4 Carboxylic acids

Section C- 20 Marks

- 6. General Biology and Evolution 10%**
- 6.1 Algae, Fungi, Bryophyta, Pteridophyta: Habit, habitat, structure & lifecycle
 - 6.2 Classification of plants & animals
 - 6.3 Microbiology (bacteria): Symptoms, modes of transmission & control
 - 6.4 Plant Physiology & anatomy: Cell division, Mendel's law, gene and gene action, Evolution
- 7. Economic Biology and Environmental Science 10%**
- 7.1 Economic plants: Distribution, Classification, economic importance of medicinal and vegetable plants
 - 7.2 Economic zoology :Bee, Sericulture, (silkworm), Pesiculture (fish)
 - 7.3 Ecosystem, biochemical cycle
 - 7.4 Environmental pollution

Section D- 30 Marks

- 8. Nature, Objectives and Psychology of learning 10%**
- 8.1 Nature, Objectives of Science Teaching
 - 8.2 Psychology of learning in relation to science
 - 8.2.1 Piaget, Brunner, Gagne
- 9. Curriculum & Methods of Teaching 10%**
- 9.1 Curriculum, Curriculum materials in science education
 - 9.2 Techniques of science teaching
 - 9.3 Use of environmental resources
 - 9.4 Facilities
 - 9.5 Some innovative science curriculum and projects
- 10. Planning Evaluation 10%**
- 10.1 Planning
 - 10.2 Evaluating Student's learning
 - 10.3 Professional growth of Science Teacher/ personnel

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प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र
लिइने **सामूहिक परीक्षण (Group Test)** को लागि

सामूहिक छलफल (Group Discussion)

यस प्रयोजनको लागि गरिने परीक्षण १० पूर्णाङ्क र ३० मिनेट अवधिको हुनेछ जुन नेताविहिन सामूहिक छलफल (Leaderless Group Discussion) को रूपमा अवलम्बन गरिने छ । दिइएको प्रश्न वा Topic का विषयमा पालैपालोसँग निर्दिष्ट समयभित्र समूहबीच छलफल गर्दै प्रत्येक उम्मेदवारले व्यक्तिगत प्रस्तुति (Individual Presentation) गर्नु पर्नेछ । यस परीक्षणमा मूल्याङ्कनको लागि देहाय अनुसारको ३ जनाको समिति रहनेछ ।

आयोगका अध्यक्ष वा सदस्य	-	अध्यक्ष
मनोविज्ञ	-	सदस्य
दक्ष/विज्ञ (१ जना)	-	सदस्य

सामूहिक छलफलमा दिइने नमुना प्रश्न वा Topic

उदाहरणको लागि - उर्जा संकट, गरीबी निवारण, स्वास्थ्य बीमा, खाद्य सुरक्षा, प्रतिभा पलायन जस्ता Topics मध्ये कुनै एक Topic मात्र दिइनेछ ।