शिक्षा ऐन, २०२८, (संधोधनसहित) को दफा ११(च) को उपदफा (१) को खण्ड (ख) को प्रतिबन्धात्मक वाक्यांशको १, २ र ३ बमोजिम आधारभूत तह (साविक निम्न माध्यमिक तह कक्षा ६-८) मा कार्यरत अस्थायी शिक्षकहरुले मात्र प्रतिस्पर्धा गर्न पाउने प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

लिखित परीक्षा योजना

यस पाठ्यक्रमलाई दुई भागमा बाँडिएको छ ।

१ .लिखित परीक्षा - पूर्णाङ्क १०० **उत्तीर्णाङ्क : ४०**

२ .अन्तर्वार्ता - पूर्णाङ्क २५

लिखित परीक्षा

समय : ३ घण्टा

खण्ड	विषय	परीक्षा प्रणाली	अङ्क भार	प्रश्न सङ्ख्या	समय
क	शिक्षासम्बन्धी : आधारभूत ज्ञान, पाठ्यक्रम तथा शिक्षण विधि र प्रविधि	वस्तुगत/ बहुवैकल्पिक	४०	४० X १	४५ मिनेट
ख	सम्बन्धित विषयवस्तुको ज्ञान	विषयगत	६०	६ X १०	२ घण्टा १५ मिनेट
जम्मा			१००	४६	

द्रष्टव्य :

१. खण्ड **क** र ख का उत्तरपुस्तिहरु अलग अलग हुनेछन् ।

२. वस्तुगत र बिषयगत परीक्षा एकैपटक सञ्चालन हुने छ ।

३. लिखित परीक्षाको माध्यम अङ्ग्रेजी वा नेपाली वा दुबै भाषा हुनेछ । भाषा विषयहरूका हकमा सम्बन्धित भाषामा नै उत्तर दिनुपर्नेछ ।

४. यो पाठ्यक्रम मिति २०७३/१२/०२ गतेदेखि लागु हुनेछ ।

५. खण्ड क बमोजिमको वस्तुगत प्रश्न सबै विषयका लागि एउटै हुनेछ ।

शिक्षा ऐन, २०२८, (संधोधनसहित) को दफा ११(च) को उपदफा (१) को खण्ड (ख) को प्रतिबन्धात्मक वाक्यांशको १, २ र ३ बमोजिम आधारभूत तह (साविक निम्न माध्यमिक तह कक्षा ६-८) मा कार्यरत अस्थायी शिक्षकहरुले मात्र प्रतिस्पर्धा गर्न पाउने प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

आधारभूत तह (साविक निम्न माध्यमिक तह कक्षा ६-८)

विषय : विज्ञान

Section B : Content Knowledge of Subject Matter -60 Marks

A. Physics, Geology and Astronomy 30 Marks

1. Mechanics, Heat and Optics

1.1 Mechanics

1.1.1 Scalar and vector quantities
1.1.2 Newton's laws of motion
1.1.3 Conservation of Momentum
1.1.4 Verification of Newton's laws of Gravitation
1.1.5 Work, Energy and Power
1.1.6 Hooke's law
1.1.7 Simple Harmonic Motion and its Application
1.1.8 Pressure in a fluid
1.1.9 Archimedes Principle

1.2 Heat and Optics

1.2.1 Thermal expansion
1.2.2 Specific heat capacity
1.2.3 First and second laws of thermodynamics
1.2.4 Nature and propagation of light
1.2.5 Refraction at plane surfaces
1.2.6 Newton's rings
1.2.7 Defects of vision and their correction
1.2.8 Phenomenon of polarization of light

1.3 Numerical problems related to mechanics, heat and optics

2. Waves, Sound, Electricity and Magnetism

2.1 Wave and Sound

2.1.1 Longitudinal and Transverse motion of waves
2.1.2 Ultra and Infra sound
2.1.3 Sound pollution
2.1.4 Sonometer

2.2 Electricity and Magnetism

2.2.1 Ohm's law
2.2.2 Electromotive force and potential difference
2.2.3 Thermoelectric effect-See beck Effect
2.2.4 Faraday's laws of electromagnetic induction
2.2.5 Factors affecting resistance
2.2.6 Magnetic field and angle of declination
2.2.7 Dia-, Para- and Ferro-magnetic materials
2.2.8 Magnetic effect of current-Oersted's experiment

2.3 Numerical Problems relation to waves, sound, electricity and magnetism

3. Modern Physics

3.1 Cathode rays, X-Rays and Radioactivity (Meaning ,Properties and Uses)
3.2 Nuclear Reaction : Meaning and its Types

4. Astro-Geo Science

4.1 Geology

4.1.1 History of the earth
4.1.2 Structure of the earth
4.1.3 Types of rocks
4.1.4 Green House Effect
4.1.5 Water Cycle
4.1.6 Natural disasters
4.1.7 Minerals
4.1.8 Volcano and earthquake
4.1.9 Ozone layer, its importance and depletion of ozone layer

4.2 Astronomy

4.2.1 Solar system
4.2.2 Galaxies
4.2.3 Lunar and solar eclipses
4.2.4 Birth and death of stars and its significance
4.2.5 Satellites`
4.2.6 Constellations
4.2.7 Heliocentric theory

B. Chemistry 15 Marks

5. Chemical Arithmetic, Atomic Structure, Electronic Theory of Valency and Bonding

5.1 Chemical Arithmetic

5.1.1 Postulates of Dalton's atomic theory
5.1.2 Law of conservation of mass
5.1.3 Law of constant proportions
5.1.4 Law of multiple proportions
5.1.5 Law of reciprocal proportions
5.1.6 Law of gaseous volumes

5.2 Atomic Structure and, Electronic Theory of Valency and Bonding

5.2.1 Discovery of fundamental particles of atom
5.2.2 Bohr's model of atom and its limitation
5.2.4 Electronic configuration of the atom and ions
5.2.5 Octet rule
5.2.6 Ionic and Covalent bonds, ionic and covalent compounds and their properties

6. Periodic Table

6.1 Modern periodic law and modern periodic table
6.2 Characteristics of element on the basis of electronic configuration
6.3 Ionization Potential, Electron affinity and Electro negativity

7. Laboratory preparation of hydrogen, oxygen, carbon dioxide, nitrogen and ammonia gases

8. Metallurgy

8.1 Characteristics of metals, non-metals and metalloids
8.2 Extraction, properties and uses of copper, zinc, mercury, iron an d silver

9. Properties and uses of chemical and organic fertilizers and Properties and uses of pesticides

(insecticides, herbicides, weedicides and fungicides)

10. Basics of organic chemistry
    10.1 Definition of organic compounds
    10.2 Bonding and Hybridization
    10.3 Tetracovalency and catenation property of carbon
    10.4 Differences between organic and inorganic compounds
    10.5 Alkanes, alkenes and alkynes(structures, general preparation - including laboratory preparation of ethene and ethyne, properties and uses)

C.Biology **15 Marks**

11. Cell Biology, Biodiversity, Economic Biology, Sociobiology and Environmental Science
    11.1. Cell Biology, Biodiversity and Economic Biology
        11.1.1 Structures of plant and animal cell
        11.1.2 Plant and animal tissues with their functions
        11.1.3 Protoplasm and Chromosome
        11.1.4 Mitosis and Meiosis cell division
        11.1.5 Laws of inheritance (Mendalism), Mono-hybrid cross
        11.1.6 Life cycle of plasmodium volvox , paramecium, marchentia and funaria
        11.1.7 Economic importance of nostoc, virus, mushroom, earthworm, silkworm , honey bee , jute ,cotton, cardamom and coffee
        11.1.8 General characters and classification of leguminosae, compositae, protozoa, porifera , mollusca and chordata
        11.1.9 Metabolism: Photosynthesis/Respiration, Mineral nutrition
    11.2. Sociobiology and Environmental Science
        11.2.1. Diseases: Typhoid, Tuberculosis and Cancer
        11.2.2 Structural and functional aspects of Pond and Forest Ecosystems
        11.2.3 Interaction of biotic and abiotic factors
        11.2.4 Ecological pyramids, productivity
        11.2.5 In-situ and Ex-situ Conservation of animals
        11.2.6. Bio-Geo-Chemical cycles: carbon and nitrogen
        11.2.7. Physiological system of human (digestive, circulatory, respiratory, excretory, urinary. reproductive, muscular, skeleton, nervous system and glandular system)