

## SYLLABUS FOR ENTRANCE TEST-2024

### M.Sc. Remote Sensing and GIS Applications

#### H.N.B. GARHWAL UNIVERSITY

Srinagar Garhwal, Uttarakhand-246 174

The Test will consist of 2 sections (section A and B) of 100 questions which are to be answered in 2 hours time. Each question will be of one mark. All the questions will be objective type with multiple choices out of which only one is correct. A candidate must choose only the correct answer to score full marks. If a question has not been attempted no credit will be given.

#### **SECTION A:**

**a) Mathematical Ability & General Awareness:** (20 questions – objective type) HCF and LCM of numbers, decimal fractions, simplification, square root and cube root, percentages, ratio and proportion, chain rule, time and work, time and distance, profit and loss, simple interest and compound interest, area of plane figures, volume and area of solid figures, clocks, stocks and shares, true discount, bankers discount, odd man out and series, problems on ages. Differentiation, Integration, Differential Equation, Matrices and Determinants. Topics related to current affairs.

**b) Logical Reasoning:** (15 questions – objective type) Questions to test ability for logical reasoning, quantitative reasoning, and graphical reasoning.

**c) English Language and Comprehension:** (15 questions – objective type) Questions to test command over the English language.

#### **SECTION B:** (50 questions – objective type, 05 questions in each category)

**a) Agriculture & Soil:** Factors determining agro ecological zones and geographic distribution of crop plants, intercropping and mixed cropping. Origin and types of soils. Land degradation, erosion, land reclamation.

**b) Atmospheric Sciences:** The Earth and the Solar System, Earth Materials, Greenhouse gases and global warming. Cloud formation and precipitation processes, General weather systems of India, Monsoon system, distribution of precipitation over India, ozone depletion.

**c) Computer Applications:** Basic computer awareness and uses. Programming instructions, simple algorithms and computational methods.

**d) Disaster Management:** Natural disasters and technical disasters, agriculture drought, floods, forest fires and diseases.

**e) Environmental Sciences:** Man and Environment, Physico-chemical and Biological factors in the Environment, Geographical classification and zones, Structure and composition of atmosphere, hydrosphere, lithosphere and biosphere.

**f) Forestry & Ecology:** Forest Classification, Forest management. Habitat and niche, Population ecology, Community ecology, Ecological succession, Ecosystem, Biogeography, Conservation biology.

**g) Geosciences:** Modern theories on the origin of the Earth and other planetary bodies. Earth's orbital parameters, Kepler's laws of planetary motion, Geological Time Scale, Age of the Earth, Basic principles of stratigraphy, Theories about the origin of life.

**h) Resources & their Utilization:** Allocation of natural resources and measuring resource scarcity. Resources classification systems, natural and cultural resources, renewable and non-renewable resources. Resource Conservation - resource monitoring and management, Sustainable development of natural resources.

**i) Wildlife Management:** Methods of estimating population density of animals and plants, ranging patterns through direct, indirect and remote observations, habitat characterization.

**j) Water Resources:** Sources of irrigation (rain, canals, tanks, rivers, wells, tube wells), soil moisture content and weather parameters, Water requirement of crops, Methods of irrigation and drainage, watershed management.