

ELECTIVE PAPER

MEN-E 305 : Himalayan Geology and Ecology

M.M.: 70

UNIT I

Geological features of rocks (in brief): Introduction, Folds and foldings, Faults and faulting, Types of mountains and their physiographic features with special reference to Himalayas, Seismicity and Neotectonics in the Himalayas and their effect on environment.

UNIT II

Climate of the Himalayas and the influence of the Himalayas on the climate of India, Forests and Forestry in Himalayan region (Introduction, Floristics, Forest influences, forest destruction and denudation), Forest types and productivity, Carbon sequestration, Forest base industries, Shifting cultivation, Migratory grazing). Economically important flora of Himalayan region with special reference to food, fodder, fibre, timber and medicinal importance.

UNIT III :

Crop resources and their genetic upgrading in the Himalayan region (Crop resources, Problems of crop improvement, Genetic upgrading of crop resources), Plant genetic resources (Introduction, botanical wealth, Plant genetic resources, inventory and present status, Vertical distribution of genetic diversity, conservation of resources), Glacier resources of the Himalayas and their importance to environmental studies, Total ice cover, Distribution of ice cover, Ice as a water resource, Cooling effects of glaciers, Debris and Glaciers).

UNIT IV

Land-capability; classification for Himalayan region (Introduction, texture, slop, erosion, climate), Soil erosion & sedimentation (Introduction, Sedimentation in small reservoir, Sedimentation in big erosion and flood), Resources and development of aquatic life of the Himalayas (Introduction, the salient feature of watershed, Resources of aquatic life, Conservation and development).

UNIT V

Ecotourism: Tourism in the Himalayan region and its impact, agriculture system and problems of agriculture in the Himalayan region, problems of water resource development, agro-based industries, socio-economic aspects of resource mobilization in the Himalayan region.

NOTE: The question paper shall consist of two sections (A & B). Section A shall contain ten short answer type questions of six marks each and student has to attempt any five questions in about 150 words each. Section B shall consist eight long answer type questions of ten marks each and student shall be required to attempt any four questions in detail. Questions shall be uniformly distributed from the entire syllabus. The previous year paper can be used as a guideline and the following syllabus should be strictly followed while setting the question paper.