

Unit III: Dynamic Biogeography

5. Distinguish between background extinction and mass extinction. State the different spatial patterns of speciation. Explain the concept of punctuated equilibrium with respect to evolution of species. 2+4+4
6. Critically examine the plant succession theory proposed by Tansley (1935). Mention the environmental conditions leading to transient and cyclic climaxes. Narrate the effects of the last glacial epoch on the megafaunal distribution pattern throughout the earth. 4+2+4

Unit IV: Spatial Dimensions in Biogeography

7. How does Bergmann's rule justify thermoregulatory advantages? Compare dispersal and vicariance as determinants of disjunction. Describe the different mechanisms of dispersal with examples. 2+2+6
8. Differentiate between fundamental and realized niche. What is the Great American Biotic Interchange? Establish the relationship equilibrium number of species, island area and island isolation. 2+2+6

Internal Assessment**10****M. Sc. GEOGRAPHY EXAMINATION, 2023**

(1st Year, 2nd Semester)

SOIL SCIENCE AND BIOGEOGRAPHY**COURSE CODE: Sc/ GEOG/PG/CORE/TH/08****PAPER: GEOG-C108T**

Time : Two Hours

Full Marks : 50

Answer *one* question from each unit**Unit I: Pedogenic Processes and Forms**

1. Highlight the importance of pedo-transfer functions. Why basic cations are mostly found in arid region surface soils? How sodic soils are different from saline soils? 3+3+4
2. Define humification. How do differential water densities and ion exchanges lead to sedimentation in estuarine environments? Enumerate the effects of any two major clay minerals in influencing soil physical and chemical properties. 2+3+5

Unit II: Soils of Humid Tropics

3. Differentiate between azonal and intra-zonal soils. Elucidate the processes of eluviation and illuviation in the development of podzol profile. 3+7
4. Explain the difference of dominant soil formation processes in the tropical and the temperate regions of the world. 10

[Turn over