

**2021**

**GEOGRAPHY — HONOURS**

**Third Paper**

**Full Marks : 100**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**Module - V**

**[Climatology]**

**(Marks : 50)**

**Category - A**

Answer *any three* questions.

1. Give a reasoned account of the nature, composition and layering of the atmosphere with suitable diagrams. 6+4
2. What is inversion of temperature? Explain the different types of inversions with diagrams. 2+8
3. Explain the collision-coalescence theory of raindrop formation. Distinguish between frontogenesis and frontolysis. 6+4
4. Define albedo. Analyze the factors for controlling the insolation. 2+8
5. What are the bases of Koppen's climatic classification of the world? Mention its merits and demerits. 7+3

**Category - B**

6. Answer *any five* questions : 4×5
  - (a) Write a short note on index cycle.
  - (b) Explain the process of adiabatic change of temperature.
  - (c) What is ITCZ? Why does it shift?
  - (d) Why are isotherms usually not parallel to the latitudes?
  - (e) Explain the thermal engine concept in relation to the monsoon system.
  - (f) Account for the genesis of an anticyclone.
  - (g) How is latitudinal heat balance maintained?
  - (h) Elucidate the structure of a tropical cyclone.

**Please Turn Over**

**Module - VI**

**[Soil and Biogeography]**

**(Marks : 50)**

**Category - A**

Answer *any three* questions.

7. Distinguish between soil texture and soil structure. Briefly explain their role on crop productivity. 4+6
8. Describe the profile characteristics of Podzol soil mentioning the favourable environmental conditions for its development. 10
9. Enumerate the components and functions of the nitrogen cycle. Comment on its ecological importance. 8+2
10. Describe the different types of trophic pyramid with suitable diagrams. 10
11. What is biome? Describe the characteristics of Tropical Rainforest Biome with special reference to its biodiversity. 2+8

**Category - B**

12. Answer *any five* questions : 4×5
    - (a) Distinguish between ektodynamomorphic and endodynamomorphic soils.
    - (b) What is the significance of soil organic matter?
    - (c) How is soil fertility different from land capability?
    - (d) pH 4 is 100 times more acidic than pH 6 — Explain.
    - (e) Distinguish between Pedocal soils and Pedalfer soils.
    - (f) State the importance of mangrove ecosystems.
    - (g) Bring out the environmental consequences of deforestation.
    - (h) Distinguish between ecotone and niche.
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