

Total number of printed pages-7

3 (Sem-2/CBCS) GGY HC 2

2022

GEOGRAPHY

(Honours)

Paper : GGY-HC-2026

(Climatology and Biogeography)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Answer ***any seven*** of the following questions by choosing the most appropriate option given against each question : $1 \times 7 = 7$

(a) The headquarters of the Indian Meteorological Department (IMD) is located at which of the following city ?

- (i) Bangalore
- (ii) Dehradun
- (iii) New Delhi
- (iv) Pune

Contd.

(b) The coldest layer of the earth's atmosphere is —

- (i) Lower starting point of the mesopause
- (ii) Outer boundary of the ozonosphere
- (iii) Upper boundary of the troposphere
- (iv) Sporadic E-layer within the ionosphere

(c) The term 'Edaphic Factors' is synonymously used for —

- (i) Factors influencing distribution of plants
- (ii) Factors influencing soil formation processes
- (iii) Factors influencing food chain within ecosystem
- (iv) Factors influencing distribution of insolation

(d) Which of the following country does not fall within Boreal Forest or Taiga Biome ?

- (i) Canada
- (ii) Finland
- (iii) Madagascar
- (iv) Russia

(e) In which of the following National Park Red Panda is found ?

- (i) Keibul Lamjao National Park
- (ii) Nokrek National Park
- (iii) Simlipal National Park
- (iv) Eravikulam National Park

(f) 'Megatherms', as per Koppen's climate classification scheme, are —

- (i) Plants growing in hot deserts
- (ii) Plants growing in very high altitude areas
- (iii) Plants growing in hot and humid climate
- (iv) Plants growing in polar areas

(g) G. T. Trewartha designated the dry climatic areas by the letter —

- (i) A
- (ii) B
- (iii) C
- (iv) D

(h) Which of the following is not an example of 'heterotroph' in an ecosystem ?

(i) Snakes

(ii) Green Plants

(iii) Mosquitoes

(iv) Herbivore animals

(i) Largest depletion hole in the Ozone layer of the atmosphere is detected over —

(i) Antarctica

(ii) Industrial Region of Eastern USA

(iii) Manchuria Industrial Region of China

(iv) Northern areas of the Greenland island

(j) The terms 'Roaring Forties' and 'Furious Fifties' are associated with -

(i) Hurricanes

(ii) Typhoons

(iii) Tornadoes

(iv) Westerlies

2. Answer **any four** of the following questions in very short : $2 \times 4 = 8$

(a) What do you mean by 'lapse rate' ?

(b) What is "Ferrel's law" in Climatology ?

(c) Mention *any two* endemic species of animals found in 'Neotropical Zoogeographical Region'.

(d) Mention *any two* processes associated with soil formation.

(e) What do you mean by 'biodiversity hotspot' ?

(f) What is 'albedo' of the earth atmosphere ?

(g) Write *any two* examples of 'local wind'.

(h) Cite *one* example of each of *producer* and *consumer* in a pond ecosystem.

3. Write short answer of **any three** of the following questions : $5 \times 3 = 15$

(a) Write an account of the composition of the earth's atmosphere.

(b) What do you mean by 'Inversion of Temperature' ? Mention the factors responsible for temperature inversion.

- (c) What do you mean by 'humidity'? Differentiate between 'absolute' and 'relative' humidity.
- (d) Elucidate the concept of 'Heat Budget' of the Earth's atmosphere.
- (e) With examples, briefly describe the structure of a grassland ecosystem.
- (f) With a neat diagram, discuss different horizons found in a mature soil profile.
- (g) Briefly discuss different factors associated with the soil formation process.
- (h) Briefly explain the mechanism associated with the origin of monsoon in Indian subcontinent.

4. Answer **any three** of the following questions :

10×3=30

- (a) What is biogeography? Discuss its scope and significance. 2+4+4=10
- (b) What do you mean by 'insolation'? Explain different factors affecting global distribution of 'insolation'. 2+8=10

- (c) Differentiate between 'Tropical' and 'Extra Tropical Cyclones' with special reference to formation and weather conditions associated with these.
- (d) What is 'biome'? Classify different biomes found over the globe and discuss *any one* of these in detail. 2+3+5=10
- (e) Discuss in detail the scheme of Climate classification put forward by G. T. Trewartha.
- (f) With a neat diagram, discuss how temperature condition changes in different structural layers of the Earth's atmosphere.
- (g) With examples, discuss the factors affecting geographical distribution of plants and animals over the earth's surface.
- (h) With a diagram, explain different air pressure belts observed over the earth surface and the planetary wind system associated with these air pressure belts. 4+6=10