

U.G. 3rd Semester Examination-2021**ENVIRONMENTAL SCIENCE****[HONOURS]****Course Code : ENVS-H-CC-L-07****(Atmosphere and Global Climate Change)**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **five** of the following: $2 \times 5 = 10$
- Why does not life exist on Venus?
 - What is Kyoto protocol?
 - Why ozone depletion occurs mainly over Antarctica?
 - What is the difference between El Nino and La Nina?
 - Write the adverse effects of acid rain on monuments.
 - Differentiate between weather and climate.
 - Define biological carbon sequestration with an example.

- h) Briefly discuss the impact of western disturbances on Indian subcontinent.
2. Write short notes on any **two** of the following: $5 \times 2 = 10$
- Indian monsoon
 - Montreal protocol
 - Plume: nature and behaviour
 - Global warming: causes and consequences
3. Answer any **two** of the following: $10 \times 2 = 20$
- Distinguish between photochemical smog and sulphurous smog? Discuss the role of hydroxyl radical in smog formation. Explain the formation of acid rain citing chemical equations involved. $4 + 3 + 3 = 10$
 - State the causes of temperature inversion. Distinguish between the sub-adiabatic and super-adiabatic condition of atmosphere. What are the synoptic conditions for tropical cyclone? $3 + 4 + 3 = 10$
 - What do you mean by Chapman cycle? Illustrate the cyclic reaction pathway of the depletion of ozone (O_3) molecule by CFC in the stratosphere. What are the adverse effects of ozone layer depletion? Give the number of

hydrogen, chlorine, fluorine and carbon atoms
for CFC-115. $2+3+2+3=10$

- d) Describe the three elements of Milankovitch cycle. Draw the temperature profile curve of atmosphere and highlight the characteristics of various layers of atmosphere. Why are CO_2 and H_2O (water vapour) greenhouse gases, but N_2 and O_2 are not? $3+4+3=10$
-