

Five Year Integrated M.Sc. Examinations 2024
Semester-V
Paper: EES-3-5-1
(Climatology and Climate Change)

Time: 4 hours

Full Marks: 80

Questions are of values as indicated in the margin.
Answer **Question No.1** and **any four** from the rest.

Write short notes on **any four** of the following.

1. (a) Synoptic scale weather
 (b) Beaufort Scale
 (c) ITCZ
 (d) Diurnal Temperature Range (DTR)
 (e) Wind rose
 (f) Heat Island Effect

4 x 4 = 16
2. Discuss the heat budget (radiation balance) of the earth.

16
3. (a) Explain the different types of precipitation.
 (b) Distinguish between radiation fog and advection fog.

8 + 8 = 16
4. (a) Explain the general atmospheric circulation pattern with the help of three cell model.
 (b) What are jet streams?

10 + 6 = 16
5. (a) What is ocean-atmosphere coupling?
 (b) Explain the causative factors for *El-Nino* phenomena?

6 + 10 = 16
6. (a) What are meant by plume and plume rise?
 (b) Discuss the factors which control the plume rise and how different meteorological parameters affect dispersal of plume.

(3+5) + (4 + 4) = 16
7. (a) What are Greenhouse effect and global warming? Briefly discuss the consequences of global warming.
 (b) Discuss the major international treaties and protocols for combating climate change.

(2+2+4) + 8 = 16