

10/12/2012



DOON UNIVERSITY, DEHRADUN
Final Semester Examination, First Semester, 2012
School of Environment & Natural Resources

M.Sc. (Natural Resource Management and Environmental Studies), PhD
Environmental Science
Course: EES – 520: (Atmosphere, Weather and Climate)

Time Allowed: 3 Hours

Maximum Marks: 50

Note: Attempt Questions from All Sections: A, B, C

SECTION: A (Answer limit – 25 words). Attempt any EIGHT Questions. (Marks: 1.5 x 8 = 12)

1. Why oxygen in the atmosphere appeared only after the appearance of plant life?
2. What is the reason for increase of temperature with height in the Stratosphere?
3. What type of radiation is absorbed by Greenhouse gases in the atmosphere?
4. Define the terms Evaporation and Condensation.
5. Write a short note on Cirrus clouds.
6. What are Cumulonimbus clouds? Why are they called convective clouds?
7. Explain the Buys-Ballot's Law
8. What is a Wind Rose?
9. What are Hydrometeors?
10. Define the terms Convergence and Divergence in the atmosphere?

SECTION: B (Answer limit – 250 words). Attempt any SIX Questions. (Marks: 3 x 6 = 18)

1. Short wave solar radiation.
2. Important features of winter weather over Himalaya.
3. Onset and northward movement of summer Monsoon over India.
4. The measurement of maximum and minimum temperatures over the earth surface.
5. Cyclones and Anticyclones in the atmosphere.
6. Effect of earth rotation on wind flow.
7. What are metrological instruments launched vertically in the atmosphere with a balloon.
8. Role of carbon dioxide in the atmosphere.

SECTION: C (Answer limit – 750 words). Attempt any TWO Questions (Marks: 2x 10 = 20)

1. Explain the vertical temperature profile in the atmosphere and roughly estimate the temperature at Tropical Tropopause starting from surface temperature of 30 °C.
2. With a neat diagram explain the atmospheric General Circulation around the globe in horizontal and vertical planes.
3. What are the four seasons during a year in India? Explain their main features including rainfall and temperature variability.