

**M.Sc. DEGREE I SEMESTER EXAMINATION IN ENVIRONMENTAL
TECHNOLOGY, NOVEMBER 2009**

ENV/ENB 2103 PHYSICAL PROCESSES IN THE ENVIRONMENT

Time : 3 Hours

Maximum Marks : 50

PART – A

(All questions carry EQUAL marks)

(5 x ½ = 2 ½)

I. Fill in the blanks :

1. The direction of winds in a cyclone is in the southern hemisphere.
2. The thunder producing cloud is
3. The upper most zone in the structure of the Earth is
4. The line joining places having same amount of precipitation is known as
5. The rate of decrease in air temperature with increase in height is referred to as

II. State whether the statements are true or false :

(5 x ½ = 2 ½)

1. Cumulus cloud is a member in the high cloud family.
2. Stefan – Boltzmann’s law explains the relationship between the temperature of a black body and wavelength of maximum emission of radiation from it.
3. In the thermocline region, water temperature decreases sharply with depth.
4. Curvature effect is related to cloud droplet formation.
5. The thickness of the troposphere is same from the equator to the poles.

III. Define the following :

(5 x 1 = 5)

1. Relative humidity
2. Virtual temperature
3. Albedo
4. Wind rose
5. Okta

IV. Distinguish between :

(4 x 1 ½ = 6)

1. Cyclonic and anticyclonic circulations
2. Upwelling and sinking
3. Warm cloud and cold cloud
4. Igneous rock and metamorphic rock

V. Write a short note on any one of the following :

(3 x 1 = 3)

1. Global warming
2. Structure of the Earth
3. Tropical cyclone

VI. Write an essay any one of the following :

(1 x 6 = 6)

1. Indian monsoon
2. Clouds and cloud classification
3. Ground water exploitation and management

(Turn Over)

PART - B(All questions carry EQUAL marks)

(5 x ½ = 2.5)

VII. Name the following :

1. The process by which the subsurface ocean water is transported upwards along a coast.
2. The subsurface water storage, which supports the wells and springs efficiently.
3. The mass of water vapour present in unit mass of moist air.
4. The meeting zone of two trade winds.
5. A closed isobaric pressure field having low pressure at the centre.

VIII. Choose the most appropriate answer :

(5 x ½ = 2.5)

1. The westerly wind is also known as

(a) 90° wind	(b) 0° wind
(c) 180° wind	(d) 270° wind
2. During the southwest monsoon period, the pressure gradient over the Indian subcontinent is generally

(a) from west to east	(b) from east to west
(c) from south to north	(d) from north south.
3. El - Nino is seen in the

(a) Atlantic Ocean	(b) Indian Ocean
(c) Arctic Sea	(d) Pacific Ocean
4. D. A. L. R. is

(a) always equal to S.A.L.R.	(b) always more than S.A.L.R.
(c) always lesser than S.A.L.R.	(d) also known as E.L.R.
5. Select the 'odd' term

(a) Shortwave radiation	(b) Terrestrial radiation
(c) Longwave radiation	(d) O.L.R.

IX. Write short notes on any four of the following :

(4 x 2 ½ = 10)

1. Vertical temperature profile of the atmosphere
2. Aerosols
3. El Nino
4. Plate tectonics and continental drift
5. Mountain winds and waves
6. Atmospheric pollution
7. Radiation laws

X. Elaborate upon any two of the following :

(2 x 5 = 10)

1. Composition of the atmosphere
2. Depletion of solar radiation in the atmosphere
3. Geological hazards
4. Salinity and temperature profiles of the ocean.