5. The most important variable minor constituent of air is -
   (a) Carbondioxide.
   (b) Ozone.
   (c) Nitrogen.
   (d) Oxygen.

II. Fill in the blanks:- (5 x ½ = 2½)

1. Colouration of the sky is due to.....of solar radiation by atmospheric gas molecules.
2. The Coriolis force is zero at the.....
3. The meeting zone of the two trade winds is known as .....
4. The value of D.A.L.R. is .....
5. Ariabatic winds develop during .....time.

III. Define the following:- (4 x 1 = 4)

1. Polar front.
2. Wien's displacement law.
3. Specific humidity.
4. Cold cloud.

IV. Write short notes on *ANY THREE* of the following:- (3 x 2 = 6)

1. Bergeron process.
2. Composition of dry air.
3. Solar radiation.
4. Air quality modelling.

V. Answer *ANY TWO* of the following:- (2 x 5 = 10)

1. Write an essay on climate of India with special reference to the southwest monsoon circulation.

2. Explain the heat balance of the earth-atmosphere system.

3. Write an account on geostrophic and gradient motions.

Contd.....3

PART - B

(Answer *ALL* questions)
(All questions carry *EQUAL* marks)

VI. Choose the most appropriate answer:- (10 x ½ = 5)

1. Kepler's laws refer to the -
   (a) Radiation from the Sun.
   (b) Planetary motion.
   (c) Gravitational attraction between stars.

2. Greenhouse effect is related to -
   (a) Deforestation.
   (b) Global warming.
   (c) Afforestation.

3. Fluviatile processes refers to the -
   (a) River drainage systems.
   (b) Lakes and their inter-relationships.
   (c) Recharge of groundwater by rain.

4. The level of water saturation below the ground denotes the -
   (a) Groundwater table.
   (b) Underground water.
   (c) Hydrological level.

5. Permeability of a rock indicates its capacity for -
   (a) Water retention.
   (b) Passage of water.
   (c) Pure water storage.

6. Over-exploitation of groundwater in coastal areas could lead to -
   (a) Coastal erosion.
   (b) Pollution of seawater.
   (c) Saline incursion.

7. Internal structure of the earth was deduced with the help of -
   (a) S-waves.
   (b) P-waves.
   (c) P and S waves.

Contd.....4

8. Check dams would help greatly in -
   (a) checking pollution.
   (b) conservation of groundwater.
   (c) checking exploitation of groundwater.

9. Weathering of rocks by thermal expansion comes under -
   (a) mechanical weathering.
   (b) chemical weathering.
   (c) organic decomposition.

10. Landslides are partially prevented by -
   (a) afforestation.
   (b) preventing atmospheric pollution.
   (c) deforestation.

VII. Write short notes on *ANY FOUR* of the following:- (4 x 2½ = 10)

a) Groundwater pollution.
b) Solar radiation.
c) Earth's atmosphere.
d) Weathering of rocks.
e) Composition of the earth's crust.
f) Surface and groundwater.
g) Geological time scale.

VIII. Elaborate upon *ANY TWO* of the following:- (2 x 5 = 10)

a) Internal structure of the earth.
b) Groundwater exploitation and management.
c) Coastal erosion and its prevention.
d) Geological hazards and their mitigation.

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27/4/02

ET.1
02.3

M.Sc. DEGREE I SEMESTER EXAMINATION IN
ENVIRONMENTAL TECHNOLOGY
MARCH 2002

PHYSICAL PROCESSES IN THE ENVIRONMENT

Time : 3 Hours Maximum Marks: 50

ANSWER EACH PART IN A SEPARATE ANSWER BOOK

PART - A

(Answer ***ALL*** questions)
(All questions carry ***EQUAL*** marks)

(5 x ½ = 2½)

I. Choose the most appropriate answer:-

1. Radiations emitted from the surface of the Earth is referred to as -
   (a) Short-wave radiations.
   (b) Ultra-Violet radiations.
   (c) Long-wave radiations.
   (d) Atmospheric radiations.

2. Coriolis force acts on a moving body -
   (a) along the direction of motion.
   (b) perpendicularly leftwards in the northern hemisphere.
   (c) perpendicularly rightwards in the southern hemisphere.
   (d) perpendicularly rightwards in the northern hemisphere.

3. Which of the following is not included in the high cloud family?
   (a) Stratocumulus.
   (b) Cirrostratus.
   (c) Cirrocumulus.
   (d) Cirrus.

4. Tri-cellular model of general circulation was put forward by -
   (a) Hadley.
   (b) Ferrel.
   (c) Rossby.
   (d) Palmen.

(Turn Over