

M.Sc. DEGREE I SEMESTER EXAMINATION IN  
ENVIRONMENTAL TECHNOLOGY  
APRIL 2001

PHYSICAL PROCESS IN THE ENVIRONMENT

Time : 3 Hours

Maximum Marks : 50

**(ANSWER EACH PART IN A SEPARATE ANSWER BOOK)**

**PART - A**

Time: 1½ Hours

Maximum Marks: 25

I. Choose the most appropriate answer.

(5 x ½ = 2½)

1. Tropical troposphere has a thickness of -

- (a) 7 Km. (b) 17 Km.  
(c) 12 Km. (d) 50 Km.

2. The season in between June and September is known in India as -

- (a) Post monsoon season.  
(b) Pre monsoon Season.  
(c) North east monsoon season.  
(d) South east monsoon season.

3. The direction of southerly wind is expressed in terms of "degree" as -

- (a) 180° (b) 90°  
(c) 270° (d) 0°

4. Percentage volume abundance of carbon dioxide in the atmosphere is -

- (a) 0.3% (b) 0.03%  
(c) 3% (d) 0.003%

5. If a dry air parcel, having a temperature of 15°C, is lifted upwards from the surface of the Earth, its temperature at a height of 1 Km. would be -

- (a) 8.5°C (b) 10°C  
(c) 5°C (d) 15°C

7. Dunite is a monomineralic rock comprising entirely of -

- (a) quartz.  
(b) feldspar.  
(c) olivine.

8. Igneous rocks are -

- (a) primary rocks.  
(b) secondary rocks.  
(c) tertiary rocks.

9. Quartzite is an -

- (a) igneous rock.  
(b) sedimentary rock.  
(c) metamorphic rock.

10. Mohorovicic discontinuity separates -

- (a) crust and mantle.  
(b) crust and core.  
(c) core and mantle.

II. Write short notes on any four of the following:-

(4 x 2½ = 10)

- (a) Mohorovicic discontinuity  
(b) Transgression and Regression  
(c) Aquifers.  
(d) Unconformity  
(e) Ocean current.  
(f) Sial and Sima.

III. In about 500 words elaborate upon any two of the following:-

(5 x 2 = 10)

- (a) Internal structure of the earth.  
(b) Groundwater exploration, exploitation and management.  
(c) Coastal zone management.

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(Turn over)

**PART - B**

- II. Name the following:- (5 x ½ = 2½)
1. Thunder producing cloud.
  2. Aerosols of radii less than 0.1 micrometer.
  3. The scientist who put forward the first model of general circulation.
  4. The zone where the two trade winds meet.
  5. Anticlockwise winds in the northern hemisphere.
- III. Write short notes on any four of the following:- (4 x 2½ = 10)
1. Vertical temperature profile of Earth's atmosphere.
  2. Surface winds pattern.
  3. Seasons of India.
  4. Coriolis force.
  5. Air pollutants.
  6. Clouds.
- IV. Answer any two of the following:- (2 x 5 = 10)
1. Explain geostrophic and gradient motions.
  2. Describe the heat balance of the Earth atmosphere system.
  3. Write an essay on general circulation of Earth-atmosphere system.

Contd.....3.

Time: 1½ Hours

Maximum Marks: 25

- I. Answer all questions choosing the most appropriate one: (10 x ½ = 5)
1. The internal structure of the earth is inferred from the study of -
    - (a) P - waves.
    - (b) S - waves.
    - (c) P and S waves.
  2. Darcy's law relates to the flow of fluids in -
    - (a) Underground rocks.
    - (b) Sedimentary rocks.
    - (c) Surface rocks.
  3. Fluvial drainage relates to -
    - (a) lakes.
    - (b) rivers.
    - (c) lagoons.
  4. Rocks are an aggregate of -
    - (a) Minerals and soils.
    - (b) Minerals.
    - (c) Crystals.
  5. Earthquake intensity is measured on the -
    - (a) Moh's scale.
    - (b) Richter scale.
    - (c) Pascal scale.
  6. Igneous rocks are -
    - (a) pervious.
    - (b) impervious.
    - (c) porous.

Contd.....4.