U.G. 1st Semester Examination - 2018

ENVIRONMENTAL SCIENCE

(HONOURS)

Course Code : ENVH/CC-L-I

Earth and Earth Surface Processes

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Write short notes on (any **five**): $2\times5=10$

a) Earth's Core

b) Lower atmosphere

c) Holocene Period

d) Hotspot

e) Sedimentation

f) Anticlone structure

g) Lower order streams

h) Glacial deposit

[Turn over]

2. Write notes on any **two** of the following: $5\times2=10$

a) Geological time scale

b) Lithification process

c) Physical and chemical weathering of rocks

d) Aravalli mountain

3. State and explain the following (any **two**): $10\times2=20$

a) What is volcanism? State the difference between volcanism and magmatism.

b) What is rock-cycle? Explain it with neat sketches.

c) What is the difference between fluvial deposit and eolian deposit? Explain with neat sketches.

d) What is Pacific Ring of Fire? Explain the role of plate tectonics in earthquake generation.

U.G. 1st Semester Examination - 2018

ENVIRONMENTAL SCIENCE

(HONOURS)

Course Code : ENVH/CC-L-II

Environmental Chemistry & Environmental Physics

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** of the following: 2×5=10

a) What is photochemical smog?

b) Define molarity and normality. Give examples.

c) What is Antarctic vortex?

d) Distinguish between ionization potential and electron affinity.

e) What are the major inorganic and organic components of soil?

f) What are the different heat transfer processes?

g) State the First and Second Law of thermodynamics.

h) Explain Stefan Boltzmann's Law.

[Turn over]

Answer any **two** of the following: 5×2=10

a) Define a metal chelate complex. Discuss some applications of metal chelates. 2+3=5

b) What are the major regions of atmosphere? Mention the names of important chemical species present in each region? Why tropospheric lapse rate is reversed to that of stratospheric lapse rate? 2+2+1=5

c) What do you mean by persistent and non-persistent pesticides? Classify the pesticides on the basis of their

i) origin and

ii) chemical groups.

Give examples. 2+3=5

d) Write short notes on (any **one**): 5×1=5

i) Lambert-Beer's law and its applications

ii) Carnot engine and its importance

Answer any **two** of the following : 10×2=20

a) Discuss in detail the mechanisms of ozone layer depletion. How does ozone layer depletion affect living organism? How ozone layer can be protected? 4+2+4=10

b) What is the relation between atmospheric stability and temperature? Define adiabatic lapse rate and ambient lapse rate. Explain temperature inversion. 3+4+3=10

c) Define the terms: Diffusion and dispersion. What is plume? How many types of plume can be expected? Why does the shape of plume differ? What are ventilation coefficient and maximum mixing depth? 2+1+3+2+2=10

d) Write short notes on the following (any **one**): 10×1=10

i) Water quality monitoring

ii) Soil quality monitoring