TDC (CBCS) Odd Semester Exam., 2019

ECOLOGY AND ENVIRONMENTAL SCIENCE

(1st Semester)

Course No. : EESHCC-101T

(Earth and Earth Surface Processes)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Write short notes on any *two* of the following : 2×2=4

(a) Geological timescale

(b) Hydrosphere

(c) Atmosphere

2. Answer any *one* of the following questions : 6

(a) Describe briefly on the formation and composition of the earth's core.

(b) Describe briefly the chemical composition of the earth.

UNIT—II

3. Write short notes on any *two* of the following : 2×2=4

(a) Continental drift

(b) Mantle convection

(c) Major plates

4. Answer any *one* of the following questions : 6

(a) Discuss briefly the concept of Pangaea and present-day continents.

(b) Describe briefly on the origin of the main geomagnetic field of the earth.

UNIT—III

5. Write short notes on any *two* of the following : 2×2=4

(a) Important rock-forming minerals

(b) Igneous rock

(c) Sedimentary rock

6. Answer any *one* of the following questions :

(a) Describe briefly the process of metamorphism in the formation of rocks. 6

(b) What do you mean by rock cycle? Describe briefly the rock cycle process with suitable diagrammatic illustration. 1+4+1=6

UNIT—IV

7. Write short notes on any *two* of the following : 2×2=4

(a) Composition of atmosphere

(b) Atmospheric circulation

(c) Optical properties of atmopshere

8. Answer any *one* of the following questions : 6

(a) Describe briefly atmosphere-ocean interface.

(b) Describe briefly ocean-land interface.

UNIT—V

9. Write short notes on any *two* of the following : 2×2=4

(a) Western and Eastern ghats

(b) Vindhyas

(c) Aravallis

10. Answer any *one* of the following questions : 6

(a) Describe briefly the formation of Himalayas.

(b) Describe briefly the development of glaciers.

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TDC (CBCS) Odd Semester Exam., 2019

ECOLOGY AND ENVIRONMENTAL SCIENCE

(1st Semester)

Course No. : EESHCC-102T

(Physics and Chemistry of Environment)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *two* of the following questions : 2×2=4

(a) State and explain Beer-Lambert law.

(b) What is quantum mechanics? How is it helpful?

(c) State the difference between conduction and convection of heat.

2. Answer *either (a) or (b)* :

(a) Define centripetal force. Derive the expression for centripetal force. State its application. 1+3+2=6

(b) Define work. Explain how work is related to force and energy with suitable illustration. 1+5=6

UNIT—II

3. Answer any *two* of the following questions : 2×2=4

(a) Explain with equation, what is redox reaction.

(b) Define one mole of a substance. Illustrate your answer with example.

(c) Define pH and pH scale.

4. Answer *either (a) or (b)* :

(a) Define ionization potential and electron affinity. Explain with suitable illustration how ionization potential and electronegativity vary along a period and group in periodic table. 2+2+2=6

(b) What are chemical bonds? What are the different types of chemical bonds? Explain briefly with suitable example. 1+2+3=6

UNIT—III

5. Answer any *two* of the following questions : 2×2=4

(a) What is acid rain? Why is it harmful?

(b) What are free radicals? How is it generated?

(c) What is stratosphere? In which region of the atmosphere ozone hole is formed?

6. Answer *either (a) or (b)* :

(a) What is CFC? How is it generated? Explain the role of CFCs in ozone layer depletion. 1+2+3=6

(b) What is photochemical smog? How is it formed? State the difference between sulphur smog and photochemical smog. 1+2+3=6

UNIT—IV

7. Answer any *two* of the following questions : 2×2=4

(a) What do you mean by hardness of water?

(b) Write a brief note on Tyndall effect.

(c) Explain how hardness of water can be estimated.

8. Answer *either (a) or (b)* :

(a) Why is water essential for living organisms? Write a brief note on chemical properties of water. 2+4=6

(b) What are colloids? Distinguish between lyophilic and lyophobic colloids. Enlist various colloidal particles present in water. 1+3+2=6

UNIT—V

9. Answer any *two* of the following questions : 2×2=4

(a) What are phenolic compounds? Name the various phenolic compounds present in soil.

(b) State the role of potassium in plant growth.

(c) What is cation and anion exchange reaction in soil?

10. Answer *either (a) or (b)* :

(a) Define soil. Write a note on the composition of soil. State the significance of soil for plants. 1+3+2=6

(b) What are organic carbon and organic matter? Explain the relation between organic carbon and organic matter in the soil. How are they essential for plant life? 2+3+1=6

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