

Tribhuvan University

2076

Bachelor 1st year/ Science and Tech.

Full Marks ; 100

Environmental Science (Env. 101)

Time ; 3 hrs

New Course

Section A

- 1.1 How did human society develop from hunter and gatherers to the modern industrial society? Explain
- 1.2 Discuss exponential and logistic growth models of population.

OR

Describe the importance of phosphorus in ecosystem.

- 1.3 Describe transportation and fate of pesticides in soil.

OR

Describe briefly on metrological fundamentals of atmosphere.

- 1.4 Define rocks. Describe formation and types of rocks within their compositions.

Section B

- 2 Describe briefly any EIGHT questions
 - 2.1 Describe the importance of solar energy in an ecosystem.
 - 2.2 Describe Y- shaped energy flow model.
 - 2.3 Explain the layered structure of the atmosphere.
 - 2.4 Explain the importance of biological control of pests.
 - 2.5 Are society and environment related. Why?
 - 2.6 Describe the factor affecting soil genesis.
 - 2.7 Enlist and briefly describe population characteristics.
 - 2.8 How does metrological parameters related to the diffusion and transport of pollutants.
 - 2.9 What is geological time scale?

2.10 Describe three chemistry of ozone depletion.

3. Attempt all the questions.

Differentiate between:

3.1 Light and dark bottle experiment.

3.2 Wetland and aquatic ecosystem.

3.3 Endogenic and exogenic.

3.4 Tornadoes and cyclones.

3.5 Clastic and nonclastic rocks.

3.6 Natality and morality.

3.7 Colorimetric and spectrometric analysis.

3.8 Conductometric and potentiometric titration.

3.9 Lapse rate and adiabatic lapse rate.

3.10 Atmospheric turbulence and mechanical turbulence.

Old Course

Section A

4×10=40

1 Attempt All the questions.

1.1 Define ecological community. Discuss characteristics of ecological community.

OR

What do you mean by speciation? Highlight the mechanisms of allopatric and sympatric speciation.

1.2 What is the significance of microbes in the environment? Discuss plate count and membrane filtration methods for estimating microbial population.

1.3 What is landslide? Highlight the different types of landslide and their impact on environment.

1.4 Define effective stack height. Discuss plume behaviours in different conditions of atmospheric stability.

Section B

8×5=40

2 Attempt any EIGHT questions.

2.1 Discuss the hierarchy of biological organization.

2.2 Explain logistic model of population growth.

2.3 What is species interaction? Describe different types of negative interaction.

2.4 Discuss application of thermodynamics law in the ecosystem.

2.5 What is rock? Describe the process of rock cycle.

2.6 Describe atmospheric scavenging processes.

2.7 What are anthropocentric and ecocentric world views?

2.8 What is productivity? Briefly explain the methods of estimating productivity in terrestrial and aquatic ecosystems.

2.9 What do you mean by ecosystem stability? Discuss feedback control mechanisms in ecosystem with examples.

2.10 Enlist and explain population characteristics.

Section C

10×2=20

3 Differentiate between the following.

3.1 Pyramid of number and pyramid of energy.

3.2 Birth rate and growth rate.

3.3 Heterogeneity and equitability.

3.4 Simple and Y- shaped energy flow model.

3.5 Gram positive and gram negative bacteria.

3.6 Silicate and non-silicate minerals.

3.7 El Nino and ENSO

3.8 Mesolithic and Neolithic society.

3.9 Mechanical turbulence and thermal turbulence.

3.10 Entisol and inceptisol.

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