

UNIVERSITY OF COLOMBO, SRI LANKA
FACULTY OF GRADUATE STUDIES
Postgraduate Diploma in Environment Management 2017-2018
Semester I Examination

PgDEM 5301 – Introduction to Ecology

(Time – 03 Hours)

Answer any FOUR (04) questions only.

(1)
(a) Explain briefly the major factors that affect soil degradation. [Marks 10]

(b) The process of soil degradation in developing countries is accelerated by unplanned human activities". Explain the above statement with suitable examples. [Marks 15]

(2)
(a) "Groundwater is the most important natural resources in the our planet" discuss your answer with suitable diagrams. [Marks 08]

(b) 'The water infiltration capacity depends on the characteristics of soils in unsaturated zones' discuss the above statement with suitable diagrams. [Marks 08]

(c) Briefly explain the groundwater availability in artesian confined aquifer with suitable diagrams. [Marks 09]

(3)
(a) What is meant by ' biotic interactions'? [Marks 05]

(b) Citing examples indicate four common types of biotic interactions associated with nature. [Marks 08]

(c) Briefly explain how competition among organisms change the species richness and abundance of an ecosystem. [Marks 12]

(4)

(a) List four characteristics of a forest ecosystem.

[Marks 04]

(b) Briefly explain four key functions of tree canopies.

[Marks 08]

(c) Explain the ecological importance of the canopy of forest in forest regeneration process. You may use diagrams if necessary to explain your answer.

[Marks 13]

(5) Explain the following

(a) Difference between gross primary production and net primary production.

[Marks 08]

(b) Pyramids of numbers and biomass of a land ecosystem.

[Marks 08]

(c) Difference in productivity (P): biomass (B) ratio in oceans and forests.

[Marks 09]

(6) "Natural History is the general narration of what ones sees and experiences in nature, while Ecology is the scientific narration of Natural History" with suitable example clarify the above statement.

[Marks 25]

(7)

(a) Explain "succession" in nature.

[Marks 10]

(b) Describe the importance of the understanding of "succession" in the effort for reforestation, and landfill for cultivation.

[Marks 15]

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