

The Open University of Sri Lanka
 Department of Zoology
 Masters Degree in Environmental Science
 Academic Year 2015/2016



Level 7

Final Examination

Course title- Understanding the Environment

Course Code - NEP1211 /NEP1205

Date : 2016.11.05

Time: 9.30 am- 12.30 pm

ANSWER ANY FOUR (04) QUESTIONS

- (a) Compare and contrast continental and oceanic crust in terms of density, composition, thickness and variability (20 marks)
- (b) What is the Moho, and how is the depth to the Moho determine (20 marks)
- (c) Alfred Wegener thought that all continents were once connected. Explain three observations that led to this belief. (10 marks)
- (d) Why did scientists reject Wegener's idea of continental drift? (10 marks)
- (e) What drives lithospheric plates? (10 marks)
- (f) How were mid-ocean ridges formed? (10 marks)
- (g) Suggest and describe a possible absolute dating method to calculate the ages of 'human bones' founded in Balangoda area (20 marks)
2. (a) How is a mineral defined? (10 marks)
- (b) What is a rock? Describe the classification of three genetic rock types. (20 marks)
- (c) How is the grain size of an igneous rock related to its cooling rate? (10 marks)
- (d) Distinguish between chemical and physical weathering. Discuss the role of surface processes in the development of laterites? (20 marks)
- (e) Discuss the soil profile and the components of the soils (20 marks)

(f) What is the relationship between soil temperature and biological activities in the soil?

(20 marks)

(3) (a) Define the following terms (in words and using formulas, where applicable; give units; give typical values or appropriate diagrams). Describe where and how they are used.

(i) Porosity

(ii) hydraulic conductivity

(iii) Confined aquifer

(iv) Pumping test

(v) Lineaments

(10 marks each)

(b) Why is freshwater so important to an Estuary? Provide at least three benefits of freshwater tributaries.

(20 marks)

(c) Explain the different groundwater aquifer systems in Sri Lanka

(30 marks)

(4) Give scientific reasoning for the following.

(a) Pressure in the atmosphere increases approximately exponentially with depth, whereas the pressure in the ocean increases approximately linearly with depth.

(b) There is a downward direct electric field in the atmosphere during fair weather.

(c) Auroral displays are largely confined to high latitudes.

(d) Clouds develop only up to tropopause.

(e) A parcel of air cools when it is lifted. But dry parcel cools more rapidly than moist air.

(20 marks each)

(5) (a) Explain Trophic levels seen in ecosystems.

(25 marks)

(b) Describe the different ecological pyramids in ecosystems with their significance.

(75 marks)

P.T.O

(6) Describe the adaptations that can be seen in organisms living in following habitats

- (a) Limnetic photic zone.
- (b) Benthic zone of the ocean.
- (c) Rocky shores.
- (d) Sandy shores.

(25 marks each)