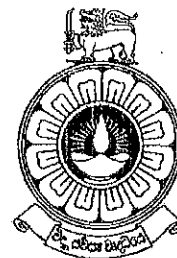


THE OPEN UNIVERSITY OF SRI LANKA
CENTRE FOR ENVIRONMENTAL STUDIES AND
SUSTAINABLE DEVELOPMENT



M.Sc. IN ENVIRONMENTAL SCIENCES- LEVEL 08 - 2016/17

NEP2224–Environmental Geology and Health

Final Examination

DATE: 25th November 2017

DURATION: THREE HOURS
 TIME: 1.30 pm – 4.30 pm

Answer any six (06) questions.

- 1
 - (a) A swampy site next to a river mouth has been identified as having acid sulphate soil. Describe the chemical behaviour of formation of acid sulphate soils in the marshy environments.
 - (b) *“Silica sand deposits lie on marshy lands in Marawila-Nattandiya-Ekala are shown whitish colour whereas beach sands and river sands are shown brownish in colour”*. How would you explain the formation of two types of colour of silica sands?
 - (c) Explain methods of managing acid sulphate soils for optimum crop growth in Sri Lanka.

- 2
 - (a) With examples, explain how solubility of minerals plays a role in element enriched zones in soil and waters.
 - (b) Discuss the possible reasons for CRF in Sri Lanka with respect to the published literature.
 - (c) How do you suggest a long term mechanism to prevent *“Chronic Renal Failure in North-central province in Sri Lanka?”*

3.
 - (a) What are possible sources of fluoride in Groundwater ?
 - (b) Explain how climate plays an important role in fluoride enrichment in water and soils?
 - (c) What is dental fluorosis? What have been the trends in dental fluorosis in Sri Lanka?



4. (a) Explain the chemical behaviour of iodine deficiency disorders (IDD) in human body.
(b) What are goitrogenic factors in human body?
(c) What happens if you don't get enough iodine and if you get too much iodine?
5. (a) What is asbestos?
(b) State the structure and composition of asbestos.
(c) Design a simple experiment to assess the possible environment impact based on asbestos products.
6. (a) What are the factors initiate landslides?
(b) Briefly explain causative factors (Terrain factors) and Triggering events and how they contribute to slope failures (Landslides).
(b) What are the imminent ground features one would observe in a potential Landslide area before a sliding occur?
7. (a) Landslide disaster risk reduction measures may be non-structural and structural; list out the non-structural and structural measures that can be applicable to landslides disaster risk reduction.
(b) What are the least costly, most effective and widely applied two structural measures in landslide disaster risk reduction?
(c). What are the commonly applied rock fall protective measures?
8. (a) Define focus and epicentre of an earthquake.
(b) Explain how you measure the epicenter of the earthquakes.
(c) Explain how you measure the magnitude of the earthquakes.

END

