

THE OPEN UNIVERSITY OF SRI LANKA

CENTRE FOR ENVIRONMENTAL STUDIES AND  
SUSTAINABLE DEVELOPMENT

M.Sc. IN ENVIRONMENTAL SCIENCES- LEVEL 10 - 2017/18

NEP2224 – Environmental Geology and Health  
Final Examination



DATE: 12<sup>nd</sup> December 2018  
TIME: 9.30 am – 12.30 am

DURATION: THREE HOURS

Index NO: .....

**IMPORTANT INSTRUCTIONS TO CANDIDATES**

- Write your INDEX NUMBER in the Answer Script
- This question paper consists of two (02) pages with nine (09) Essay type Questions.  
Answer question **No 01 and 04 other questions.**
- Write answers in separate papers.



1.
  - (a) A swampy site in the southwestern part of Sri Lanka has been identified as having acid sulphate soil. Describe the chemical behaviour of formation of acid sulphate soils such environments.
  - (b) Give particular examples how the development projects accelerate the formation of acid sulphate soils.
  - (c) How would you explain the formation of two types of colour of silica sands and coast sand?
  - (d) Explain methods of managing acid sulphate soils for optimum crop growth in Sri Lanka.
  - (e) *“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 phenomena behind this behavior?
2.
  - (a) With examples, explain how solubility of minerals plays a role in element enriched zones in soil and waters
  - (b) Cite three (03) dangerous mineral found in the earth’s crust and explain how it affect the human health
3.
  - (a) What are goitrogenic factors in human body?
  - (b) Explain the chemical behaviour of iodine deficiency disorders (IDD) in human body.
4.
  - (a) What are possible sources of fluoride in Groundwater ? Explain how climate plays an important role in fluoride enrichment in water and soils?
  - (b) What have been the trends in dental fluorosis in Sri Lanka? Explain any potential risks of kidney disease because of fluoride in water?
5.
  - (a) What is asbestos?
  - (b) How does asbestos affect your health?
6.
  - (a) Discuss the possible reasons for CRF in Sri Lanka with respect to the published literature.
  - (b) How do you suggest a long term mechanism to prevent *“Chronic Renal Failure in North-central province in Sri Lanka?”*

