

2528/201  
2922/201  
EARTH SCIENCES AND ENVIRONMENTAL  
INFORMATION SYSTEMS  
Oct/Nov. 2011  
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
DIPLOMA IN ENVIRONMENTAL SCIENCE  
AND TECHNOLOGY  
MODULE II

EARTH SCIENCES AND ENVIRONMENTAL  
INFORMATION SYSTEMS

3 hours

INSTRUCTIONS TO CANDIDATES

*You should have the following for this examination:*

*Answer booklet;*

*Non-programmable Scientific calculator.*

*This paper consists of TWO sections: A and B.*

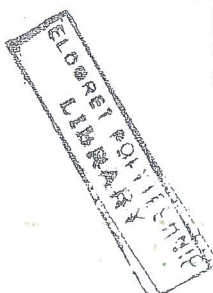
*Answer ALL questions in section A and any THREE questions from section B.*

*Each question in section A carries 4 marks while each question in section B carries 20 marks.*

*Maximum marks for each part of a question are indicated.*

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.



SECTION A (40 marks)

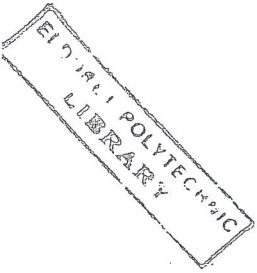
Answer ALL questions in this section.

1. Define the following terms:
  - (a) solar system. (2 marks)
  - (b) geosphere. (2 marks)
2. Identify any four classes of folds. (4 marks)
3. State four factors influencing the process of weathering. (4 marks)
4. Differentiate between a mineral and a rock. (4 marks)
5. Name any four types of communications. (4 marks)
6. Distinguish between active remote sensors and passive remote sensors. (4 marks)
7. State any four uses of radar. (4 marks)
8. Explain what is meant by the term remote sensing. (4 marks)
9. Name any four components of a Geographical Information System (GIS). (4 marks)
10. Identify any four applications of information systems in environmental science. (4 marks)
12. (a) Identify any four basic characteristics of a good information communication system. (4 marks)
  - (b) Explain any three advantages of effective communication in an organization. (6 marks)
  - (c) Using an illustration, explain the basic concepts of transmitting and receiving of a message. (10 marks)
13. (a) Explain any five human activities that cause earthquakes. (10 marks)
  - (b) Explain any five mitigation measures for earthquakes. (10 marks)
  - (a) Define the term underground water. (2 marks)
  - (b) Describe any three sources of underground water. (6 marks)
  - (c) Explain how each of the following factors influence the existence of underground water:
    - (i) precipitation; (3 marks)
    - (ii) slope of the land; (3 marks)
    - (iii) nature of the rocks; (3 marks)
    - (iv) vegetation cover. (3 marks)
15. (a) List any four constituents of soil. (4 marks)
  - (b) Explain any five factors that contribute to soil erosion. (10 marks)
  - (c) Describe any three adverse effects due to volcanic eruptions. (6 marks)

SECTION B (60 marks)

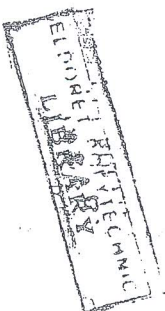
Answer any THREE questions from this section.

11. (a) Explain the term aerial photography as used in remote sensing. (4 marks)
  - (b) Identify any four advantages of satellite photography over ground photography. (8 marks)
  - (c) Describe any four uses of Global Positioning System (GPS) in control of floods. (8 marks)



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