

Name _____

Index No. _____

2528/103

Candidate's Signature _____

2922/103

Date _____

ENVIRONMENTAL BIOLOGY

June/July 2015

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY
MODULE I

ENVIRONMENTAL BIOLOGY

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.
Sign and write the date of the examination in the spaces provided above.
This paper consists of TWO sections; A and B.

Answer ALL the questions in section A and any THREE questions from section B in the spaces provided in this question paper.

Maximum marks for each part of a question are indicated.

Do NOT remove any pages from this question paper.

Candidates should answer the questions in English.

For Examiner's Use Only

SECTION A

Question	1	2	3	4	5	6	7	8	9	10	Total
Candidate's score											

SECTION B

Question	11	12	13	14	15	Total
Candidate's score						
						Grand Total

This paper consists of 16 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 the questions in this section in the spaces provided.

1. Explain the two classes of cells in living organisms. (4 marks)

2. (a) State the main function of the cell nucleus. (1 mark)

- (b) Name the three main structures of the cell nucleus. (3 marks)

3. (a) List three organelles that have ribosomes. (3 marks)

- (b) State the biological function of a ribosome. (1 mark)

4. Describe the importance of mitosis in a living organism. (4 marks)

5. Name the four phases of the first meiotic division. (4 marks)

6. Explain the two reactions which make ribosomes move along messenger ribonucleic acid (mRNA) during protein synthesis. (4 marks)

7. State any four classes of vertebrates. (4 marks)

8. Differentiate between homozygous and heterozygous alleles in an organism. (4 marks)

SECTION B (60 marks)

Answer any THREE questions from this section in the spaces provided after question 15.

- 11. (a) Explain the four importance of Binomial nomenclature in taxonomy. (8 marks)
- (b) Explain six human activities that cause habitat degradation. (12 marks)
- 12. (a) Describe the negative feedback when someone is exposed to carbon dioxide in the environment. (8 marks)
- (b) Describe six environmental conditions which affect marine animals. (12 marks)
- 13. (a) Describe the occurrence of a recessive allele in the offspring and not in the phenotype of the individual. (6 marks)
- (b) Describe how sex is determined after conceptions in human beings. (14 marks)
- 14. (a) Define the term environmental pollution. (2 marks)
- (b) Explain two sources of air pollution in a mining site. (4 marks)
- (c) Explain seven air pollutant which affect human health. (14 marks)
- 15. (a) Name the five kingdom system in the order of increasing complexity. (5 marks)
- (b) With the aid of a diagram, describe the structure of transfer ribonucleic acid (tRNA). (9 marks)
- (c) Explain the criteria for differentiating taxa of organisms. (6 marks)

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- 9. (a) Define the term population as used in ecology. (2 marks)

- (b) State any two biotic factors in terrestrial environment. (2 marks)

- 10. Explain the fixation of nitrogen by living organisms. (4 marks)

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