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(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER
MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF EDUCATION
(SCIENCE)**

COURSE CODE: ESM 312

COURSE TITLE: BIOLOGY EDUCATION

DATE: 13/7/2021

TIME: 9.00am - 11am

INSTRUCTIONS TO CANDIDATES

Answer Question One and any other TWO Questions

TIME: 2 Hours

This Paper Consists of 3 Printed Pages. Please Turn Over. ►

QUESTION 1 (30 MARKS)

- a) Describe **three** ways in which biological knowledge is used to address health matters (3 Marks)
- b) List **three** key professional documents that biology teachers require to plan their teaching (3 Marks)
- c) State **four** reasons why Biology teachers are encouraged to apply questioning method in their teaching (4 Marks)
- d) Why is it advisable for teachers of Biology to use visual aids in the teaching of scientific concepts) (4 Marks)
- e) Explain **two** limitation of specimens in the teaching of Biology (4 Marks)
- f) State **three** environmental considerations when planning for the siting of a Biology laboratory (6 Marks)
- g) Why is it advisable to store heavy items on shelves close to the ground in the Biology laboratory? (2 Marks)
- h) Outline **four** purposes of Biology assessment at class and in the national examinations (4 Marks)

QUESTION 2 (20 MARKS)

- a) Using relevant examples discuss any **five** ways in which scientific information is misused. (10 Marks)
- b) Explain **five** ways in which biology related to other disciplines? (10 Marks)

QUESTION 3 (20 MARKS)

- a) Describe **five** objectives of teaching Biology at secondary schools in Kenya (10 Marks)
- b) Explain how the teaching of Biology at secondary school contributes to the promotion of social, economic, technological and industrial needs for national development (6Marks)
- c) Education in Kenya should promote national unity. Describe how you will teach Biology at secondary school to contribute to this goal (4 Marks)

QUESTION 4 (20 MARKS)

- a) Outline **six** factors that should be considered when planning the layout of a Biology laboratory at secondary school (6 Marks)
- b) State **four** content areas in the secondary school Biology curriculum where teacher demonstration is applicable (4 Marks)
- c) Describe how you would organize/prepare Biology students to conduct a class practical to illustrate the concept of diffusion (10 Marks)

QUESTION 5 (20 MARKS)

The use of a wide variety of resources should motivate secondary school students to like and enjoy biology. Despite this, the failure rate in the subject is still quite high in the KCSE examination. Discuss (20 Marks).