



## **GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2017/2018 ACADEMIC YEAR TWO  
SECOND SEMESTER EXAMINATION**

**SCHOOL OF EDUCATION AND BIOLOGICAL SCIENCES**

**FOR THE DEGREE OF BACHELOR OF EDUCATION**

**COURSE CODE: EDB 211**

**COURSE TITLE: SPECIAL METHODS BIOLOGY 1**

**EXAMINATION DURATION: 3 HOURS**

**DATE: 17/04/18**

**TIME: 09.00-12.00 PM**

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### **INSTRUCTION TO CANDIDATES**

- The examination has SIX (6) questions
- Question ONE (1) is COMPULSORY
- Choose any other THREE (3) questions from the remaining FIVE (5) questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

**This paper consists of THREE (3) printed pages**

*please turn over*



**QUESTION ONE (COMPULSORY)**

Form one students were asked to carry out experiments using fresh potato and boiled potato.

The teacher asked students to cut the potato into smaller pieces and use the following reagents; Iodine solution, Benedicts solution, hydrogen peroxide solution. The students were provided with beakers, scalpel, Bunsen burners, boiling tubes and measuring cylinders.

(a) The students added equal amount of hydrogen peroxide into a boiling tube containing raw potato and another containing boiled potato.

- i. Write down the observations the students made in each case **[4 marks]**
- ii. Explain your observations in (i) above **[6 marks]**

(b) Basing on the reagents provided, the students carried out the food tests using the fresh potato. Fill in the table to show the results the teacher expects from the students. **[8 marks]**

| Food substance | Procedure | Observations | Conclusion |
|----------------|-----------|--------------|------------|
|                |           |              |            |
|                |           |              |            |

(c) The teacher asked students to crush the fresh potato to make solution and put into a visking tube that was placed in a beaker containing iodine solution and leave for 10minutes.

- i. Write down the observations the students made in the experiment **[2 marks]**
- ii. Explain the observations in (i) above **[5 marks]**



## QUESTION TWO

Form three students were asked by their biology teacher to explain the importance of the following processes to the life of plants:

- i. Fertilization [5 marks]
- ii. Pollination [5 marks]
- iii. Homeostasis [5 marks]

Write down the responses the teacher expects from the students.

## QUESTION THREE

The teacher took form 4 students for a field work and made the following observations:

- i. A seedling that was left horizontally but its roots have bent downwards while leaf twigs bent upwards [5 marks]
- ii. Some animals that were resembling the environment while plants that grow on rocky places had thorns and milky juice from the swollen leaf [10 marks]

Explain the above observations to the students

## QUESTION FOUR

Form 2 students had difficulty in distinguishing respiration and breathing. Explain the two concepts basing on:

- i. Plants [5 marks]
- ii. Animals [10 marks]

## QUESTION FIVE

- (a) Distinguish between diffusion and active transport [4 marks]
- (b) Explain what happens when the following cells are placed in distilled water:
  - i. Plant cell [4 marks]
  - ii. Animal cell [4 marks]
- (c) Explain the significance of laboratory rules and safety precautions [3 marks]

