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**GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2018/2019 ACADEMIC YEAR ONE**

**SECOND SEMESTER EXAMINATION**

**SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES**

**FOR THE DEGREE OF BACHELOR OF EDUCATION**

**COURSE CODE: BOT 100E**

**COURSE TITLE: CELL BIOLOGY**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 06/02/2020 TIME: 2.00-4.00 PM**

**INSTRUCTION TO CANDIDATES**

* **The examination has FIVE (5) questions**
* **Question ONE (1) is COMPULSORY**
* **Choose any other TWO (2) questions from the remaining FOUR (4) 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 TWO (2) printed pages *please turn over***

**QUESTION ONE (COMPULSORY)**

1. Explain the functions of the following light microscope parts. **[5 marks]**
2. Fine adjustment knob
3. Eye piece
4. Objective lenses
5. Diaphragm
6. State the sources of illumination in the light microscope. **[3 marks]**
7. Briefly describe the structure, distribution and functions of the following organelles **[10 marks]**
8. Mitochondrion
9. Ribosome’s
10. Lysosomes
11. Endoplasmic reticulum
12. Nucleus
13. a) Describe the cell cycle in plants. **[2 marks]**
b) Differentiate between plants cells and animals cells. **[3 marks]**
14. a. Name in sequence, the stages in mitotic cell division. **[5 marks]**

b. Explain the importance of mitosis in plant **[2 marks]**

**QUESTION TWO**

1. Discuss the difference between prokaryotes and eukaryotes. **[10 marks]**
2. Describe the general structure of cell membranes and list organelles made of membranes found in plant and animal cells **[10 marks]**

**QUESTION THREE**

1. Explain the steps taken when preparing a temporary slide for viewing under a microscope. **[10 marks]**
2. Discuss some of the points to consider while caring for and using the microscope in the laboratory. **[10 marks]**

**QUESTION FOUR**

1. Define Meiosis and list its stages, **[6 marks]**
2. Compare and contrast mitotic and meiotic cell plant cell division. **[14 marks]**

**QUESTION FIVE**

1. Describe the entry substances in and out of plant cells. **[10 marks]**
2. Outline the factors affecting the rate of diffusion in plant cells. **[10 marks]**