JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

UNIVERSITY SPECIAL EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

4th YEAR 2nd SEMESTER 2019/2020 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE:	**SBI 3444**
COURSE TITLE:	**Environmental Microbiology**
EXAM VENUE:	**STREAM: (BSC)**
DATE:	**EXAM SESSION:**

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in Section A and Any two questions in Section B**
2. **Candidates are advised not to write on question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

SECTION A: (30 MARKS) ANSWER ALL QUESTIONS

1. State the importance of studying environmental microbiology (3 marks)
2. Explain the role of soil filters in purification of industrial wastewater (3 marks)
3. Define the term biogenic pollutants and state the dangers connected to them (3 marks)
4. State three criticisms of the method of determining Biological Oxygen Demand (3 marks)
5. List six characteristics of an ideal indicator microorganism (3 marks)
6. Explain three factors that guide municipal councils in selection of procedures for integrated solid waste management (3 marks)
7. Explain sorption and extraction methods of chemical wastewater treatment (3 marks)
8. What does the detection of sulphite reducing bacteria portend during drinking water analysis? (3 marks)
9. Explain characteristic features of cold seeps and state its unique microbial community (3 marks)
10. List and explain three compost processing conditions to enhance decomposition (3 marks)

SECTION B: (40 MARKS) ANSWER ANY TWO QUESTIONS

11. Discuss the role of microorganisms in bioremediation of environmental pollutants (20 marks)
12. Discuss artificial methods of biological sewage treatment (20 marks)
13. Describe integrated solid waste management strategies (20 marks)
14. Discuss five types of indicator bacteria used to assess water quality (20 marks)