JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

4TH YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR

MAIN SCHOOL BASED

COURSE CODE: SZL 401

COURSE TITLE: HISTORY AND PHILOSOPHY OF BIOLOGY 1

EXAM VENUE: CR 1 **STREAM: (SBPS)**

DATE: 28/04/14 **EXAM SESSION: 2.00 – 4.00 PM**

TIME: 2.00 HOURS

Instructions:

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

SECTION A (30 marks)

1. Define the following terms: (3 marks)
    i. Syllogism
    ii. Ontogeny
    iii. Analogy
    iv. Evolution
    v. Modern Synthesis
    vi. Spontaneous generation
2. Outline three main claims made by each of the two major models of origin of life. . . (3 marks)
3. State at least three characteristics of a good hypothesis. (3 marks)
4. Give three examples of how science deals with only the natural things. (3 marks)
5. Explain the step of Interpretation after data collection in the Scientific method. (3 marks)
6. Name and describe how three Greek personalities were associated with advancement of science in the 5^{th} century BC. (3 marks)
7. Describe the criteria for defining a species according to Huxley (3 marks)
8. Summarize the four steps of abiogenesis and the dilemma associated with it. (3 marks)
9. Illustrate diagrammatically the past and present life forms from your model concept of origin of life. (3 marks)
10. Relate the processes involved in your model concept of origin of life (Q9.) to a time scale, and provide important references where necessary. (3 marks)

SECTION B (40 Marks)

11. Compare the two major concepts of the age of the earth and the dating methods they employ. (20 marks)
12. Provide the general evidences argued by evolutionists for origin of life and a critique of each of them. (20 marks)
13. Describe the species problem as defined by various authorities. (20 marks)
14. Discuss how Gregor Mendel's discoveries contributed to modern synthesis. (20 marks)