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**UNIVERSITY EXAMINATIONS**  
**POST GRADUATE DIPLOMA IN EDUCATION**  
**2022/2023 ACADEMIC YEAR**  
**MAIN EXAMINATION**  
**FIRST YEAR SECOND SEMESTER TWO**  
**COURSE CODE: ESM 725E**  
**COURSE TITLE: BIOLOGICAL SCIENCES EDUCATION**

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**DATE: 21<sup>ST</sup> AUGUST 2023** **TIME: 2:00-4:00PM**

**INSTRUCTIONS TO CANDIDATES**

Answer **THREE** questions: Question **ONE** and any other **TWO**

TIME: 2 Hours

*This paper consists of 3 printed pages. Please turn over.*

### QUESTION ONE (30 MARKS)

- a) List **four** applications of biological knowledge in the field of agriculture. (4mks)
- b) State **three** ways by which biology students can study and appreciate biological principles.(3mks)
- c) State **four** roles of the teacher during heuristic strategy. (4mks)
- d) List **four** characteristics of a good instructional objective. (4mks)
- e) Outline **four** purposes of classroom tests? (4mks)
- f) List **four** factors a biology teacher should consider during storage of equipment and materials in the laboratory. (4mks)
- g) Describe **four methods** a biology teacher can use to collect real specimens for teaching biology.. (4mks)
- h) State **three** factors to consider when making a scheme of work. (3mks)

### QUESTION TWO (20 MARKS)

- a) Outline **ten** responsibilities of a laboratory technician. (10mks)
- b) Describe **five** factors considered in designing a laboratory layout. (10mks)

### QUESTION THREE (20 MARKS)

- a) Differentiate between assessment and evaluation. (2mks)
- b) List **eight** factors the biology teacher should consider before constructing the table of specification. (8mks)
- c) Discuss **five** advantages of essay tests. (10 marks)

### QUESTION FOUR (20 MARKS)

- a) Distinguish between the scheme of work, lesson plan and the syllabus. (3mks)
- b) Discuss **five** disadvantages of teaching biology without a lesson plan. (10mks)
- c) State **seven** advantages of preparing a scheme of work. (7mks)

### QUESTION FIVE (20 MARKS)

- a) State **seven** factors affecting choice of methods for teaching biology. (7mks)
- b) Outline **seven** situations the teacher uses demonstration as a method of teaching biology. (7mks)
- c) List **six** reasons why teachers ask questions during teaching? (6mks)