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**UNIVERSITY EXAMINATIONS**  
**2022/2023 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS**  
**YEAR ONE SEMESTER ONE EXAMINATION**

**FOR THE DEGREE OF**  
**DOCTOR OF PHILOSOPHY**  
**(INFORMATION TECHNOLOGY)**

**COURSE CODE : PIT 912**

**COURSE TITLE : ADVANCED RESEARCH  
METHODS IN COMPUTING**

**DATE: 17/08/2023**

**TIME: 8.00 A.M – 11.00 A.M**

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**INSTRUCTIONS TO CANDIDATES**  
**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### QUESTION ONE (COMPULSORY) [30 MARKS]

- a. Distinguish between ontology and epistemology as used in research philosophy and justify why they are important in research. [4 marks]
- b. With examples distinguish between descriptive and inferential statistical data analysis techniques. [6 marks]
- c. Explain a strategy you can use to write a research proposal abstract. [3 marks]
- d. Differentiate between mediating and moderating variables as used in research. [4 marks]
- e. Describe two mechanisms you can use to enhance the quality of research. [4 marks]
- f. In terms of ontology, epistemology, axiology, and typical methodology, compare and contrast positivism and interpretivism. [9 marks]

### QUESTION TWO [15 MARKS]

Semi-Structured Interviews and Focus Group discussion techniques of data collection. Briefly explain the conditions under which it is appropriate to use each of them. [15 marks]

### QUESTION THREE [15 MARKS]

- a. Briefly explain any four key elements of a proper epistemology. [8 marks]
- b. State and explain the Essential Elements of an Experimental Research Design. [7 marks]

### QUESTION FOUR [15 MARKS]

- a. Describe how a theoretical framework should be formulated in a study. [6 marks]
- b. Explain what conceptual framework is and its importance in research. [5 marks]
- c. Based on the above explanation, describe how the conceptual framework can be formulated in a study. [4 marks]

### QUESTION FIVE [15 MARKS]

- a. Explain the technique you can use to bring out the gap in your study. [3 marks]
- b. There are four distinct stages for you to exhibit in your text before your readers will recognize and accept your theory-based arguments in the literature review. Discuss the Four Analysis Tasks of the Literature Review. [12 marks]

### QUESTION SIX [15 MARKS]

Briefly explain the elements that you will consider in the following research proposal section.

- a. Introduction [5 marks]
- b. Statement of the problem [5 marks]
- c. Significance of the study [5 marks]