

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY  
IN**

**EDCI 941: PSYCHOLOGICAL BASIS OF LEARNING SCIENCE**

**STREAMS: PhD (SB)**

**TIME: 3 HOURS**

**DAY/DATE: THURSDAY 19/12/2019**

**8.30 A.M. – 11.30 A.M.**

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**INSTRUCTIONS:**

- **Answer question ONE and any other TWO questions.**

1. (a) Integrated science process skills are most commonly used at higher levels of learning such as colleges and universities. Describe how you would facilitate acquisition of any five of these skills to a group of learners in your class. (15 marks)  
(b) To develop problems solving and conceptualization of Scientific Concepts, there is need for proper scientific explanations. Discuss five instructional strategies that teachers can use to support students in developing scientific explanations. (15 marks)
  2. Progress in science and science learning involves changes in science paradigms. Discuss the characteristics of science paradigm and the implications of each of these characteristics to the teaching and learning of science. (15 marks)
  3. Current trends in science and mathematics education show a shift in pedagogical approach towards constructivist pedagogy. Critically analyze the change and its implications on various aspects of teaching and learning. (15 marks)
  4. “Concepts development and conceptual change forms the key focus of cognitive psychologists as well as constructivists.” Based on this argument, describe the application of concept development process in science teaching and learning. (15 marks)
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