

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

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

**EDCI 971: PHYSICS EDUCATION**

**STREAMS: PhD (SB)**

**TIME: 3 HOURS**

**DAY/DATE: WEDNESDAY 18/12/2019**

**2.30 P.M. – 5.30 P.M.**

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**INSTRUCTIONS:**

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

1. (a) Various philosophies form the foundations for physics education. Discuss three philosophies and their implications on the teaching and learning of physics. (15 marks)  
(b) The organization of inquiry in the physics classroom determines achievement of problem solving abilities. Describe various levels of inquiry organization and the ability of each level to develop problem solving abilities in learners. (15 marks)
  2. Describe the development and organization of the content in the physics syllabi for secondary school teaching. (15 marks)
  3. Discuss the key areas of research in physics education that can be implemented to improve teaching and learning of physics in schools. (15 marks)
  4. ICT (Information Communication Technology) is a useful tool in physics education research
    - (a) Discuss areas of research in physics education where ICT has proven useful. (15 marks)
    - (b) Explain how ICT is used in the specific areas of physics education above. (5 marks)
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