



## GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **TWO**  
**SECOND** SEMESTER EXAMINATION

SCHOOL OF EDUCATION, ARTS AND SOCIAL SCIENCES

FOR THE DEGREE OF BACHELOR OF EDUCATION (ARTS)

COURSE CODE: ESD 211

COURSE TITLE: SPECIAL METHODS IN CHEMISTRY

EXAMINATION DURATION: 3 HOURS

**DATE: 12/04/18**

**TIME: 09.00-12.00 PM**

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### INSTRUCTION TO CANDIDATES

- The examination has **SIX (6)** questions
- Question **ONE (1)** is **COMPULSORY**
- Choose any other **THREE (3)** questions from the remaining **FIVE (5)** questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

This paper consists of **THREE (3)** printed pages

*please turn over*



### QUESTION ONE (COMPULSORY)

- (a) (i) State any three goals of science education **[3 marks]**
- (ii) Give any two ways in which the curriculum may hinder the achievement of these goals **[2 marks]**
- (b) (i) outline any two principles that should guide the chemistry teacher in constructing a scheme of work **[2 marks]**
- (ii) Explain why the teacher should be cautious in using a generic scheme of work in planning to teach chemistry **[4 marks]**
- (c) Explain why the position of the hypothesis marks the difference between Francis Bacon's view and Karl Popper's view of science **[4 marks]**
- (d) Explain why the use of word equations is recommended when teaching chemistry in the lower secondary school classes **[5 marks]**
- (e) Why is it vital, for, the chemistry teacher to subject every experiment conducted in the laboratory, to the twin process of rehearsal and risk assessment? **[5 marks]**

### QUESTION TWO

- (a) Briefly explain the purpose of science **[2 marks]**
- (b) How do scientists go about their work **[2 marks]**
- (c) What is a world view **[1 mark]**
- (d) With reference to a specific world view, describe the role of philosophy in shaping that world view **[5 marks]**
- (e) Philosophers of science consider problems that apply to particular sciences, discuss. **[5 marks]**

### QUESTION THREE

- (a) Explain four ways by which learners can be made to appreciate the contributions of chemistry knowledge to the welfare of mankind **[4 marks]**
- (b) Explain the objectives for teaching and learning of chemistry **[8 marks]**
- (c) What role does inquiry play in chemistry instruction **[3 marks]**



#### QUESTION FOUR

- (a) Examine any three measures related to the design of a chemistry laboratory [6 marks]
- (b) Explain why assessment is important in teaching and learning of chemistry [4 marks]
- (c) Describe a number of criteria which can guide a chemistry teacher in wise selection of textbooks [5 marks]

#### QUESTION FIVE

- (a) Describe the qualities of a modern school laboratory [5 marks]
- (b) Briefly explain the role of improvising/fabricating teaching aids in chemistry [4 marks]
- (c) How would you ensure that the conduct of any school level practical is hands on [6 marks]

#### QUESTION SIX

- (a) Identify any five challenges of integrating ICT in the teaching of chemistry in Kenyan public Secondary Schools. [5 marks]
- (b) Why do you think it is necessary to ask students to reflect upon their activities when engaging in science, or studying science? [2 marks]
- (c) Briefly describe the nature of science [2 marks]
- (d) Discuss any three main ideas regarding the nature of science [6 marks]

