



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SPECIAL EXAMINATIONS**  
**THIRD YEAR EXAMINATION FOR THE AWARD OF THE**  
**DEGREE OF BACHELOR OF EDUCATION (ARTS)**  
**SECOND SEMESTER, 2021/2022**  
**(FEBRUARY - JUNE, 2022)**

**EDCI 331: CHEMISTRY SUBJECT METHODS**

**STREAM: Y3 S2**

**TIME: 2 HOURS**

**DAY: THURSDAY, 3:00 – 5:00 P.M.**

**DATE: 28/07/2022**

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**INSTRUCTIONS**

- 1. Do not write anything on this question paper.***
- 2. Answer question ONE (Compulsory) and any other TWO questions.***

**QUESTION ONE**

a) Justify the inclusion of Chemistry in the Secondary School Science Curriculum.

(10 marks)

b) (i) Define the term instructional Objectives as used in Chemistry. (2 marks)

(ii) State and explain the conditions a chemistry instructional objective must fulfill.

(5 marks)

c) Outline the main features of a Chemistry laboratory.

(5 marks)

d) State the objectives of a practical in Chemistry teaching in secondary schools.

(4 marks)

e) List the 21<sup>st</sup> Century skills you may inculcate in learners as result of chemistry teaching.

(4 marks)

## QUESTION TWO

The education sector in the country is shifting towards Competency Based Curriculum (CBC) that requires learners to engage in IBL to develop the requisite competences.

- a) What does IBL entail? (3 marks)
- b) State and explain the levels of IBL. (8 marks)
- c) What role does a chemistry teacher play during IBL teaching and learning process? (3 marks)
- d) Outline the benefits of IBL to the learner during chemistry teaching and learning. (6 marks)

## QUESTION THREE

The best method of giving instructions in a class experiment is through a worksheet.

- a) What are the components of a worksheet? (5 marks)
- b) Outline the advantages of using a worksheet in teaching and learning of chemistry. (10 marks)
- c) Design a worksheet that you may use when teaching about the physical properties of solids. (5 marks)

## QUESTION FOUR

The 5E instructional model is based on the constructivist approach to learning which states that learners build or construct new ideas on top of old ideas. The 5E model is suitable in inquiry learning environment as the teacher presents learning experiences with problematic, challenging but achievable situations that are slightly beyond the current level of understanding of learners.

- a) State the components of the 5E instructional model. (5 marks)
- b) Discuss the components of the 5E instructional model outlining its purpose, teacher and learner activities for each component. (15 marks)

## QUESTION FIVE

The actual chemistry lesson has three main basic steps. Discuss each of the steps by outlining their usefulness during the lesson. (20 marks)