MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF EDUCATION

DEPARTMENT OF EARLY CHILDHOOD EDUCATION & EDUCATIONAL

DEPARTMENT OF EDUCATIONAL COMMUNICATION AND

TECHNOLOGY (COMTECH)

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA INEDUCATION (ARTS)

ECT 305: TEACHING METHODS-CHEMISTRY

DATE: 7/12/2021 **TIME: 2:00 – 4:00 PM**

INSTRUCTIONS: ***Answer Question ONE and any TWO Others.***

1. a) Explain **how you would introduce two careers related to Chemistry** to a Form One Class so as to stimulate their interest in chemistry. (INCLUDE strategies and resources). (6 marks)

   b) **Explain the importance of six components of a scheme of work** in the planning process of teaching Chemistry: You may make reference to a named topic. (12 marks)

   c) Discuss any **three Values** of Science promoted through Chemistry. (6 marks)

   d) Distinguish between Experimentation, Imagery and Speculation as processes of generating scientific knowledge. (6 marks)

2. a) Explain **four key competences developed in the practical on test for Cations in chemistry.** (8 marks)

   b) Prepare an 80-minute Lesson Plan for a practical lesson on **Test for Cations using NaOH (aq) and NH_4OH (aq).** Include: **Al^{+3}, Mg^{+2}, Fe^{+3}, Cu^{+2}, Zn^{+2}, Pb^{+2}, Ca^{+2}.** (12 marks)

3. Discuss how Chemistry contributes **to any two** of the following: (20 marks)

   (i) **The Medical profession.**
   (ii) **Technology and Industrial Development.**
   (iii) **Informed Citizenship.**

4. Choose **one** of the following methods of teaching of Chemistry, and discuss the following aspects: ***Its definition, steps involved in its implementation, merits and demerits.*** (20 marks)

(i) The Project Method.
(ii) The Meta-Cognitive approach.
(iii) The Fieldtrip/Excursion Method.
(iv) The Group Discussion Method.
(v) The Demonstration Method.
(vi) The Experimental Method.

5. Write briefly about **the skills tested in EACH of the following areas** of Chemistry

Practical:

(i) **Qualitative analysis.** (6 marks).
(ii) **Rate of reaction.** (4 marks).
(iii) Volumetric analysis. (6 marks)
(iv) Enthalpy change. (4 marks)