NATIONAL UNIVERSITY OF LESOTHO

B.SC.ED. EXAMINATION

SCE 3241 – 8: SECONDARY LABORATORY WORK IN CHEMISTRY

JANUARY 2024 MARKS: 100 TIME: 3HRS

INSTRUCTION:

Answer all FOUR Questions

QUESTION 1

(a) Mention any three skills that students acquire through practical work in chemistry.

[3]

(b) Using **one** named concept/topic, clearly discuss how you would facilitate the lesson for student to develop the skills you mentioned in (a) indicating the roles of both the teacher and the students in the process.

[12]

(c) State and explain any three ways in which you would assess students on a practical activity.

[6]

(d) The current Lesotho General Certificate of Secondary Education (LGCSE) curriculum has only a written paper (Paper 3) as an alternative to practical assessment. Explain how this may limit adequate assessment of skills for practicals.

[4]

[Total= 25]

QUESTION 2

(a) Explain how a chemistry teacher with background knowledge in sociocultural theory could design and facilitate effective practical sessions.

[10]

(b) State and explain any **three** characteristics of a chemistry practical, which follows behaviorism principles.

[6]

(c) The following is an extract from the LGCSE syllabus- grade 9. Use the extract to answer questions (i) and (ii).

12. investigate properties of	Concepts	Teacher and leaners
transition elements.	Chemical properties	discuss chemical
	Oxidation state	properties (variable
	Physical properties	oxidation states) of
	- density	transition elements.
	- conductivity	Teacher and learners
	- fixed points	discuss physical
	- hardness	properties of transition
	- colour of compounds	elements.
	Uses of transition elements	Learners explore colours
	e.g catalysis	of different compounds
	Skills	of the same transition

- (i) Write two lesson objectives. [2]
- (ii) Write one question aimed at assessing:
 - conceptual knowledge,
 - procedural knowledge and
 - practical application. [3]
- (iii) Explain the importance of incorporating the above knowledge areas (in (ii) above) in the assessment of practical work. [4]

[Total= 25]

QUESTION 3

(a) The bottle containing sulphuric (H_2SO_4) acid shown below was found in a chemistry laboratory. State and explain any two hazards the bottle poses for people working in the laboratory.

[4]



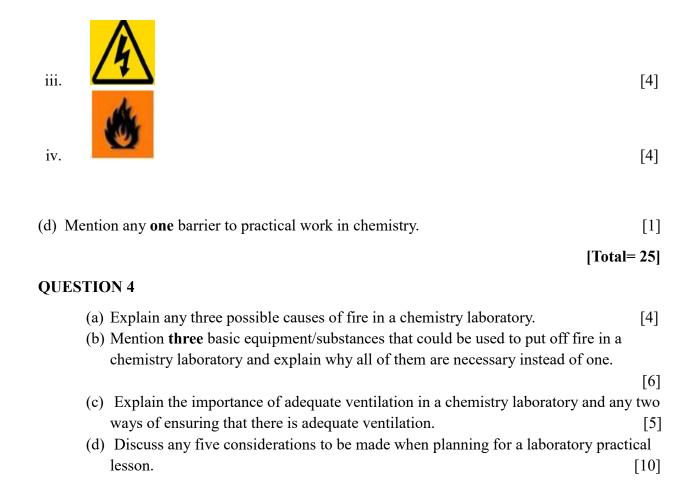
- (b) State two safety measures that you would take to ensure that the hazards you cited in (a) do not occur. [4]
- (c) Explain how the chemicals or instruments bearing the symbols below should be **handled** and **stored**.



[4]

i.

[4]



[Total = 25]