TEVETA

Technical Education Vocational and Entrepreneurship Training Authority

DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY

LEVEL 6 YEAR I EXAMINATION

FINAL INTEGRATED SUMMATIVE EXAMINATION

SITTING: APRIL / MAY 2026

SUBJECT: OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT

TIME: THREE (3) HOURS **TOTAL MARKS: 100**

PASS MARK: 50

INSTRUCTIONS TO CANDIDATE

1. Write your Examination number and National Registration Card (NRC) number on the answer booklet provided. Ensure you append your signature in the space provided on the answer booklet.
2. Write the ANSWER SCRIPT SERIAL NUMBER on the examination register and on the entry slip.
3. This paper has SEVEN (7) questions. Question ONE (1) is COMPULSORY answer FOUR (4) questions from the remaining SIX (6) questions.
4. Diagrams may be used where necessary to clarify your answer.
5. Cellphones and programmable calculators are not allowed in the examination room.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

QUESTION ONE (COMPULSORY)

(a) Explain Personal Protective Equipment (PPE) and its role in ensuring personal safety in a laboratory environment. (5 marks)

(b) Describe the scenarios necessary to use three **(3)** types of PPE. (6 marks)

(c) Describe a step-by-step guide to correctly apply and remove PPE in a laboratory setting. (5 marks)

(d) Explain the importance for all laboratory personnel to consistently apply safety protocols and wear PPE. (4 marks)

Total [20 marks]

QUESTION TWO

(a) Hookworm infection is caused by parasites which are common in Ethiopia. The parasites live in the human intestine and lay eggs which are expelled from the body with the faeces into the soil. The eggs grow into worms in the soil, which penetrate the skin of people walking barefooted. Identify the following in the scenario:

i. Infectious agent. (2 marks)

ii. Reservoir. . (2 marks)

iii. Mode of transmission. (2 marks)

iv. Route of exit and the route of entry. (2 marks)

(b) Differentiate direct and indirect transmission. Give one example of each. (6 marks)

(c) Explain three common modes of transmission of communicable diseases. (6 marks)

Total [20 marks]

QUESTION THREE

(a) Explain the way the following help in preventing accidents in the laboratory.

i. Barricades. (2 marks)

ii. Proper storage of hazardous chemicals. (2 marks)

iii. Risk assessment. (2 marks)

iv. Risk communication. (2 marks)

v. Working as a team. (2 marks)

(b) Describe five (5) common causes of accidents in the laboratory. (10 marks)

Total [20 marks]

QUESTION FOUR

(a) Define:

i. Accident. (2 marks)

ii. Risk assessment. (2 marks)

iii. Hazard. (2 marks)

(b) State three **(3)** types of accidents and three **(3)** types of incidents that commonly occur in a laboratory setting. (6 marks)

(c) Describe the importance of risk assessment in the laboratory. (2marks)

(d) Explain the impact of accidents on laboratory personnel. (6 marks)

Total [20 Marks]

QUESTION FIVE

(a) Define pollution. (2 Marks)

(b) Explain the effects of pollution on human health and the environment. (6 marks)

(c) Explain the effects of three **(3)** types of pollution on the ecosystem. (6 marks)

(d) Describe the way pollutants such as smoke and carbon dioxide contribute to environmental degradation. (6 marks)

Total [20 Marks]

QUESTION SIX

(a) Explain the purpose of First Aid. (2 marks)

(b) Explain the use of five **(5)** items found in a standard first aid kit. (10 marks)

(c) A colleague accidentally inhales toxic fumes while working with chemicals. Outline the first four (4) first aid steps that should be taken to assist him. (8 marks)

Total [20 Marks]

QUESTION SEVEN

(a) Define biological water treatment. (2 marks)

(b) Explain its significance in wastewater management. (6 marks)

(c) Describe the fundamental principles of biological water treatment, including the:

i. Role of microorganisms in breaking down organic matter. (2 marks)

ii. Difference between aerobic and anaerobic biological treatment. (2 marks)

(d) With the aid of examples, explain the following biological treatment methods:

i. Aerobic Treatment. (4 marks)

ii. Anaerobic Treatment (4 marks)

Total [20 marks]