



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

**SCIENCE TECHNOLOGY AND FOOD SCIENCE TECHNOLOGY/ LABORATORY
TECHNOLOGY**

SUBJECT: Laboratory Safety and Practice

**PAPER NO: 360/13/S07
360/18/S07**

DURATION: 3 Hours

MARCH/APRIL 2021 EXAMINATION

REQUIREMENTS

Pen, pencil, ruler

INSTRUCTIONS TO CANDIDATE

Answer ANY FOUR (4) questions.

This paper consists of 3 printed pages.

QUESTION 1

- a) Explain the importance of a laboratory code of conduct. (2 marks)
- b) State any eight (8) rules/code of conduct for behaviour in the laboratory. (8 marks)
- c) Explain the use of the following:
 - i) The burette (2 marks)
 - ii) Transfer pipette (2 marks)
 - iii) Graduated flask (2 marks)
 - iv) Fume cupboards (2 marks)
 - v) Protective clothing (2 marks)
- d) Describe the importance of safety in biological laboratories. (5 marks)

QUESTION 2

- a) Discuss safety with electricity in the laboratory. (17 marks)
- b) Discuss the cost of injuries at workplaces. (8 marks)

QUESTION 3

- a) Describe the use and care of an analytical balance. (15 marks)
- b) Describe the methods used and precautions taken when pouring liquids in the laboratory. (10 marks)

QUESTION 4

- a) Describe four (4) classes of accidental industrial fires and how each can be extinguished. (12 marks)
- b) Outline the precautions to be taken when working with toxic chemicals. (13 marks)

QUESTION 5

- a) Describe the method used to dispose of the following dangerous substances in the college laboratories:
- i) Bacterial cultures (3 marks)
 - ii) Small quantities of waste chemicals (10 marks)
 - iii) Radio-active materials (2 marks)
- b) Discuss the proper handling of mercury. (10 marks)

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