

2913/103
LABORATORY AND WORKSHOP
PRACTICE
Oct./Nov. 2021
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN FOOD SCIENCE AND PROCESSING TECHNOLOGY

MODULE I

LABORATORY AND WORKSHOP PRACTICE

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Non-programmable scientific calculator.

This paper consists of TWO sections; A and B.

Answer ALL the questions in section A and any TWO questions from section B in the answer booklet provided.

Each question in section A carries 15 marks while each question in section B carries 20 marks.

Maximum marks for each part of a question are as shown.

Candidates should answer the questions in English.

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A (60 marks)

Answer ALL the questions in this section.

1. (a) Define sink trap as used in food science laboratory practice. (2 marks)
- (b) State **four** functions of sink traps in the laboratory. (4 marks)
- (c) Discuss the personal safety precautions observed when in the laboratory. (9 marks)

2. (a) State **three** advantages of metals as material used for making laboratory benches. (3 marks)
- (b) Differentiate between permanent and unit assembly benches in a science laboratory. (4 marks)
- (c) Explain **four** requirements for a standard preparation room. (8 marks)

3. (a) State **four** advantages of glass material used to make laboratory apparatus. (5 marks)
- (b) Explain the applications of vacuum technology in the standard laboratory. (10 marks)

4. (a) Differentiate between stress and strain as applied in metal work. (4 marks)
- (b) State **five** characteristics of hardwood stress. (5 marks)
- (c) Describe the application of rubber joints in woodwork. (6 marks)

SECTION B (40 marks)

Answer any TWO questions from this section.

5. With the aid diagrams, describe the procedure for the following glass blowing technology:
 - (a) cutting of glass tubing; (6 marks)
 - (b) formation of L-bends; (7 marks)
 - (c) joining two tubing of the same diameter. (7 marks)

6. (a) State **eight** methods of handling and storage of cryogens. (8 marks)
- (b) Distinguish between botanical hazard and zoological hazard as applied in science laboratory. (4 marks)
- (c) State the parts and functions of a light microscope. (8 marks)
7. (a) State **five** symptoms shown by a person affected by electric shock. (5 marks)
- (b) Describe the first aid procedure administered to a victim of electric shock. (5 marks)
- (c) Define the term wound. (2 marks)
- (d) Describe **four** types of wounds one is likely to suffer from while working in the laboratory. (8 marks)
8. (a) Explain the use of each of the following items found in the first aid box:
- (i) castor oil; (2 marks)
 - (ii) universal antidote; (2 marks)
 - (iii) milk of magnesia; (2 marks)
 - (iv) activated charcoal. (2 marks)
- (b) State **four** functions of laboratory safety clothing. (4 marks)
- (c) State **four** causes of fainting while in the laboratory. (4 marks)
- (d) Identify **four** types of faults on an electric plug that can lead to accidents in the laboratory. (4 marks)

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