ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Advanced Level

FOOD TECHNOLOGY AND DESIGN 6036/1

PAPER 1 Theory

3 hours

SPECIMEN PAPER

Additional materials:
Answer paper

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces provided on the answer paper/answer booklet.

Question **one** in Section A is compulsory. Answer any **three** from Section B.

Write your answers on the separate answer paper provided. If you use more than one sheet of paper, fasten the sheets together.

INFORMATION FOR CANDIDATES

Each question carries 25 marks.
The number of marks is given in brackets [ ] at the end of each question or part question.
You are reminded of the need for good English and clear presentation in your answers.

This question paper consists of 4 printed pages.

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SECTION A

Answer all parts of Section A.

1 **(a)** **(i)** Classify carbohydrates into three. [1½]

(ii) Describe their structures. [3]

(iii) Identify **two** properties of each class. [6]

(iv) Give one example of each class. [1½]

(b) Design an experiment to determine the presence of reducing sugar in fresh orange juice. [7]

(c) Describe the relationship between calcium and phosphorus in bone formation. [4]

(d) Discuss the functions of zinc in the body. [2]

SECTION B

Answer any **three** questions.

2 **(a)** **(i)** Outline **four** functions of food packaging. [4]

(ii) With reasons, give the information which must be stated on a food label, according to The Food Standard Code. [6]

(b) **(i)** Identify **five** classes of Food Additives. [5]

(ii) Give **one** example for each class in **(b) (i)** and state their functions in Food Processing. [5]

(iii) Evaluate the use of Food Additives in Food Processing. [5]

3 **(a)** Name **four** sphincters found in the gastro-intestinal tract and state where each is located. [4]

(b) **(i)** Compare and contrast bolus an chime. [4]

(ii) What is the function of mucus membrane in the stomach? [1]

(c) Using **three** examples, discuss how hormones function to ensure a satisfactory nutritional status. [6]

(d) **(i)** Describe **four** types of anaemia. [8]

(ii) Explain **two** factors which affect enzyme activity. [2]

4 **(a)** Identify **five** pigments found in vegetables and their properties, useful in food preparation. [10]

(b) Explain the ripening process in fruits. [5]

(c) Identify **two** pigments found in meat and explain the changes that take place in them during handling of fresh meat. [4]

(d) Outline the chemical changes that occur when meat is cooked using moist and dry methods. [6]

5 **(a)** **(i)** List four fat soluble vitamins. [2]

(ii) Describe their properties. [5]

(b) **(i)** Give **four** functions of vitamin A. [4]

(ii) Summarise the symptoms of **(b)(i)** deficiency. [6]

(c) Explain chemical changes that occur in Starch when exposed to dry and moist heat. [8]

6 Food security is a major factor in attaining and maintaining sound health status.

(a) Explain the term 'Food Security'. [3]

(b) Discuss factors that influence Food Security. [10]

(c) Outline **six** ways on how a nation can ensure food security for its members. [6]

(d) Compare the nutritive value of dairy products and soy products. [6]

7 **(a)** **(i)** Outline the causes of obesity. [2]

(ii) Distinguish between the following diseases:-

Rickets

Osteomalacia [5]

(b) Briefly explain any **three** ways of tenderising meat. [3]

(c) Identify and explain the changes that take place in eggs during storage. [6]

(d) Describe **three** heat treatments of raw milk used in Zimbabwe. [9]

8 **(a)** **(i)** Outline **four** ways in which food can become infected and explain how infection is spread. [6]

(ii) Differentiate between food poisoning and food infection, giving examples of micro-organisms involved in each case. [4]

(b) **(i)** Explain **four** different ways of varying colour in food preparation. [4]

(ii) Evaluate the nutritive value of tinned fish. [4]

(iii) Explain factors that cause meat to be tough. [3]

(c) Explain the following terms which are used in problems associated with food:

(i) phenylketonuria [2]

(ii) insulin dependent diabetes [2]