

P640/1
FOODS AND NUTRITION
(With science in the home)
THEORY
PAPER 1
July/August 2018
3 hours



WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

FOODS AND NUTRITION
(With Science in the home)

Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES:

- This paper consist of two sections A and B.
- Answer **four** questions, choosing **two** from each section.
- Any additional question(s) answered **will not** be marked.

SECTION A

1. (a) Discuss carbohydrates and proteins under the following headlines;
 - i) Structure. (05 marks)
 - ii) Variety. (05 marks)
 - iii) Functions. (08 marks)
- (b) Describe the properties of;
 - i) globular proteins. (02 marks)
 - ii) fibrous proteins. (02 marks)
- (c) Explain why a diet rich in proteins increases calcium absorption. (03marks)
2. (a) Senior six foods and nutrition students, as part of their school's community outreach programme, were asked to conduct a research in the village surrounding their school, to find out the main nutritional ailments affecting the people of different age groups as per their signs and symptoms. They were to provide recommendations on how to manage and prevent such conditions. After gathering data, they filled it in the table, however Joan never completed the table.

Complete table 1 below

(15marks)

Age	group	Symptoms	Condition/s	Recommendations
4moths-6yrs	Young	i)..... ii)..... iii)..... iv).....	aneamia	i)..... ii)..... iii).....
10 - 20yrs	Teenagers	- urinary tract infections - tooth problems - pain in joints - wounds take long to heal - persistent coughs and flu - asthmatic	i)..... ii)..... iii)..... iv).....
21- 55yrs	Adults	i)..... ii)..... iii)..... iv)..... v).....	Cardiovascu lar diseases & Diabetes	i)..... ii)..... iii)..... iv)..... v).....
56 & above	Elderly	i)..... ii)..... iii)..... iv).....	osteoporosis	i)..... ii)..... iii)..... iv).....

- b) Account for the different conditions affecting the different age groups. (10 marks)

3. a) i) State the habits and practices that should be avoided during pregnancy. (04 marks)
 ii) Describe the effects of the practices and habits mentioned above in pregnancy. (08 marks)
- b) Explain the points to consider when using alternative feeding during weaning. (05marks)
- c) Discuss the following;
 i) Relationship between dietary fibre and coronary heart diseases. (04marks)
 ii) Carbohydrates have a lipid sparing effect. (04marks)

SECTION B

4. a) What is the importance of the following milk products in the diet?
 i) yorghurt (03 marks)
 ii) cheese. (03 marks)
- b) With reference to a wheat grain, describe the
 i) structure (2½ marks)
 ii) nutrient distribution (4½ marks)
- c) i) Discuss the relevance of artificial sweeteners in Ugandan homes today. (04 marks)
 ii) State the uses of sugar in the cookery process. (08 marks)
5. a) Poultry constitute the main protein dish on special occasions. Discuss poultry according to;
 i) classification (04 marks)
 ii) choice (04 marks)
 iii) digestibility (05 marks)
- b) i) With examples, how are vegetables classified. (05 marks)
 ii) State the factors that affect the flavour of spices and herbs. (02 marks)
- c) Describe the various steps involved in the production of spices and herbs. (05 marks)
6. a) Explain the processes involved in the manufacture of margarine. (07 marks)
- b) Account for the application of the following properties of lipids in food production.
 i) hydrogenation. (03 marks)
 ii) rancidity. (03 marks)
 iii) emulsification. (03 marks)
- c) State the importances of puddings in the diet? (04 marks)
- d) What is the principle underlying salting method of preservation? (02 marks)

END

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Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES:

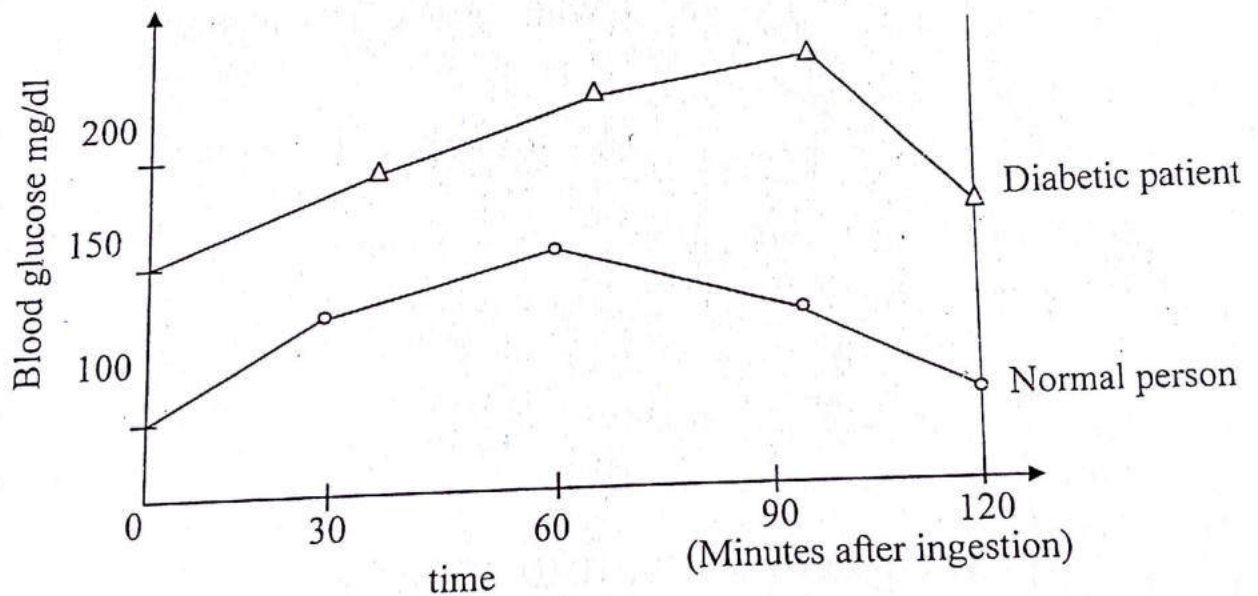
- *This paper consist of two sections A and B.*
- *Answer **four** questions, choosing **two** from each section.*
- *Any additional question(s) answered **will not** be marked.*

SECTION A

(06 marks)

1. (a) Describe the classification of amino acids. (02 marks)
- (b) Differentiate between the following links found in protein structure. (02 marks)
 - (i) Intra chain and inter chain links. (02 marks)
 - (ii) Hydrogen and salt links.
- (c) (i) Explain how energy is derived from proteins in the human body. (04 marks)
- (ii) Explain any **three** effects of protein deficiency in the body. (03 marks)
- (d) Give an account on the process of digestion and absorption of an Omelet in the body. (08 marks)

2. Study the graph below and answer the questions that follow;
A graph showing variation of blood glucose concentration in a normal individual and a severe diabetic individual after a meal.



- (a) Compare the blood glucose levels in the diabetic and normal person. (05 marks)
- (b) Give an explanation for the differences in the blood glucose levels in (a)

- (b) (i) Explain the term Ketosis in relation to fat metabolism. (05 marks)
 (ii) Discuss any **four** factors which interfere with Lipid absorption. (04 marks)
 (iii) Differentiate between lipogenesis and Lipolysis and give their importance to the body. (04 marks)

SECTION B

4. (a) (i) Define the term food path. (02 marks)
 (ii) Discuss the various blocks food is likely to meet along its path that can lead to loss of quality and quantity. (07 marks)
- (b) (i) Explain any **five** factors that affect Microbial growth. (05 marks)
 (ii) Discuss the source, incubation and symptoms of Salmonellosis. (03 marks)
 (iii) Differentiate between infectious and toxic food poisoning. (03 marks)
- (c) Discuss any **five** general principle employed in food preservation. (05 marks)
5. (a) (i) Examine the role played by sauces in the diet. (05 marks)
 (ii) Give any **four** qualities of a good sauce. (04 marks)
 (iii) Explain the procedures you would follow when preparing Be'chamel/white sauce. (04 marks)
- (b) Explain any **three** ways in which sauces can be classified. (03 marks)
- (c) Discuss the causes and solutions to the following faults in cookery.
 (i) Heavy and sour bread. (03 marks)
 (ii) Discoloration of cut fruits and vegetables. (03 marks)
 (iii) Crystallization of sugar in jam making. (03 marks)
6. (a) (i) Discuss with relevant examples the Culinary uses of sugar in the food industry. (06 marks)
 (ii) Examine the advantages and disadvantages of using food additives in the food industry. (08 marks)
- (b) (i) Draw a well labeled structure of a wheat grain. (03 marks)
 (ii) Define the term extraction rate and explain how it affects the nutritive value of maize flour. (05 marks)
 (iii) Explain the changes that take place during the preparation of millet porridge. (03 marks)

END

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Paper 1

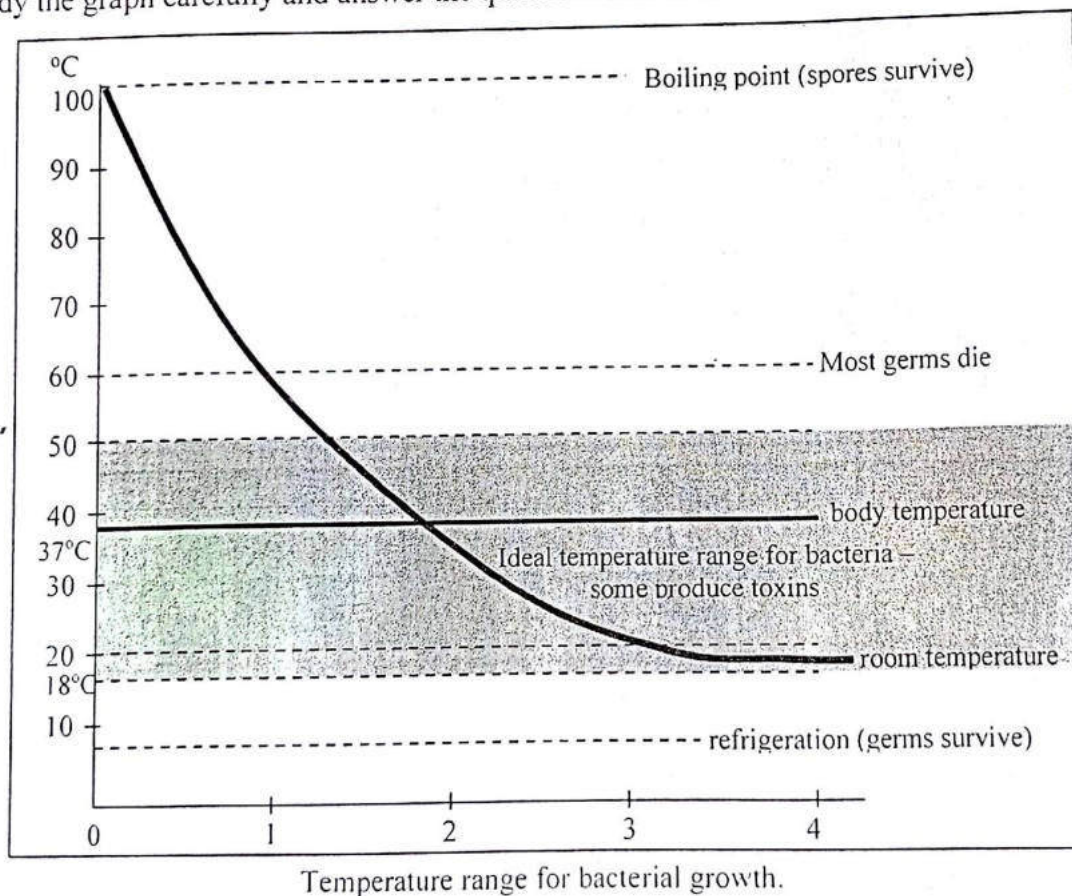
3 hours

INSTRUCTIONS TO CANDIDATES:

- *This paper consist of two sections A and B.*
- *Attempt **four** questions, choosing **two** from each section.*
- *Any additional question(s) answered **will not** be marked.*

SECTION A

1. (a) Explain the;
 - (i) Effect of taking broad spectrum antibiotics on blood clotting. (3 marks)
 - (ii) Effect of high oxygen tensions on poly unsaturated fatty acids. (4 marks)
 - (iii) Relationship between Korsakoff's syndrome and Alcoholism. (4 marks)
 - (b) What are the functions and properties of vitamin B₆. (8 marks)
 - (c) Contrast pernicious and Microcytic Aneamia. (6 marks)
2. The graph below shows the effect of temperature on the survival of a variety of bacterial species. The shaded region shows where most species survive most. Study the graph carefully and answer the questions that follow.



- (a) (i) What is the effect of temperature on the survival of the bacterial species? (3 marks)
- (ii) How does temperature affect the survival of the bacterial species? (5 marks)
- (b) Explain the difference ways by which Bacteria infect food. (9 marks)
- (c) State the types of domestic refuse and discuss the different ways of its disposal. (8 marks)

3. (a) Write short notes on the Non Insulin dependent diabetes mellitus (NIDDM) under the following headlines.
- (i) Causes and symptoms. (6 marks)
 - (ii) treatment (3 marks)
- (b) Explain the different factors that can result into obesity. (8 marks)
- (c) What is Anorexia nervosa and explain its causes. (8 marks)

SECTION B

4. (a) Cold food is popular in every kind of food service operations today.
- (i) Explain. (6 marks)
 - (ii) Discuss the different techniques associated with cold food preparation. (8 marks)
- (b) Discuss the general guidelines followed when preparing salads. (8 marks)
5. (a) What points should you consider when planning meals for the elderly. (7 marks)
- (b) Write down a recipe for the basic preparation of Muffins.
(Include: Key ingredients, procedure and serving) (7 marks)
- (c) (i) Why are table etiquettes a necessity? (4 marks)
- (ii) Suggest the table etiquettes followed when dining? (7 marks)
6. (a) (i) Describe the process of sugar extraction. (7marks)
- (ii) Explain the different uses of sugar in cookery. (4 marks)
- (iii) Diabetics usually do not take sugar. Suggest the different substitutes that can replace the normal daily table sugar and act as sweeteners. (4 marks)
- (b) (i) What factors affect the flavour and texture of cheese. (5 marks)
- (ii) Cheese is highly indigestible. How can cheese be made more digestible? (5 marks)

END

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Paper 1

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- Attempt **four** questions, choosing **two** from each section.
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SECTION A

1. a) Describe the chemical structure and elemental composition of dietary lipids. (6marks)
b) Briefly explain the following as used in carbohydrate metabolism.
i) Glycolysis. (4marks)
ii) Lipogenesis. (4marks)
iii) Gluconeogenesis. (4marks)
c) Explain the functions of essential fatty acids in the diet. (7marks)
2. a) (i) Define the term hypoglycaemia. (2marks)
(ii) Discuss the causes and symptoms of hypoglycaemia. (5marks)
b) "Different individuals have different nutritional requirements which are governed by a variety of factors". Discuss this statement with reference to proteins. (8marks)
c) With reference to the properties of vitamin C, explain how you would minimize the loss of vitamins during food preparation; cooking and service. (9marks)
3. a) Differentiate between the following.
(i) Goiter and cretinism (3marks)
(ii) Osteoporosis and osteomalacia. (3marks)
(iii) Hypothyroidism and hyperthyroidism. (3marks)
b) Discuss the general factors that affect the absorption of various nutrients in the body. (8marks)
c) Why are the following dietary guidelines recommended for a healthy life style.
(i) Choose a diet with Non starch polysaccharide. (3marks)
(ii) Choose a diet rich in unsaturated fats. (3marks)
(iii) Balance food with physical activity. (2marks)

SECTION B

4. a) Explain how each of the following is achieved in cookery.
- (i) Browning in cakes. (2marks)
 - (ii) Crust formation in bread. (2marks)
 - (iii) Thickening of porridge. (2marks)
- b) (i) Explain how frying of foods can be done successfully in the Kitchen. (6marks)
- (ii) Explain the different types of Margarine used in the home. (6marks)
- c) Describe the blocks food is likely to meet along its path from rural harvest, through urban market to the dining table. (7marks)
5. a) (i) Draw and label the diagram of a wheat grain. (4marks)
- (ii) Discuss the effects of moist and dry heat on cereals. (6marks)
- b) Discuss the rules you would follow when making pastry products. (6marks)
- c) Write short notes on the following.
- (i) Ultra heat treatment. (3marks)
 - (ii) Pasteurisation. (3marks)
 - (iii) Curing in meats. (3marks)
6. a) Differentiate between food spoilage and food poisoning. (2marks)
- b) Discuss the factors that favour the growth of micro-organisms. (6marks)
- c) Write short notes on
- (i) causes
 - (ii) mode of infection and symptoms of Salmonellosis. (4marks)
- d) (i) Discuss the causes and dietary management of peptic ulcers. (6marks)
- (ii) Plan a main course meal for a patient with ulcers. (3marks)

END

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Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES:

- *Attempt four questions, choosing two from each section.*

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Turn Over

SECTION A

1. (a) Briefly explain the process of energy transformation in the human body.
(b) Write short notes about the chemical properties of ;
 - (i) Proteins
 - (ii) Lipids
 - (c) Explain the factors responsible for acidosis and alkalosis in the body.
(d) (i) Discuss the normal physical growth pattern challenges during pregnancy.
(ii) Briefly explain how you would use pulses to prepare an interesting protein dish for a pregnant mother; Assess its Nutritive value.
-
2. (a) (i) Describe how growth monitoring curves can be used by a mother to follow up the normal nutrition of the child.
(ii) Explain the points to consider when using alternative feeding.
(b) Explain the major functions of micro nutrient metabolites.
(c) Discuss the factors which influence individual's protein requirements.
(d) Describe the ecology of malnutrition.
-
3. (a) (i) Define food behavior.
(ii) What are the determinants of food behavior.
(iii) Discuss the factors which influence food availability.
(b) Explain how the urban food path is different from the rural food path.
(c) Contrast the functions of LDLs and HDLs; hence explain the relationship between each and high blood pressure.
(d) Give reasons for the following nutritional facts,
 - (i) Cellulose is an important part of a healthy diet, though not digested by the body.
 - (ii) Triglycerides have a protein sparing effect.

SECTION B

4. (a) Define food according to a psychologist.
(b) Explain the various ways used to prevent the spoilage of milk at home.
(c) (i) Describe the structure and composition of game meat.
(ii) What factors limit the utilization of game meat in common diets.
(d) Explain the processes which occur in the preparation of the following dishes and for each change state its effect(s) on the final product.
(i) Bread.
(ii) Sponge cakes.
5. (a) Mention any four faults encountered in bread making and suggest their suitable remedies.
(b) (i) Describe the preparation and service of vegetable salads
(ii) Outline any 3 common challenges encountered in b(i) above
(c) Explain the reasons for choosing sweeteners other than sugar.
(d) Identify the common food idiosyncrasies in Uganda today.
6. (a) Explain the reasons for coating food.
(b) Why are lipids not commonly used as additives during processing and preparation of foods.
(c) How can you economize on the budget during meal planning and preparation.
(d) Explain how the nutritive value of a product can be increased.

- END -

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PAPER 1
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FOODS AND NUTRITION
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Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES:

- *Attempt four questions, choosing two from each section.*

SECTION A

1. a) (i) With examples, distinguish between saturated fatty acids and unsaturated fatty acids. (05marks)
(ii) Outline the advantages of polyunsaturated fatty acids in the diet. (04marks)
- b) (i) Explain how the human body is capable of maintaining serum calcium levels. (08marks)
(ii) Outline the possible causes and consequences of calcium deficiency in the body. (05marks)
- c) What is the role of retinol in the visual cycle? (03marks)
2. a) Compare the two forms of anaemia caused by vitamin B₆ and folic acid deficiencies. (04marks)
- b) Discuss the importance of dietary fibre in the human body. (08marks)
- c) Briefly explain the relationship between;
(i) Vitamin C and Iron (03marks)
(ii) Vitamin K and Vitamin E in the body (03marks)
- d) What points would you put into consideration when planning meals for a person suffering from self-starvation syndrome. (07marks)
3. a) With reference to the chemical properties of vitamin C, explain the precautions one should take to reduce on its loss during food preparation. (08marks)
- b) Outline the causes and symptoms of Wernike-Kosakoffs syndrome. (05marks)
- c) (i) Describe the stages involved in the process of tooth decay. (05marks)
(ii) Suggest guidelines to be followed so as to reduce on the occurrence of dental caries and periodontal diseases. (07marks)

SECTION B

4. a) Write short notes about the following methods of cake making;
In your answer includes
- General preparation procedure and key ingredients
 - Raising agent utilized
 - Example of dish in each case
- (i) Creaming (04marks)
(ii) Whisking (04marks)
(iii) Rubbing in (04marks)
(iv) Melting (03marks)
- b) What are the functions of the following ingredients used in cake making?
- (i) Fats (03marks)
 - (ii) Sugar (03marks)
 - (iii) Eggs (04marks)
5. a) Outline the guidelines you would follow when making good quality stock. (05marks)
- b) Briefly describe the following components of a three-course meal and suggest two dishes which can be suitably served.
- (i) 1st course (03marks)
 - (ii) 3rd course (03marks)
- c) With examples define a salad dressing and suggest any five functions of salad dressings. (08marks)
- d) Outline the uses of sauces in food preparation (06marks)
6. a) Distinguish the following;
- (i) Broiling from boiling (03marks)
 - (ii) food contamination from food spoilage (03marks)
 - (iii) Flash pasteurisation from holder pasteurisation (03marks)
 - (iv) Batch sterilization from continuous sterilisation (03marks)
 - (v) Spray dried milk from condensed milk (03marks)
- b) Outline the importances of yoghurt in diets and in food preparation. (05marks)
- c) Briefly explain how eggs can be used for coating (02marks)
- d) Assess the nutritive and Dietetic importance of fish. (03marks)

- END -

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WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

FOODS AND NUTRITION
(With Science in the home)

Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES:

- Attempt *four* questions, choosing *two* from each section.

SECTION A

1. a) i) Explain the factors influencing food acceptability. (05 marks)
b) i) Describe the chemical composition of dietary compounds. (03 marks)
ii) Briefly explain the process of interesterification of fatty acids. (05 marks)
c) Describe the chemical reactions which lead to the following;
i) Millard reaction. (03 marks)
ii) Formation of a peptide chain. (04 marks)
d) Discuss the challenges in preparing meals for adolescents. (05 marks)
2. a) Discuss the role of calcium and Vitamin K in blood clotting. (04 marks)
b) Compare and contrast the different forms of beri-beri. (06 marks)
c) Explain the factors that affect absorption of magnesium. (05 marks)
d) Write short notes on the following;
i) Neurological cretinism (causes and symptoms) (05 marks)
ii) Water intoxication (05 marks)
3. a) "Proteins play a vital role of energy supplementation", elaborate. (05 marks)
b) Briefly explain the causes and effects of malnutrition in Sub-Saharan Africa. (05 marks)
c) i) Giving examples explain the importance of non-starch polysaccharides in the diet. (07 marks)
ii) Differentiate between starch and non-starch polysaccharide. (04 marks)
d) Define the term positive energy Balance and explain any three situations in which it is necessary. (04 marks)

SECTION B

4. a) Write short notes about the culinary uses of the following. (02 marks)
- i) Golden syrup (02 marks)
 - ii) Cream of tartar (03 marks)
 - iii) Yoghurt (03 marks)
 - iv) Cream (05 marks)
 - v) Gelatin
- b) Outline the stages involved in the production of oil from sunflower seeds. (05 marks)
- c) Give ten reasons for cooking food (05 marks)
- a)(i) Account for the increased use of food additives during food preparation and processing today. (05 marks)
- ii) Outline the desirable characteristics of a good food additive. (03 marks)
- b) i) Give reasons in support of food packaging in the modern food industry. (03 marks)
- ii) Outline the new developments in food packaging in Uganda today. (04 marks)
- c) Describe the stages involved in the milling of a maize grain(s). (10marks)
- 6 a) Define a recipe and write short notes about the features of a good recipe. (06 marks)
- b) Explain the chemical changes which take place during the souring of milk (03 marks)
- c) i) Define a sauce and state their importance in the diet/food preparation. (04 marks)
- ii) Describe any three methods used for thickening sauces and give a sauce in which each method is applied. (07marks)
- d) Describe the physical and chemical changes which occur during bread Baking. (05 marks)

- END -

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Foods and Nutrition
PAPER 1
July / August 2009
3 Hours

WAKISSHA JOINT MOCK EXAMINATIONS
Uganda Advanced Certificate of Education

Foods and Nutrition
Paper 1

3 Hours

INSTRUCTIONS:

- **Answer four questions two from each section.**

WAKISHA 2009
FOODS AND NUTRITION
P640/1

Duration: 3 Hours

Answer four questions, two from each section

Section A

Answer only two questions from this section

1. a) State the role of vitamins in carbohydrate metabolism. (10 marks)
b) Differentiate between the properties and functions of riboflavin, niacin and thiamin (5 marks).
c) Discuss the functions of Vitamin C and the effects of its deficiency in the body (10 marks).
2. a) Explain the peculiar points to be considered when planning meals for the following:
 - i. A convalescing anorexia nervosa patient (5 marks).
 - ii. A strict vegetarian pregnant woman (5 marks).
 - iii. A diabetic adolescent female (5 marks).b) Discuss the symptoms and prevention of nutritional deficiency anaemia (10 marks)
3. a) Explain what is meant by the following:
 - i. Food fortification. (2 marks).
 - ii. Respiratory Quotient. (2 marks).
 - iii. Lipogenesis (2 marks).
 - iv. Beta- Oxidation. (2 marks)b) Describe the structure and properties of fibrous proteins (11 marks).
- c) Give reasons for the following:
 - i. Fish oils are more susceptible to spoilage than vegetable oils (2 marks).
 - ii. The energy value of carbohydrates is lower than that of fats (2 marks).
 - iii. Obesity and hypertension are closely related (2 marks).

Section B

Answer two questions from this section

4. a) Write explanatory notes on the terms mentioned below in relation to causes and implications.
 - i) Protein denaturation (5 marks).
 - ii) Non-enzymic browning (3 marks).
 - iii) Plasticity of fats (3 marks).

- b) i) Outline the dietary value of cheese. (4 marks).
ii) Describe the steps involved in the making of cheese pastry, pointing out the how and why of each step. (5 marks).
iii) Explain how cheese can be made more digestible. (5 marks).
5. a) Explain the principles involved in incorporating fat into pastry (6 marks).
b) i) Explain how the leavening effect is achieved in flour cookery. (5 marks).
ii) Outline the importance of gluten in flour. (2 marks).
iii) Describe the process involved in the development of gluten. (4 marks).
c) Discuss the role of the various ingredients used in the making of flaky pastry. (8 marks).
6. a) Explain why the buffet style is becoming a popular type of meal service in Uganda and point out its disadvantages (5 marks).
b) i). Give five uses of left-over fish. (5 marks).
ii) Explain how left over foods should be handled in order to avoid food poisoning. (5 marks).
c) Discuss the principles involved in the various methods of food preservation. (10 marks).