

FOODS AND NUTRITON

(With science in the home)

Paper 2

(Theory)

Time 2 Hours

**INSTRUCTIONS:**

Answer any **four** questions

1. a) i. Define the term evaporation (2 marks)  
ii. Explain the factors that affect the rate of evaporation in laundry -drying process. (7 marks)  
iii. What are the effects of condensation in a home? Suggest ways to avoid condensation. (8 marks)  
c) A boiler rated 3000W, 240V, takes 15 minutes to boil water. Calculate the average weekly cost of using a boiler, if it is used once every day and one unit costs 450 shillings. (4 marks)  
d) What are the advantages and disadvantages of an electrical immersion heater? (4 marks)
  
2. a) What is the importance of the following physical water treatment processes?
  - i. Aeration (2Mks)
  - ii. Chlorination (5Mks)b) i. What is sewage? (1Mk)  
ii. Explain the characteristics of settling lagoon (4Mks)  
iii. Give the advantages of lagoons system in sewage management (3Mks)  
c) i. Explain the qualities of a drainage system (3Mks)  
ii. Explain any four (4) methods of getting rid of solid wastes from our homes (4Mks)
  
3. a) i Make a clear sketch of a 30 A three flat pin fused plug with a cover removed and the fuse in position. Explain the wire colour cording of the three cables in the plug  
ii) What is the purpose of a fuse in this case?  
iii) What are the advantages of a three pin plug over the a two pig plug  
b) i A percolator is marked “2.5Kw 240V” and when filled with cold water, takes 5 minutes to boil. Calculate the cost (after the additional charges) of using the percolator for a month if it’s filled 3 times in a day.  
(1 unit of electricity costs 940/-, VAT 31% and service fee of 3%)  
ii) Explain the working mechanism of a circuit breaker and outline its advantages over a fuse  
c) i. Explain why fluorescent lamps have become very common  
ii. Explain how one can avoid the glare caused by the lamps in 3 b (ii) above

4. a) i. What do you understand by the word stratification? (2Mks)  
ii. State the principle of operation and Illustrate how the above is achieved in the domestic hot water system (8Mks)
- b) Explain the construction and importance double glazing to the house dwellers (4mks)
- c) i. Illustrate how insulation is achieved in an oven (6Mks)  
ii. Explain the structural and operational differences between a Grill and an oven (5Mks)
5. a) i. Discuss the structure and working principle of a steam cooker (10Mks)  
ii. What are the merits and demerits of using this type of cooking? (6Mks)
- b) Distinguish between the compressor and absorption types of refrigerators (5Mks)
- c) Discuss the advice you could give to your parents who are living a remote area on the maintenance of the a compressor type of fridge (4Mks)
6. a) Electric costs have become high in Uganda.  
i. Explain the reasons for the above statement (5Mks)  
ii. Discuss how you can advise someone on how to save on the costs (6Mks)
- b) i. What do understand by the term carbonization as related to home fuel making? (2Mks)  
ii. Clearly explain any three principals involved in carbonization (6Mks)  
iii. Explain the reason why the major product of carbonization is becoming expensive after each day (6Mks)