SANGAM SKM COLLEGE NADI
DEPARTMENT OF HOME ECONOMICS
YEAR 13-WEEK 2 WORKSHEET
MODEL ASNWER

Food Supply

1.

(a) Define the term household food security.

- **Production of root crops and livestock's food particularly nutritious staples**

(b) State **one** effect of climate change on food supply.

- **Future green house gas emission increases air temperature**
- **Possibility of cyclones might become stronger which causes damages to crops**

(c) Discuss one impact of natural disasters on fisheries.

- **The decrease in fish abundance may be caused by degraded reefs, mangroves and the turbidity, salinity and temperature of water**

Milk

2. Define the following:

I. Caramelization –

- **When natural milk turns brown, the heating process done to them cause the lactose (sugar in milk) to caramelize turning the milk brown.**

II. Millard reaction –

- **When the water is evaporated from this milk, the protein content is very high so when milk is sterilized the protein reacts with heat turning the milk brown. This protein reaction to heat is known as the Maillard reaction.**

III. Fermentation –

- **This process may be carried out in some homes that have dairy farms to make their own cultured milk products but it is an expensive and time consuming process.**

3.

I. Identify the protein which forms scum when milk is heated and state the effect of scum formation.

- **Lacto globulin – when milk is heated and is responsible for milk boiling over.**

II. State one way of preventing film formation when heating milk.

- **Temperature to be lowered and milk needs to be diluted**

4. Discuss the action of lactic acid producing bacteria on casein.
    - **Fresh milk has a pH of 6.6, which is close to the pH of 7. Raw milk, which normally contains some lactic acid-producing bacteria, that feeds off the lactose (sugar) in milk, gradually increases the acidity on storage. The waste product is Lactic acid. When enough lactic acid has been produced from lactose by bacteria in the milk, this results in 'sour' milk. The pH begins to fall to 4.6 the colloidally dispersed casein particles become unstable**

5. State the difference between homogenization and pasteurization.
    - **Homogenization is when Milk is a 'colloidal dispersion' which means it contains 2 immiscible liquids; fat and protein (water). If not homogenized, milk will keep separating back into two separate layers. In this process, milk is passed through a tiny valve to break up the cluster of fat globules and distribute them evenly amongst the protein globules so that it remains as an emulsion whereas Pasteurization Milk is heated to 72°C for 15 seconds then cooled rapidly to kill the bacteria. There are two main types of Pasteurization. HTST – (High Temperature, Short Time - 72°C for 15 secs) LTLT – (Low Temperature, Longer Time - 68°C for 30 mins) A little bit of flavour, Vitamin B and Vitamin C are lost in this process**
6. Define the term hygroscopic.
    - **When exposed to air, dry milk particles absorb moisture from the air making them lumpy and having a stale flavour**

<u>Cereal</u>

7. Differentiate between gelatinization and Dextrinisation with examples.
    - **Starch is insoluble in cold water so when mixed with cold water, starch granules settle to the bottom. If moist heat is applied, heat breaks down the cell wall allowing the starch to absorb water and enter the cooking water, thickening the mixture and softening the Starch. E.g. Vegetables, Root crops, Rice whereas Dextrinisation During the heating process, the starches within the food are broken down (by a chemical reaction) into sugars called dextrin. ... Producing dextrin therefore results in a change in colour of food to golden brown. This is the process called Dextrinisation.**

8. State **one** reason for spoilage of whole meal flour during storage.
    - **Due to rancidity since whole meal flour contains fat. (spoilage of fat)**