**FIRST TERM E-NOTES FOR S.S.S. TWO FOODS AND NUTRITION**

**WEEK ONE TO WEEK TWELVE**

**SCHEME OF WORK**

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| **WEEKS** | **TOPICS** |
| 1 | Meat cookery; types of meat from different animals, nutritive value of meat, methods of cooking meat, types and cuts of meat, meaning of offals |
| 2 | Poultry cookery; types of poultry, nutritive value of poultry, factors to consider when choosing poultry and its preparation for cooking, methods of cooking poultry |
| 3 | Practical on meat and poultry |
| 4 | Eggs; identification of different types of eggs, nutritive value of eggs, factors to consider when choosing eggs and test for freshness, uses of eggs in cookery |
| 5 | milk and milk products; definition and types of milk, types of milk product, uses of milk |
| 6 | Practical on eggs and milk |
| 7 | Sea foods; types of fish in local and sea water, nutritive value of fish, classes of sea foods, methods of cooking |
| 8 | Practical on sea foods |
| 9 | Condiments and seasoning; types of herbs and spices, local herbs, local spices, foreign spices, uses of herbs and spices in cookery |
| 10 | Foods flavourings and colouring; types, uses in food cookery |
| 11 | Revision |
| 12 | Examination. |

**WEEK: 1**

**TOPIC: MEAT COOKERY**

Meat is the muscle derived from animals after slaughtering them. Meat is made of bundles of muscles fibres. Each separate fibre contains water, protein, numerous salts and extractives. The fibres are joined together and connected by to the bones of the animals by connective tissues and are connected to bones by tendons.

White meat has a lower texture, with a less amount of fat and connective tissues e.g. veal, rabbit, chicken e.t.c. Red meat is the meat that contains more fat and connective tissues, it is found in pork, beef, lamb e.t.c. and has more flavour. Lean meat is the part of the meat that contains little fat but having no superfluous fat

**NUTRITIVE VALUE OF MEAT**

1. **Proteins:** The major nutrient found in meat is protein. The protein found in meat is of high quality because it is rich in all the essential amino acids in the proportions required and can readily be absorbed and used by the body.
2. **Vitamins**: Meat is also a valuable source of B-complex vitamins e.g. riboflavin, nicotic acid and thiamine. The fatty meat like pork is also rich in Vitamins A and D.
3. **Minerals Element:** meat is rich in mineral elements little sulphur, calcium and phosphorus.
4. **Fat:** this is embedded in the connective tissues between the fibres. Meat such as pork, ham and bacon has much higher fat value and consequently have lower protein than lean meat
5. **Water:** the percentage of water varies according to the type of meat, but all contains some water.

**TYPES OF MEAT FROM ANIMALS**

***Beef from cow***

***Mutton from sheep***

***Lamb from a young sheep***

***Veal from calf***

***Game from bush animals like rabbits, antelope, deer, birds e.t.c.***

***Pork, ham, bacon, from pig***

***Lard: pure white fat from pig.***

**DIFFERENT CUTS OF MEAT (from cow)**

1. Head
2. Neck
3. Chuck
4. Rib Roast
5. Wing-end sirloin
6. Sirloin or T-Bone Steak
7. Diamond Bone Steak
8. Rump Steak
9. Airtch-Bone
10. Lap
11. Brisket
12. Housekeeper’s Cut (b) Shoulder’s Ring
13. Button-end
14. Shin Beef
15. Ox Tongue
16. Oxtail
17. Round
18. Leg Beef.

**METHODS OF COOKING MEAT**

There are many methods of cooking meat. The method chosen will however depend on two factors (i) the type of cut (ii) the objective of the cooking and subsequent utilization of the meat. The various methods of cooking meat are:

1. Boiling
2. Frying
3. Stewing
4. Roasting
5. Broiing
6. Braising
7. Steaming

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| **Methods** | **Cuts** |
| Roasting | Ribs, Wing-end of sirloin, Sirloin, Diamond Bone, House keeper’s cut |
| Frying | Neck, Chuck, Sirloin, Diamond Bone, Lap, Brisket, Shoulder’s Ring, Rump, Shin Beef, Round |
| Braising | Round steak, Chuck, Housekeeper’s cut |
| Boiling | Lap, Aitch-bone, Ox tongue, Round, Button-end |
| Broiling | Sirloin, Rib |
| Steaming | Round, Shin Beef, Housekeeper’s cut, Shoulder Rings |

**MEANING OF OFFALS**

Offals is the name given to the edible part of the internal organs of animals. They include: liver, kidney, tripe, sweetbread, tongue, brain, lungs e.t.c. they provide good quality protein and are also good sources of mineral elements and vitamins. Offals are very perishable and should therefore be cooked as quick as possible if no refrigerator is available. They also require thorough cleaning before cooking. They should be fresh when purchased.

**EVALUATION;**

* State 5 types of meat and their origin.
* Describe the nutritive value of meat.

**ASSIGNMENT:**

Draw and label a cow.

**WEEK: 2**

**POULTRY COOKERY**

Poultry refers to meat derived from some domesticated birds such as fowls, guinea fowls, turkeys, ducks and pigeons. The composition and nutritive value of poultry is similar to that of meat from animals. In poultry, especially fowls and turkeys, the fat lies under the skin and around the giblet; it is not embedded between the fibres as in meat. Poultry has lower fat content than meat and is therefore more easily digested than meat.

Poultry can be classified in two: ***white meat and dark meat,*** the ***white meat*** consists of meat derived from the breast and wings of the bird while the ***dark meat*** refers to those gotten from the legs. The white meat is more digestible than the dark meat, this is because the dark meat is more muscular and of coarser fibre because of the greater muscular activity of the legs.

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| **Species** | **Young** | **Mature** |
| Chickens | Young chicken, broiler, fryer, roaster, cockrel | Mature chicken, hen, stewing chicken, fowl |
| Turkeys | Young turkey, fryer-toaster, young hen | Mature turkey, yearling turkey, old turkey |
| Ducks | Duckling, young duckling, broiler duckling, fryer duckling, roaster duckling | Mature duck, old ducks |

**FOOD VALUES OF POULTRY**

1. **Protein:** like meat, poultry flesh is rich in protein of good quality. It is a 1st protein that contains all the essential amino acid.
2. **Fat:** poultry have little fat, but the fat lies under the skin and around the giblet, especially fowls and turkeys. It is not embedded between the fibres as in meat.
3. **Vitamins:** poultry have small quantity of the B-Complex vitamins but less nicotinic acid around the legs of the bird than the breast.
4. **Water:** poultry meat virtually contains water.
5. **Minerals Salts:** the flesh of poultry contains iron and phosphorus.

**FACTORS TO CONSIDER WHEN CHOOSING POULTRY**

1. There should be plenty of down feathers over the body of the bird. The quills on the wings should not be difficult to remove. There should be no long hair on the thigh.
2. The comb and wattles should be small, bright red in colour.
3. The legs should be smooth and pliable; the scales of the legs should not be thick but slightly overlapping.
4. The feet should be supple and the beak pliable.
5. The breast should be plump. The prominent bones e.g back bone should be covered with flesh.
6. The weight of the body should be more than that of the feathers.
7. The eyes of the bird should be bright and sparkling.
8. The bird should not look dull but lively.
9. There should be no grains of corn in the crop.

**PREPARATION OF POULTRY**

The birds should be killed at least one hour before cooking. This is to allow sometimes for hanging until the period of ‘Rigor Motis’ is passed. After killing the bird, its carcass becomes stiff, rigid and difficult to bend. This stage is what is known as ‘Rigor Mortis’. However, after sometimes all the muscles relax again, at this stage, ‘Rigor Mortis’ is passed. The flesh of the poultry usually becomes more tender after passing this stage. If the intention is to make the poultry very tender, the carcass can be suspended by the feet in a cool dry place for another one to two hours. After this, the bird is then immersed in boiling water. A cup can be used to pour the boiling water all over the body. The feathers should be plucked quickly without allowing it to cool. If the bird is very young, do not dip in boiling water, pluck it dry, but if the wing feathers are difficult to remove, dip the tips of the bird in boiling water and they will come off easily.

After the feathers have been removed, singe over a smokeless fire to remove long hairs. Cut off the head and feet, If these are required, remove the scales from the feet and feathers from the head. Cut off the nails and beak. Wash the bird well with a clean sponge and some soap, wash twice if necessary and rinse each time after washing. Rinse well to remove any trace of soap. Cut at the joint, cut off the legs and the thighs then the wings and the neck. Cut down the breast bone and remove the internal organs, put this on the plate. Cut the body into the number of pieces desired. Carefully remove the gizzard, slit open at the side and remove inner bag and discard. Cut off the liver, being careful not to burst the gall bladder, remove the part and discard the rest of the internal organ.

**METHODS OF COOKING POULTRY**

1. Broiling
2. Frying
3. Roasting
4. Grilling
5. Stewing.

**EVALUATION:**

* Mention 6 factors to consider when choosing poultry.
* Diff. btw the nutritive value of meat and poultry.

**ASSIGNMENT**

- State the various methods of poultry storage.

- describe the red and white meat of poultry in two paragraphs.

**WEEK: 4**

**TOPIC: EGG COOKERY**

**STRUCTURE OF THE EGG**

Eggs are produced by domesticated bird such as chicken, turkey, duck, goose and guinea fowl. The hen’s egg of average size weights approximately 56 g, they are covered with a hard protective shell which can be either be white or brown in colour. The colour of the bird depends upon the breed of the chicken and it is unrelated to the food value and quality of the egg. Eggs are spherical in shape with one end pointed and the other blunt.

Immediately beneath the egg shell are two inner membranes which separate at the blunt end of the egg forming what is known as air space. At the centre of the egg is the egg yolk which is held in position by two cords-like structures called ***Chalazae***. The egg-yolk is covered by a membrane known as ***Vitaline membrane***. Immediately after the vitaline membrane is the thick egg white. A high proportion of thick white. A high proportion of thick white is an indication of good quality of the egg.

**NUTRITIVE VALUE OF AN EGG**

1. Protein: the protein of eggs as a whole is of good biological value and is easily digested. Eggs can therefore be used to replace meat, fish and poultry in a diet.
2. Vitamins: eggs also contain some vitamins such as Vitamins A, D and B-Complex. Both egg yolk and white are good source of riboflavin and is this vitamin that is responsible for the slightly greenish tint to an egg white.
3. Mineral Salts: eggs are rich in mineral salts like iron, sulphur, phosphorus and calcium.
4. Water: 51 percent of the yolk of egg contains water and the white contains 87 percent. This shows that egg contains a reasonable amount of water.
5. Fat: the yolk of an egg contains appreciable amount of fat than the fat which is totally devoid of fat.

***Note: eggs do not contain carbohydrate or starch; they should be combined with carbohydrate foods in order to give the necessary bulk.***

**FACTORS TO CONSIDER WHEN CHOOSING EGGS AND TEST FOR FRESHNESS**

1. When held against the source of light, it should be bright and not opaque.
2. When broken, the yolk should be intact and surrounded by the egg white. A diffused yoke i.e. one in which yoke and egg white are mixed together is bad.
3. When immersed in salt water, it should sink and float.
4. When broken, there should be no offensive odour produced.
5. When shaken, no sound should be produced if the egg is of good quality.

**USES OF EGGS IN COOKERY**

1. Eggs are used to increase food value and to improve the flavours of food to which eggs are added. E.g. doughnut, pan cakes e.t.c.
2. As a binding medium e.g. fish, cakes, yam balls.
3. For coating foods for frying, e.g. fish, yam balls e.t.c.
4. As thickening agents e.g. in sauce, custard e.t.c.
5. As a raising agent in cake making.
6. For garnishing, hard boiled eggs are sliced or wedged and used for garnishing salads.
7. For glazing pastry, bread dough, biscuits e.t.c. before baking.
8. Eggs are valuable in diet especially in that of growing children and invalids because they are rich in nourishment and easily digested.

**EVALUATION**

* State 5 indications of egg freshness.
* Describe the structure of a typical egg.

**ASSIGNMENT**

Draw and label the structure of an egg.

**WEEK: 5**

**TOPIC: MILK COOKERY**

**MILK AND MILK PRODUCTS**

Milk is a creamy liquid produced from the mammary glands of all female mammals for feeding their young ones. Milk can be produced from cows, horses, goats, sheep etc. The commonly used worldwide is cow milk. It is one of the most valuable foods containing practically all foods substance. It is sometimes regarded as nature’s perfect food but this is only true for babies , the nutrients are not in the correct proportions for adults , the proportions of carbohydrate is too law and it also lacks iron and vitamin C . Milk is extremely valuable in the diet of invalids and convalescent on account of its food value. It is richly digested.

**NUTRITIVE VALUE OF MILK**

The percentage nutrient composition is shown below.

**Composition of whole milk**

**NUTRIENTS PERCENTAGE (%)**

Carbohydrate 4.9

Protein 3.9

Fat 3.7

Water 87.2

Ash 0.7

Milk, as can be seen from the composition above, has a good balance of carbohydrate, fat and protein. The carbohydrate in milk is called ***lactose***. It is a disaccharide and is less sweet than the common sugar, ***sucrose.*** It is also less soluble than sucrose. The fat content of whole milk varies among individual cows. However, during processing in the industries, milk is blended and fat content controlled. The minimum standard for the fat content of whole milk in many countries is 3.25%.

Milk is a good source of high quality protein. The major protein in milk is ***casein***. The second most important protein found in milk is ***albumin***, while the protein ***globulin*** ranks third. It must be mentioned that the protein in milk is rich in all the essential amino acids. Whole milk is also rich in vitamins, both fat soluble and water soluble vitamins. Among the fat soluble vitamins, vitamin A is found in the highest quantity while vitamin D, E and K are present in small amounts. Milk is only a fair source of thiamine, but is a good source of riboflavin. Similarly, milk is a good source of some essential mineral elements such as ***calcium*** and ***phosphorus.*** It is however, low in iron.

**TYPES OF MILK**

1. ***Fresh whole milk:*** This is the milk that is obtained directly from the cow in which none of the nutrients has been removed. It is therefore, very nutritious. The fresh whole milk can however, be subjected to other industrial processes in a bid to preserve and store it. For example, the milk can be heated for a short time (about 30 minutes) at a temperature below 1000C. Such a heat treatment is known “pasteurization”. The aim of pasteurization is to kill all the harmful bacteria present in the milk. The milk can also be homogenised. Another processing that fresh milk can be subjected to is “sterilization”. In this process, the milk is subjected to a more severe heat treatment than pasteurization. The objective here is not only to kill the harmful bacteria, but all the micro-organisms present in the milk.
2. ***Skimmed milk***: Here the fat content has been removed. It is therefore made predominately of protein, carbohydrate, minerals and vitamins. Consequently, it has lower energy value than the whole milk.
3. ***Dried or powdered milk***: Over 90 % of the water content has been removed and it is then milled to powdered form. Both whole and skimmed milk can be processed into milk powder. When skimmed milk is used, it is known as dried skimmed milk.
4. ***Evaporated milk***: This is a whole milk from which about 60% of the water content has been removed. This is achieved by beating the milk in a vacuum. It is then homogenized, cooled, put into cans and sterilized by heat treatment.
5. ***Condensed milk***: This is evaporated milk to which a safe and suitable nutritive sweetener usually sugar has been added, so it is sweeter and thicker than evaporated milk. Because of the very high sugar content. It can keep longer than evaporated milk. When over 95 percent of the water content of condensed milk is removed, condensed dry milk is obtained.

**MILK PRODUCT**

1. Yoghurt: this is obtained by allowing the milk to ferment for some time by some special type of bacteria. The resulting product usually has a characteristic ‘tangy’ taste. At local level, yoghurt is produced in a form known as ***Nono (Hausa).***
2. Cheese: the making of cheese is an ancient method of preserving milk. Cheese is usually produced by fermenting the whole milk by lactic acid forming bacteria followed by treating the product with an enzyme known as rennin. An example of a local cheese is ***Wara (Yoruba).***

**Types of Cheese**

There are different types of cheese, these include:

1. Hard cheese e.g. Cheddar, Cheshire, Parmesan.
2. Semi-hard cheese e.g. Caerphilly, Wensleydale
3. Blue-veined e.g. Irish Blue, Danish Blue
4. Soft cheese e.g. Camembert
5. Cheese spread e.g. Samsoe and Gouda.

**USES OF YOGHURT**

**Uses of Milk Products**

**Yoghurt**

1. It can be taken to occasion such as picnics, camping, caravanning where it can be served as desserts. It is also consumed in hot climates as a refreshing meal course.
2. It can be served with pastry instead of cream
3. It may be used with fruits and vegetable salad or added to the salad dressing.
4. It can be added to dishes to improve their flavour e.g. to soup sauces and gravies.

**USES OF CHEESE**

1. As main ingredients in dishes e. g. It can be used as substitute for meat in vegetarian dishes
2. Acts as additional flavouring
3. Can be consumed as snacks. e.g. with bread or biscuit
4. Can be served plain at the end of lunch
5. Can be used to supplement carbohydrate foods e.g. macaroni cheese, cheese pudding e.t.c.

**EVALUATION**

Describe the pasteurisation and homogenisation of milk

**ASSIGNMENT**

Make a research to find out how local cheese [Wara] is prepared

**WEEK: 7**

**TOPIC: SEA FOODCOOKERY**

Fish and sea foods are creatures that live in either fresh or salt water. They are broadly classified into two groups namely:

1. Fin fish
2. Shell fish:

**The fin** are fish with fins on their bodies, they are further classified into two major groups;

1. ***White or lean fish:*** have their fat stored in the liver and not between the muscle fibres. The flesh is white in colour. The oil from the liver of some large fish is extracted and sold for medicinal use, e.g. cold-liver oil. The white fish are cod, halibut, tilapia, and bream.
2. ***Oily or fat fish:*** this is another type of fin fish having their fat all over their body especially the muscles fibres. They normally have dark looking flesh due to the presence of oil between the fibres. Examples are herrings, mackerel, salmon e.t.c.

**The shell fish** they have a protective shell covering the flesh. Shell fish can be divided into two groups. One group has a soft body protected by a shell e.g. oysters, mollusks, clams and scallops. The other has a segmented crust-like shell e.g. lobsters, shrimps, crabs and crayfish.

Because of the large percentage of water present and deficiency in fat, white fish is of less nutritive value than oily fish. The food value of shell fish lies mainly in its protein content and the useful amount of B-vitamins and iodine it contains. Most fin fish are caught in the fresh waters while the shell fish are caught in the ocean and salt waters.

**NUTRITIVE VALUE OF FISH**

Like meat, fish are also a good source of protein that is rich in all the essential amino acids. The protein of fish is more tender than that of meat and therefore more digestible. The fat content of fish is however considerably less than that of most types of raw meat and poultry. Because of the lower fat content, the energy content of most fish is lower than that of meat and poultry.

The mineral content of fish is variable. Many types of fish are poor sources of calcium. However, those canned with bones are an excellent source of calcium if the bones are consumed with the flesh. Most of the fish are low in iron, but oysters are rich in this mineral. Fish from the sea are good sources of iodine because of the presence of this element in sea water. Most fish are good sources of B-complex vitamins while the fat fish are also rich in the fat soluble vitamins especially vitamins A and D. There are no carbohydrates in fish and therefore it should be combined with carbohydrate foods.

**FISH CUTS**

1. Whole or round fish: these are fish that are marketed as taken from the water.
2. Drawn fish: these have had their internal organ removed.
3. Dressed or fish: these have also had the scales, head, tail and fins removed.
4. Steaks: these are cross-section slices from a large dressed fish.
5. Fillets: these are the sides of a fish cut lengthwise away from the backbone. They are practically boneless.

**METHODS OF COOKING FOOD**

1. Frying
2. Boiling
3. Stewing
4. Steaming
5. Grilling
6. Baking.

**EVALUATION**

Classify the types of fish and give two examples each

**ASSIGNMENT**

Draw the different cuts of fish.

**WEEK: 9 & 10**

**TOPIC: CONDIMENTS AND SEASONING (*Foods Additives)***

**SUB-TOPICS: HERBS/ AND SPICES, FOODS FLAVOURING AND COLOURING**

Herbs and spices belong to a group of substances known as ***“Food Additives”***. Food additives are substances deliberately added to food to improve the appearance, colour, texture, flavour, nutritive values, aroma and taste and also to preserve the food. By improving the flavour and texture of foods, herbs and spices excite the appetite and increase the flow of the digestive juices thereby making the food more easily digested. Herbs are usually obtained from the leaves of plant while spices are derived from the roots, seeds buds or the bark of plants. Herbs and spices should be purchased in small amounts so that they may be used before they become stale. Because they contain volatile materials known as essentials oils which give them their characteristics flavour and aroma.

**Classification of Herbs and spices**

Herbs can be classified into two main groups. Viz: Natural and Artificial.

***Natural herbs and spices*** are those used directly as derived from the plants without subjecting them to any industrial processing.

***Artificial herbs and spices*** are herbs and spices that are produced industrially after some processing.

**NATURAL HERBS & SPICES ARTIFICAL HERBS & SPICES**

African lemon grass Curry

Bitter leaf (ewuro, shawaka onugbu) Thyme, Mustard

Tea bush (efirin, nchanwa, infang, amana) Sesame

African nutmeg Nutmeg

African black pepper (Ijere, Uziza, ada) Cinnamom

Ginger, garlic, onion

Red, pepper, mustard seed

Ogiri (fermented melon) iru

**FOOD FLAVOURING AND COLOURING**

Flavourings are substances added to food to improve the flavour, aroma, texture and in some cases taste. Colourings on the other hand are substances added to food to improve its colour and hence make it more aesthetically appealing and attractive. Both flavouring and colouring can be classified into two major groups, viz: natural and artificial. The natural ones are those present in plants. In this case, the actual plants are added to food and they exude their flavour, aroma or colour during cooking. The artificial ones are the extracts from the plants and are chemically modified to suit specific objectives. They are produced industrially. Certain chemicals are also added to food to assist in establishing the colour and flavour of the food. These types of chemicals are called ***flavour enhancer.***

***Examples of flavouring***

**NATURAL ARTIFICIAL**

Ginger Curry powder

Cinnamon Vinegar

Nutmeg Thyme

Pepper

Sesame

Onion

Dry crayfish

Orange peel

Rosemary

Sesame

Ogiri, iru

***Examples of colouring***

**NATURAL ARTIFICIAL**

Carotene coal tar dyes of different colours e.g. those used in the manufacture of ice cream, jellies e.t.c.

Chlorophyll vanilla caraynel (from burnt sugar)

Turmeric

Anthocyanins

Carotenoids

Saffror

Cochineal (from crushed insects)

**USES OF FOOD ADDITIVES**

1. To improve the flavour of the food
2. To improve the appearance and colour of the food
3. To improve the taste of the food
4. To excite appetite
5. For garnishing and preservatives.

**EVALUATION**

Differentiate between herbs and spices.

**ASSIGNMENT**

Make a list of ten local spices used in your locality