110145

CALICUT UNIVERSITY

FOURTH SEMESTER B Sc DEGREE EXAMINATION

(CBCSS-UG)

Core Course- Family and Community science

FCS5 D- FOOD SCIENCE AND BASIC COOKERY

Time: 2 Hours Maximum Marks: 60

Section A

Answer all questions. Each question carries 2 marks

1. What are the essential vitamins present in rice?

   - Fiber
   - Vitamins B1 (thiamin) and B6
   - Magnesium
   - Phosphorus
   - Selenium
   - Manganese

2. How does yeast contribute in bread making?

   - To convert sugar into carbon dioxide gas, which lifts and aerates the dough.
   - To mellow and condition the gluten of the dough so that it will absorb the increasing gases evenly and hold them at the same time.

3. Give examples of food items that can be included in a vegetarian diet to meet protein requirements.

   - Seitan. Seitan is a popular protein source for many vegetarians and vegans.
   - Tofu, tempeh, and edamame. Tofu, tempeh, and edamame all originate from soybeans and are especially popular in East Asian cuisine.

- Lentils.
- Beans.
- Nutritional yeast.
- Spelt and teff.
- Hemp seeds.
- Green peas.

4. Enlist vegetables which are good sources of Vitamin-C.

   - Citrus (oranges, kiwi, lemon, grapefruit)
   - Bell peppers.
   - Strawberries.
   - Tomatoes.
   - Cruciferous vegetables (broccoli, Brussels sprouts, cabbage, cauliflower)
   - White potatoes.

5. Name the sugar which is found in fruits.

   Natural sugars are found in fruit as fructose and in dairy products, such as milk and cheese, as lactose

6. How will you differentiate between stale and fresh eggs?

   Place the eggs in the bowl one by one. If they sink to the bottom and lay flat on their sides, they are fresh. If it doesn't sink completely and sticks to one of the sides of the bowl, they aren't very fresh, but still good to eat. If they float on the surface, they have gone bad, and should not be consumed.

7. Enlist few techniques to consume oil healthily.

   Ensure that there is no visible smoke while frying. Don't reuse or reheat your cooking oil. Use suitable oils as per the dish that you are cooking. Since extra virgin olive oil has a lower smoking point, it is best used for mild cooking or in salad dressings.

   - Canola.
   - Corn.
   - Olive.

- Peanut.
- Safflower.
- Soybean.
- Sunflower.

8. How are food items preserved by addition of heat?

   Heat preserved foods are foods that have been treated using a thermal process to extend their shelf life. Examples include canned fruit and vegetable products, aseptically processed fruit juices in cartons and pasteurized ready meals.

9. Enlist few steps to prevent crystallization of sugar while cooking?

   Crystallization may be prevented by adding an interferent, such as acid (lemon, vinegar, tartaric, etc.) or glucose or corn syrup, during the boiling procedure

10. Why is there a need to preserve food?

    The primary objective of food preservation is to prevent food spoilage until it can be consumed. Gardens often produce too much food at one time—more than can be eaten before spoilage sets in. Preserving food also offers the opportunity to have a wide variety of foods year-round.

11. How is blanching done?

    Blanching is scalding vegetables in boiling water or steam for a short time. It is typically followed by quick, thorough cooling in very cold or ice water. Blanching stops enzyme actions which otherwise cause loss of flavor, color and texture. Blanching (scalding vegetables in boiling water or steam for a short time) is a must for almost all vegetables to be frozen. It stops enzyme actions which can cause loss of flavor, color and texture. Blanching cleanses the surface of dirt and organisms, brightens the color and helps retard loss of vitamins.

12. What is pasteurization?

    Pasteurization or pasteurization is a process in which packaged and non-packaged foods (such as milk and fruit juices) are treated with mild heat, usually to less than 100 °C (212 °F), to eliminate pathogens and extend shelf life.

(Ceiling marks=20 Marks)

Section B

Short answer questions.

Answer all questions. Each question carries 5 marks

13. Explain the role of pulses in cookery.

    Pulses are rich in protein and B vitamins and improve the quality of cereal protein. Pulses give due to high protein and fibre. Pulses improve flavour and consistency of dal, sambhar and rasam.

14. What is the quality factors used to grade eggs?

    Egg graders determine quality based on the egg's: shell, white, yolk, and air cell.

15. Explain the benefits of consuming beverages.

    Getting enough water every day is important for your health. Drinking water can prevent dehydration, a condition that can cause unclear thinking, result in mood change, cause your body to overheat, and lead to constipation and kidney stone.

16. How does freezing help in preservation?

    Freezing delays spoilage and keeps foods safe by preventing microorganisms from growing and by slowing down the enzyme activity that causes food to spoil. As the water in the food freezes into ice crystals, it becomes unavailable to those microorganisms that need it for growth.

17. Enlist the major food groups and its importance.

    1. Carbohydrates. Carbohydrates give you energy, calcium and B vitamins.
    2. Protein. ...
    3. Dairy products. ...
    4. Fruit and vegetables. ...
    5. Fats and sugars.

    Eating a variety of foods from the 5 major food groups provides a range of nutrients to the body, promotes good health and can help reduce the risk of disease - as well as keeping your diet interesting with different flavours and textures.

18. Explain the impact of heat on protein.

    High temperatures affect the secondary, tertiary, and quaternary structures of polypeptide chains. During heating, aggregates form, releasing hydrophobic groups by protein-protein interactions.

19. Mention few critical points to be considered while baking cake.

- Use room-temperature ingredients. ...
- Cream butter and sugar thoroughly. ...
- Check flour and raising agents are fresh. ...
- Follow the recipe. ...
- Measure precisely. ...
- Sift dry ingredients onto wet. ...
- Fold in gently but thoroughly. ...
- Use the correct cake tin.

(Ceiling marks=30 Marks)

Section C

(Essay Questions)

Answer any one Question.Each question carries 10 marks.

20. Explain the stages of sugar cookery

- Soft-Ball Stage. 235° F–240° F. sugar concentration: 85%
- Firm-Ball Stage. 245° F–250° F. sugar concentration: 87%
- Hard-Ball Stage. 250° F–265° F
- Soft-Crack Stage. 270° F–290° F
- Hard-Crack Stage. 300° F–310° F.

21. Compare between the nutritional profile of cereals and pulses.

Cereals contain high levels of carbohydrates but are good source of Dietary Fiber, Vitamin ~~A,~~ B6, B12, C, Calcium, Phosphorus, amino acids and other minerals. Pulses have comparatively lower contents in carbohydrates but are rich in other nutrients like proteins, amino acids, fibre, vitamins and minerals.

(Ceiling marks=10 Marks)