Term End External Examination 4th Semester (Session- July 2024)

Subject: Food Science and Technology

Course No and Title: FSTC1422M/Cereal & Bakery Technology

Time: 2.15 hours Max Marks:100 Min. Marks:40

Section A: Objective Type Questions

Q1. Choose the appropriate Answer: (8x1.5=12)

i. Which part of the wheat grain is primarily used for making white flour?
   A Bran **B** Germ
   C Endosperm **D** Husk

ii. Maize is known by which another common name?
   A Wheat **B** Corn
   C Barley **D** Oats

iii. Which cereal is most commonly associated with the production of popcorn?
   A Wheat **B** Corn
   C Barley **D** Oats

iv. What is the primary use of durum wheat?
   A Bread **B** Pasta
   C Beer **D** Cereal

v. Which nutrient is corn particularly high in?
   A Protein **B** Carbohydrates
   C Fat **D** Vitamin C

vi. Which cereal crop is commonly used for brewing beer?
   A Wheat **B** Barley
   C Maize **D** Oats

vii. What is the primary protein in wheat that gives bread its structure and elasticity?
   A Casein **B** Albumin
   C Gluten **D** Zein

viii. Which vitamin is predominantly found in whole grains but often lost during refining?
   A Vitamin C **B** Vitamin B1 (Thiamine)
   C Vitamin D **D** Vitamin K

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Section-B: Descriptive Type Questions (Short Type)

Q2: Answer all the Questions (8 x 4 =32)

i. Explain the nutritional significance of wheat in the human diet.

ii. Describe the process of milling wheat into flour.

iii. What is parboiling of paddy? What are its main objectives?

iv. Compare and contrast the uses of maize in food products

v. Outline the steps involved in the malting process of barley.

vi. Why is hydrothermal treatment/ conditioning done in wheat?

vii. Describe the role of gluten in bread making and its impact on the texture of the final product.

viii. Explain the importance of fermentation in bread making and how it affects the bread's flavour and structure.

Section – C: Descriptive Type Questions (Medium Type)

Answer all the questions: (4 x 7=28)

Q3. Explain the principle of modern wheat milling and its machinery?

OR

Discuss the nutritional value of maize and its role in human and animal diets. How does it compare to other cereals like wheat and barley?

Q4. Explain the composition of wheat grain and its significance in bread making?

OR

Analyze the different types of corn (sweet corn, field corn, popcorn, etc.) and their various uses in food and industrial applications

Q5. Outline the key steps in the bread-making process. How do different ingredients (flour, water, yeast, salt) contribute to the final product?

OR

Examine the impact of genetic modification on the yield and quality of cereal crops. Provide examples with a focus on maize and wheat.

Q6. Provide an overview of the nutritional advantages of consuming millets over traditional cereals like wheat and rice. What are the key challenges in incorporating millets into mainstream diets

OR

Discuss the process of malting barley and its significance in brewing and distilling industries. What are the biochemical changes that occur during malting?

Section – D: Descriptive Type Questions (Long Type)

Answer any two of the following: **(2 x 14=28)**

Q7. Discuss the cultivation, nutritional composition, and industrial applications of wheat, maize, and barley. How do these cereals contribute to the global food?

Q8. Explain the process of bread making, emphasizing the roles of different types of flours (wheat, maize, and barley) used. Include a detailed discussion on the biochemical and physical changes that occur during bread making?

Q9. Explain the milling process for rice in detail?

Q10. Differentiate between wet milling and dry milling of corn?