

CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM – GOA

POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)

M.Sc. (I) Food Technology (Semester II) Examination July 2021

FTO 101 CEREAL, LEGUME, AND OILSEED PROCESSING TECHNOLOGY

Max. Marks: 45

Duration: 2 hours

Date: 19th July 2021

INSTRUCTIONS:

1. All questions in **Section I** are compulsory.
 2. Answer **any 3** questions from **Section II**
 3. Figures on the right indicate maximum marks assigned to the question
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SECTION I

Q1. Define the following briefly (any three).

(3 × 1 mark = 3 marks)

1. Nixtamalization
2. Kilning
3. Refining
4. Fractionation
5. Scouring

Q3. Match the term to its apt description.

(6 × 0.5 mark = 3 marks)

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|---------------------|------|---|
| | i | Contact Insecticide applied before fumigation |
| a Grain Protectants | ii | Reversible fusion of starch granules |
| b Decortication | iii | Under condition of higher relative humidity |
| c Aeration | iv | Create regulations for food safety and quality management |
| d Moistening | v | Improves nutritional value of Oilseed meals |
| e Gelatinization | vi | Method for Detecting Insect Infestation |
| f NCCP | vii | Helps prevent migration of moisture in storage structures |
| | viii | Preventive insecticide applied to stored grain |
| | ix | Assists in expansion of international food trade |

Q2. Discuss any three of the following briefly:

(3 × 3 marks = 9 marks)

- a. Structural and compositional differences between cereal, oilseed and legume grains.
- b. Limitations of using Cereals as weaning foods.
- c. Increasing Iron content of High-phytate food products.
- d. Factors affecting different stages of Fumigation.
- e. Multiple products developed from Soybean.

SECTION II

- Q4. a.** Explain the relationship between moisture, temperature and relative humidity w.r.t. storage pests. (5)
b. How does the association between temperature and moisture affect physiology of food grains? (5)
- Q5. a.** Summarize the process of Parboiling and the impact on head rice yield (HRY). (6)
b. Elaborate on the effect of parboiling on nutritional and structural status of the grain. (4)
- Q6. a.** Discuss the importance of Hydrothermal conditioning as a pre-milling step. (4)
b. Differentiate between Germination and Fermentation as grain processing methods, emphasizing their influence on nutritional composition of the grain. (6)
- Q7. a.** Outline the process of extracting oil from an oilseed, highlighting the importance of each step. (8)
b. What value-added products can you create from the oilseed meal? (2)
- Q8. a.** Describe the need for fortification of food products. What factors should a food technologist have to consider when fortifying a food product with Vitamin A? (4)
b. Provide an example of a fortified cereal/legume based food product, and elaborate on relationship between the fortificant, the product components and cooking process. (6)
