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Pedagogical innovation: open source NPTEL Lectures

Pedagogical innovation through open-source NPTEL lectures provides students with free access to high-quality educational content from renowned institutions. This initiative fosters self-paced learning, enhances academic flexibility, and promotes knowledge sharing. It democratizes education, allowing learners worldwide to access expert-driven resources and deepen their understanding of various subjects.

The screenshot shows a web browser window displaying an NPTEL video course page. The page title is "NPTEL Video Course : NOC:Novel Technologies for Food Processing and Shelf Life Extension". The current lecture is "Lecture 35 - Rancidity".

Left Sidebar:

- DIGIMAT Assistive Technology Learning Platform
- YouTube Alternative for Streaming NPTEL in LAN
- Support DIGIMAT for a Distraction Free Learning
- Agriculture (31 Courses)**
- 1. NOC:Basic Crop Production Practices (BCPP)
- 2. NOC:GIS in Ag-Essentials and Applications
- 3. NOC:Integrated Pest Management (IPM)
- 4. NOC:Nutrition, Therapeutics and Health (NM)
- 5. NOC:Weather Forecast in Agriculture and Agro-advisory (WF)
- 6. NOC:ICT Basics
- 7. NOC:Momentum Transfer in Process Engg
- 8. NOC:Farm Machinery
- 9. NOC:Irrigation and Drainage

Center Content:

Hydrolytic (lipolytic) rancidity

- Hydrolysis of the ester linkage of the TG is the primary event.
- Caused by the agents like moisture, heat, light, alkali, acid, enzyme (lipase), etc.
- Results in the increase of FFA, mono & diglycerides content in the oils & fats.
- When alkali (NaOH or KOH) is the hydrolytic agent, the resultant fatty acid is converted into its Na or K-salt and soap formation takes place; the process is called "Saponification".
- Otherwise, the process is called "lipolytic" or "hydrolytic rancidity".
- Change in the flavour is mainly because of the increase in FFA content.
- Developed FFA depresses 'smoke point' & seriously affects cooking/frying qualities of the oils & fats.

Right Sidebar:

- Download DIGIMAT Lite Edition (for Local Videos)
- Special Offer for NPTEL Local Chapters, Libraries
- FOSS Trainer Powers Up 170 College Labs in TN
- Total NPTEL Video Lectures: 1,14,371**
- 1. Aerospace Engineering: 2,876
- 2. Agriculture: 1,664
- 3. Architecture: 1,246
- 4. Atmospheric Science: 121
- 5. Basic courses (Sem 1 and 2): 657
- 6. Biotechnology: 4,265
- 7. Chemical Engineering: 6,287
- 8. Chemistry and Biochemistry: 5,072
- 9. Civil Engineering: 9,151

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Assessment Innovation: Quiz Test

Assessment innovation through quiz tests promotes active learning and immediate feedback. Quizzes assess students' understanding in a fun, engaging way, reinforcing key concepts. They encourage retention, help identify knowledge gaps, and can be easily adapted for various learning environments, making assessments more interactive, efficient, and accessible for all students.

$\frac{15}{20}$

Roll No. 2101354

BHAI GURDAS INSTITUTE OF ENGINEERING AND TECHNOLOGY, SANGRUR
(Quiz)

Programme: B. Tech, Food Technology (4th Semester) Max. Marks= 20
Subject Title: Food Engineering Time: 1.00 hrs
Subject code: BTFT 224-19

1. What is the primary objective of food engineering?

- a) Preservation of food
- b) Optimization of food processing
- c) Enhancement of food safety
- d) All of the above

2. Which of the following is NOT a unit operation commonly used in food engineering?

- a) Filtration
- b) Distillation
- c) Evaporation
- d) Photosynthesis

3. What is the purpose of blanching in food processing?

- a) To enhance flavor
- b) To improve texture
- c) To deactivate enzymes
- d) To increase shelf life

4. Which heat transfer mechanism is primarily responsible for food pasteurization?

a) Conduction

b) Convection

c) Radiation

d) None of the above

5. What does HACCP stand for in food engineering?

- a) Hazard Analysis and Critical Control Points
- b) Heat Application and Cooling Control Principles
- c) Hygiene and Chemical Contamination Prevention
- d) High Accuracy in Cooking Control Procedures

6. Which of the following is NOT a common food preservation method employed in food engineering?

- a) Freezing
- b) Irradiation
- c) Carbonation
- d) Fermentation

7. What role does rheology play in food engineering?

- a) Study of heat transfer
- b) Study of fluid flow properties
- c) Study of microbial growth
- d) Study of food composition

8. What is the primary function of a heat exchanger in food processing?

- a) Mixing ingredients
 - b) Increasing pressure
 - c) Exchanging heat ✓
 - d) Separating solids from liquids
9. Which of the following is an example of a non-thermal food processing technique?
- a) Pasteurization
 - b) High-pressure processing ✓
 - c) Blanching
 - d) Freezing
10. What is the purpose of aseptic processing in food engineering?
- a) To remove impurities from food ✓
 - b) To extend shelf life without refrigeration
 - c) To enhance food flavor
 - d) To increase food texture
11. Which unit operation involves the removal of water from food products to extend shelf life?
- a) Freezing
 - b) Dehydration ✓
 - c) Filtration
 - d) Crystallization
12. What is the primary function of emulsifiers in food engineering?
- a) To increase shelf life

- b) To enhance flavor ✗
 - c) To stabilize emulsions
 - d) To improve texture
13. Which food engineering process involves the conversion of starches into sugars using enzymes?
- a) Fermentation
 - b) Hydrolysis ✓
 - c) Caramelization
 - d) Gelatinization
14. What is the primary purpose of packaging in food engineering?
- a) To increase product visibility
 - b) To enhance product flavor
 - c) To protect food from contamination ✓
 - d) To improve food texture
15. Which of the following is NOT a factor affecting food spoilage?
- a) Temperature
 - b) pH level
 - c) Oxygen concentration
 - d) Food color ✓
16. What is the primary role of a food engineer in the food industry?
- a) Marketing food products

- b) Designing food packaging
- c) Ensuring food safety and quality
- d) Conducting sensory evaluations

✓

17. Which type of reactor is commonly used in food engineering for microbial fermentation?

- a) Plug-flow reactor
- b) Batch reactor
- c) Stirred-tank reactor
- d) Packed-bed reactor

✓

18. What is the primary purpose of food fortification?

- a) To improve food texture
- b) To enhance food flavor
- c) To increase nutritional value
- d) To extend shelf life

X

19. Which food engineering process involves the removal of unwanted particles from liquids?

- a) Homogenization
- b) Sedimentation
- c) Distillation
- d) Clarification

✓

20. What is the primary objective of food process engineering?

- a) To develop new food products
- b) To optimize food manufacturing processes

✓