

**B. Sc. I (Semester II) Examination,  
FOOD PROCESSING AND PACKAGING  
Principles of Food Processing and Packaging - II  
(BFPT – 201)**

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**Q1. Define the following terms/ Answer in one sentence each (2 Mark)**

1. Define perishable food
2. Define food processing
3. Define functional food
4. Define pasteurization
5. Define food packaging
6. Define semi - perishable food
7. Define food Technology
8. Define manufactured food
9. Define homogenization
10. Define food labelling
11. Define Non - perishable food
12. Define Minimally processed food
13. Define ultrafiltration
14. Define food packaging
15. Define food labelling
16. Define food preservation
17. Define Plant food processing
18. Define fruit
19. Define Vegetable
20. Define animal food processing
21. Define Meat processing
22. Define Fish processing
23. Define Milk processing
24. Define Poultry processing
25. Define food processing industry

**Q2. Attempt any two of the following. (10 Mark)**

1. Elaborate fruit processing with one example.

2. Explain importance of food processing.
3. Explain various food packaging rules in India.
4. Explain Jam processing in detail.
5. Explain importance of food preservation.
6. Explain food labelling requirements in detail.
7. Explain Jelly processing in detail.
8. Explain in details the need for food processing and food preservation.
9. Explain different type of food packaging material used for food packaging.
10. Explain various sectors in food processing industries
11. Explain Vegetable processing
12. Explain Fish processing
13. Explain Milk processing
14. Elaborate scope and importance of Animal food processing
15. Explain food packaging

**Q3. Answer in short**

**(5 Mark)**

1. Write a short note on different sectors in food processing industries.
2. Explain Jam Processing
3. Write a short note on animal processing and requirement for the same.
4. Describe food packaging.
5. Write short note on scope of animal food processing industries.
6. Write a short note on Milk Processing.
7. Explain different classes of food based on their perishability.
8. Write a short note on Vegetable processing.
9. Write down the importance of food processing industries.
10. Explain different material that can be used for food packaging.
11. Describe Tetra Pak.
12. Write a short note on Meat Processing
13. Write a short note on future prospects of food processing.
14. Explain in detail Jelly processing.

15. Write a short note on scope of food processing.
16. Explain various food packaging rules.
17. Write a short note on poultry processing.
18. Write a short note on Fish processing.
19. Write a short note on food labeling
20. Write a short note on Packaging of food
21. Explain food processing Industry
22. Explain importance of food processing industry
23. Explain Future prospects of food processing industry
24. Explain the classification of food
25. Explain Jelly processing under fruit processing
26. Explain the need of plant food processing
27. Explain the need of animal food processing
28. Explain the requirement of food packaging
29. Explain perishable and semi perishable food
30. Explain non perishable food.

**B. Sc. I(Semester II) Examination**  
**FOOD PROCESSING & PACKAGING**  
**Food additives, contaminants and toxicology-II (BFPT-202)**

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**Q1. Define following term/answer in one sentence. (5×2=10)**

- 1) What are antibiotics
- 2) What is MSG
- 3) Which bacteria is responsible for disease tetanus?
- 4) Flavor enhancer
- 5) What is sucralose?
- 6) Food additives
- 7) Humectant
- 8) Emulsifier
- 9) Toxinosis
- 10) Stabilizers
- 11) GMO stands for-
- 12) Aflatoxin
- 13) What is LC50?
- 14) Indirect food additives
- 15) Direct food additive
- 16) What is LD 50?
- 17) Give any GMO food name.
- 18) What is benzoic acid?
- 19) Define sweeteners?
- 20) Anticaking agent
- 21) Antioxidants
- 22) Flour bleaching agent
- 23) Toxicology
- 24) Stabilizers
- 25) Thickening agents

**Q2. Answer the following (any two) (2x10 =20)**

- 1) What are the Flavor enhancer? Explain in detail their chemistry and functions in food.
- 2) What are stabilizers? Write in detail any two stabilizers used in food.
- 3) What are physical contaminants in food? Write detail explanation about indirect food contaminants.
  
- 4) Explain in detail anticaking agent.
- 5) What are sweeteners? Explain in detail artificial sweeteners.
- 6) What are food contaminants? Write detail explanation about Chemical and microbial contamination in food.
- 7) Explain in detail humectants.
- 8) What are sweeteners? Explain in detail chemistry and functions of nutritive sweeteners.
- 9) What are food contaminants? Write detail explanation about different food contaminants and food toxicants.
- 10) Explain in detail anticaking agent. and explain in detail artificial sweeteners.
- 11) What are food additives? Explain in detail humectants.
  
- 12) What are stabilizers? Explain the use of pectin as stabilizer in different food products.
- 13) What are stabilizers? Explain the use of agar as stabilizer in different food products.
  
- 14) Explain Indirect food additives. And the different ways of physical contamination
  
- 15) Explain in detail LD 50 and LC 50 values?

**Q3. Write short note (4x5 =20)**

- 1) Flour bleaching agent
- 2) Aflatoxin
- 3) Physical contamination
- 4) LD 50 value
- 5) Flavor enhancer
- 6) Thikening agent
- 7) Aspartame
- 8) Bacterial toxins
- 9) Flour bleaching agent
- 10) Sucralose
- 11) Thickening agent
- 12) LD 50 value
- 13) Food toxicants
- 14) Emulsifiers
- 15) Humectants
- 16) Chemical contaminants
- 17) LD 50 value
- 18) Microbial method for detection of food additives
- 19) Agar –agar stabilizer
- 20) Pectin stabilizer
- 21) Functions of emulsifiers
- 22) Mannitol
- 23) Difference between natural sweetener and artificial sweetener
- 24) Toxicology
- 25) Glutamic acid flavor enhancer.

**B.Sc. – I (Sem.-II) Examination, \_\_\_\_\_**  
**FOOD PROCESSING AND PACKAGING**  
**Food Microbiology -II (BFPT-203)**  
**Subject Code: 70013**

**Q1. Define /Answer in one sentence**

1. Pure Culture
2. Stain
3. Colony
4. Food Spoilage
5. Contamination
6. Monochrome staining
7. Isolation
8. Culture media
9. Food Poisoning
10. Chromogen
11. Incubation
12. Inoculum
13. Mixed culture
14. Cultivation
15. Inoculation
16. Culture
17. Serial dilution
18. Negative staining
19. Differential Staining
20. Acidic stain
21. Basic stain
22. Neutral stain
23. Staining Procedure
24. Food infection
25. Food intoxication

**Q.2 Long questions**

1. Explain in detail streak plate method.
2. What is Negative staining? Explain in detail negative staining.
3. Explain in detail Salmonellosis.
4. What is differential staining? Write in detail Gram's Staining.
5. Explain in detail Spread plate Method and add a note on serial Dilution.
6. What is Colony? Explain in detail colony characters.
7. Explain in detail Causes of food spoilage and add a note on Common signs of Food Spoilage.
8. What is Monochrome staining procedure? Write in detail Procedure, Mechanism and applications of Monochrome staining.
9. Difference between Food infection and Food intoxication add a note on Staphylococcal intoxication
10. Explain in detail Pour plate method.
11. What is differential staining? Write in detail acid fast Staining.
12. What is Stain? Explain in detail Classification of stain and basic steps involved in staining procedure
13. Write in detail Amylase production test and H<sub>2</sub>S Production.
14. Write in detail Casein hydrolysis test and Catalase test.
15. Explain in detail Sugar fermentation and Casein hydrolysis test

### **Q.3 Short Notes**

1. Classification of stain
2. Spread plate method
3. Colony Characteristics
4. Casein hydrolysis test
5. Sugar fermentation
6. Gram staining Procedure
7. Food intoxication
8. Streak Plate Method
9. Negative Staining Procedure
10. Serial Dilution
11. Gram staining Procedure
12. Staphylococcal intoxication
13. Pour plate method
14. Roll tube method



15. Four quadrant Method
16. Principle of Gram Staining
17. Basic Steps involved in staining procedure
18. Amylase production test
19. Catalase test
20. H<sub>2</sub>S Production
21. Difference between Food infection and Food intoxication
22. Spoilage of Milk
23. Common signs of Food Spoilage
24. Causes of food spoilage
25. Stain
26. Contamination of food from water
27. Mechanism of simple staining
28. Spread plate Method
29. Acid fast Staining procedure.
30. Salmonellosis

**B.Sc. – I (Sem.-II) Examination, \_\_\_\_\_**  
**FOOD PROCESSING AND PACKAGING**  
**Food Preservation-II (BFPT-204)**  
**Subject Code: 70014**

**Q.1. Answer in one sentence.**

1. What is food preservation?
2. Write any two disadvantage of thermal processing of food
3. What is hurdle technology?
4. Define bio-preservation
5. What is the long form of HPP?
6. What is radurization?
7. What is the principle of pulse electric field
8. Define-Homeostasis
9. Which method of food preservation is called as cold preservation?
10. What is microwave heating?
11. Define- Radiation dose
12. What is radappertization?
13. What is Ohmic heating?
14. What is food spoilage?
15. What is the basic principle of PEF?
16. Define-Rancidity
17. What is starch gelatinization?
18. What is the long form of PEF
19. Write any two applications of ohmic heating
20. Write any two example of bacteriocin
21. Write any two applications of HPP
22. What is bacteriocin?
23. What is infrared processing?
24. Write any two applications of microwave heating
25. What is plasma technology?

**Q.2 Long answer**

1. Explain in detail irradiation process.
2. What is Ohmic heating? Write in detail applications of Ohmic heating.
3. Write in detail principle and instrumentation of HPP.
4. What is HPP? Write in detail applications of HPP
5. Write in detail instrumentation and process of Ohmic heating
6. What is hurdle technology? Describe in brief potential hurdles in food preservation
7. What is microwave heating? Write in detail mechanism and application of microwave heating.
8. Describe in detail effect of ohmic heating on microorganism and nutrition
9. Describe in detail bio-preservation
10. What is pulse electric field? Write in detail principle and process of pulse electric field.
11. Write in detail principle and application of HPP
12. Write in detail secondary metabolite produced by lactic acid bacteria
13. What is cold plasma technology? Write in detail effect of cold plasma on microorganism
14. What is food irradiation? Explain in detail role of irradiation in inhibition of sprouting
15. What is infrared technology? Explain in detail role of infrared technology in food processing

### **Q.3 Short note**

1. Bacteriocins
2. Principle of hurdle technology
3. Radiation dose
4. Pulse electric field
5. Mechanism of microwave heating
6. Homeostasis
7. Metabolite produced by lactic acid bacteria
8. Radiation dose
9. Pulse electric field

10. Applications of microwave heating
11. Homeostasis
12. Effect of radiation on microorganism
13. Instrumentation of Ohmic heating
14. Basic aspects of hurdle technology
15. Role of irradiation on shelf life extension of perishable food
16. HPP process
17. Dose and effect of radiation on food
18. Different hurdles for food preservation
19. Instrumentation of PEF
20. Types of Radiation energy used for food irradiation
21. Effect of Ohmic heating on microorganism
22. Mechanism of infra red food processing
23. Role of food irradiation in shelf life extension of food
24. Application of infrared processing
25. Types of hurdles
26. Instrumentation of microwave heating
27. Effect of Ohmic heating on nutrition
28. Application of pulse electric field processing
29. Effect of food irradiation on sensory characteristics
30. Role of plasma in microbial inactivation

**B. Sc. I(Semester II) Examination**  
**FOOD PROCESSING & PACKAGING**  
**Food chemistry -II (BFPT-205)**

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**Q1. Define following term/answer in one sentence. (5×2=10)**

- 1) Food color
- 2) Vitamins
- 3) Minerals
- 4) Apoenzyme
- 5) Food chemistry
- 6) Food Flavor
- 7) Vitamins
- 8) Trace minerals
- 9) Enzyme
- 10) Taste
- 11) Enzyme
- 12) Holoenzyme
- 13) Vitamins
- 14) What is NAD?
- 15) What is MSG?
- 16) Food science
- 17) Food Technology
- 18) What is amylase?
- 19) What is lipase?
- 20) What is TPP?
- 21) What is pyridoxal phosphate?
- 22) What is role of PTH?
- 23) What is fluorosis?
- 24) What is Hyponatremia?
- 25) What is E number of turmeric?

**Q2. Answer the following (any two) (2x10 =20)**

- 1) Explain in detail vitamin B1 and vitamin A.
- 2) Explain in detail natural food colors.
- 3) What are enzymes? Give the detail classification of enzymes.
  
- 4) What are minerals? Explain the biochemistry of calcium and phosphorus.
- 5) Explain in detail fat soluble vitamins.
- 6) Explain the enzymes used in food industry.
  
- 7) What are minerals? Explain the biochemistry of sodium and magnesium.
- 8) Explain in detail classification of vitamins.
- 9) Explain the classification of enzymes.
- 10) Explain Characteristics of enzymes and give the details of class oxidoreductase
- 11) Explain Characteristics of enzymes and give the details of class Hydrolases
  
- 12) Explain Characteristics of enzymes and give the details of class Ligases
  
- 13) Explain in detail structure, role, sources and deficiency diseases of vitamin B12 and Vitamin B 5
- 14) Explain in detail structure, role, sources and deficiency diseases of
- 15) vitamin B1 and  
Vitamin B 2
- 16) 15 )Explain  
biochemistry of sodium and potassium minerals

**Q3. Write short note (4x5 =20)**

- 1) Mechanism of taste stimulation.
- 2) Vitamin B3
- 3) Calcium.
- 4) Zinc.
- 5) Artificial food color.
- 6) Proteases.
- 7) Sweet taste
- 8) Vitamin B2
- 9) Oxidoreductase.
- 10) Curcumin
- 11) Vitamin B12
- 12) Annatto
- 13) Food flavors
- 14) Amylase
- 15) Iron
- 16) Tartrazine
- 17) Potassium
- 18) Betanin
- 19) Sour taste
- 20) Lipase
- 21) Proteases
- 22) Allura red
- 23) Fast green FCF
- 24) Carotene
- 25) Sulfur

**DEPARTMENT FOOD PROCESSING & PACKAGING**  
**BFPT 206 Analytical Techniques II**

**Question Bank**

**Q.1 Define the following term/Answer in one sentence each.**

1. Define fluorimetry.
2. Define retardation factor.
3. Enlist the components of flamephotometer.
4. Expand HPLC.
5. In Electrophoresis, separation occurs on what basis?
6. Expand PAGE.
7. Enlist the components of flamephotometer.
8. Elaborate doublet state of electrons.
9. Define isoelectric point
10. Define fluorescence.
11. Define Chromatography.
12. Enlist the components in agarose gel electrophoresis.
13. Define Isoelectric Point
14. Enlist planer chromatography.
15. Give the formula for retardation factor.
16. Define Electrophoresis.
17. Enlist the two types of dye used in PAGE.
18. Name any two types of buffers used in Electrophoresis.
19. Define Doublet State of Electrons
20. Define phosphorescence.
21. What is meant by collisional deactivation?
22. Define Quenching.
23. Enlist any source of light in flurimetry.
24. Define Nebulizer.
25. Enlist two advantages of flamephotometer.
26. Write the role of aerosol modifier.
27. Enlist any two applications of flamephotometer.
28. Which element emits yellow light at 589nm?



29. What is a function of Monochromator?
30. Write any types of gel used in gel chromatography.

**Q 2. Answer the following in brief**

1. Explain in detail construction, working and applications of Flamephotometer.
2. Write the principle of chromatography and explain in brief Thin Layer Chromatography with its advantages.
3. Define Electrophoresis. Describe Paper electrophoresis and its applications.
4. Define Electrophoresis. Explain in brief agarose gel electrophoresis with applications.
5. Explain the principle, construction and working of fluorimeter.
6. Define adsorption. Describe Ion Exchange Chromatography with applications.
7. Describe in detail the SDS- polyacrylamide gel electrophoresis with applications.
8. Elaborate the fluorimetric determination of thiamine.
9. Describe the HPLC in brief with applications.
10. Define chromatography. Explain in brief affinity chromatography.
11. What is adsorption? Describe Ion Exchange Chromatography.
12. Explain in brief the Paper Chromatography.
13. Illustrate the construction and working of Fluorimeter.
14. Describe Affinity Chromatography in brief with applications.
15. Write the principle of chromatography and explain its applications in detail.
16. Explain Gas Liquid Chromatography.
17. What is Electrophoresis? Explain Isoelectric Focusing in brief.
18. Define electrophoresis. Write in detail types of electrophoresis.
19. Explain in detail Size Exclusion Chromatography.
20. Explain in detail principle and instrumentation of Flamephotometer.
21. Explain Fluorimetric determination of riboflavin.

- 22.Explain Column Chromatography with applications.
- 23.Explain the Adsorption and Partition chromatography.
- 24.Write the principle and instrumentation of fluriometry.
- 25.Explain in detail the classification of Chromatography.

**Q3. Write a Short on**

1. Instrumentation of Fluorimetry
2. Adsorption Chromatography
3. Isoelectric Focusing
4. Application of Electrophoresis
5. Working of Fluorimetry
6. Classification of Chromatography.
7. Working of flamephotometer.
8. Factors affecting electrophoresis
9. Construction of Flamephotometer
- 10.Partition Chromatography
- 11.Starch Gel Electrophoresis
- 12.Affinity Chromatography
- 13.Construction of Flamephotometer
- 14.Gel Electrophoresis
- 15.Applications of Fluorimetry
- 16.Applications of Flamephotometer
- 17.Partition Chromatography
18. Components of Agarose gel electrophoresis
19. Applications of Electrophoresis.
- 20.Column Chromatography
- 21.Principle of Electrophoresis
- 22.Polyacrylamide Gel Electrophoresis
23. Difference between SDS PAGE and Native Page
- 24.Affinity Chromatography
- 25.Instrumentation of Falmephotometer

26. Paper Chromatography
27. Principle of Chromatography
28. Gel Chromatography
29. Types of Electrophoresis
30. Gas Chromatography

**B. Sc. I (Semester II) Examination**  
**FOOD PROCESSING & PACKAGING**  
**Human Nutrition-II (BFPT-207)**

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**Q1. Define following term/answer in one sentence. (5×2=10)**

- 1) Infant
- 2) Nutrition
- 3) Meal planning
- 4) Dietetics
- 5) Anemia
- 6) Food
- 7) Weaned food.
- 8) Role of Estrogen hormone in lactating women.
- 9) Food pyramid.
- 10) Adolescents.
- 11) Expectant mother
- 12) Balanced diet
- 13) Lactating women
- 14) Vegetarian meal
- 15) Obesity
- 16) Packed lunch
- 17) Preschooler
- 18) School lunch program
- 19) Underweight
- 20) Therapeutic diet
- 21) Non vegetarian meal
- 22) Senior citizen
- 23) Dietician
- 24) RDA
- 25) ICMR

**Q2. Answer the following (any two) (2x10 =20)**

- 1) Describe the causes, risk factors and dietary management of underweight .
- 2) Describe the Nutritional requirements of infants.
- 3) Explain in detail school lunch programmes with objectives of feeding programmes.
- 4) Describe in detail planning of balanced diet and Principles of planning diet.
- 5) Describe Nutritional requirement of lactating women.
- 6) Describe Food requirement and dietary guidelines of preschool children.
- 7) What is therapeutic diet? Describe introduction, principles and classifications in detail.
- 8) Describe the Nutritional requirements of Expectant mother.
- 9) Explain the food requirements of lactating women
- 10) Explain the food requirements of infants.
- 11) Explain the food requirements of Expectant mother.
- 12) Describe clinical nutrition and diet therapy in detail.
- 13) Explain causes, risk factors and dietary management of obesity.
- 14) Describe the Nutritional requirements of infants and lactating women.
- 15 ) What is balanced diet? Describe the classification of balanced diet and factors affecting balanced diet.

**Q3. Write short note (any four) (4x5 =20)**

- 1) Causes of underweight.
- 2) What is dietitian? Write short note on classification, ethics and responsibilities of dietitian.
- 3) Anaemia in different age group.
- 4) Food requirements of old age.

- 5) What is Expectant mother? Explain pre-conceptual Nutrition
- 6) Define Infant and Explain the food requirements of Infants.
- 7) Planning balanced diet.
- 8) Explain food pyramid with diagram..
- 9) Nutrition related problems of pre-schoolers.
- 10) Define planning and Explain Principles of planning diet.
- 10) mid-day meal programme for school children.
- 11) Packed lunches
- 12) Explain the role of school authorities in maintaining health of children.
- 13) Causes of Anaemia in different age group.
- 14) Packed lunches.
- 15) Causes of Obesity
- 16) Food requirements of infants.
- 17) Food pyramid with neat digram.
- 18) Dietary management of obesity.
- 19) Role of hormones in milk production in lactating women.
- 20) Dietary management of anemia.
- 21) Nutrition related problems during old age.
- 22) Dietary management underweight.
- 23) Nutrition related problems of old age.
- 24) Nutritional requirement in pre-school children.
- 25) food requirement in pre-school children.
- 26) Nutritional requirement in school children.
- 27) Diet related problem
- 28) Importance of breakfast.
- 29) Dietary guidelines for school children.
- 30) Define colostrum and Hind milk.

**B.Sc. I (Sem.-II) Examination**  
**FOOD PROCESSING AND PACKAGING**  
**Food Packaging-II (BFPT 208)**  
**Subject Code: 70010**  
**Question Bank**

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Ques.: 1. Define following term/Answer in one sentence.

1. Write down long form of WVTR
2. Define Composting
3. Define process-ability
4. Enlist factors affecting the shelf life tests
5. Give examples of thermoplastic polymers
6. Write down long form of OTR
7. Define Landfilling
8. Define process-ability
9. Write down the properties of plastics
10. Give examples of thermoset polymers
11. Define Water Vapor Transmission Rate
12. Define Recycling
13. Define Oxygen Transmission Rate
14. Write down the properties of plastics
15. Define thermoset polymers
16. Enlist types of foods
17. What are Perishable foods
18. What are Semi-perishable foods
19. What are non-perishable foods
20. Give examples of Perishable foods
21. Give examples of non-perishable foods
22. Give examples of Semi-perishable foods
23. Define Predictive Microbiology test for Shelf life
24. Define Shelf life of food

25. Give the examples of Thermo-polymer and Thermoset polymer

Ques.: 2. Attempt any two of the following.

1. Explain in detail processing methods for plastics
2. Illustrate the methods for shelf life determination
3. Explain in detail classification and types of oxygen absorbents
4. Explain in detail processing methods for plastics
5. Illustrate the methods for shelf life determination
6. Explain in detail General requirements of Food Labeling
7. Explain in detail Plastic Banned in India
8. Explain in detail General requirements of Food Labeling
9. Illustrate the methods for shelf life determination
10. Explain in detail any three methods of plastic converting
11. Explain in detail problems related to food Packaging and Labeling
12. Explain in detail General requirements of Food Packaging
13. Explain in detail Factors affecting the shelf life determination
14. Explain in detail Types of polymers and their applications
15. Explain in detail Polyethylene, Polypropylene and PVC polymers in detail

**Que.3. Attempt any four of the following.**

1. Give short note on Plastic Banned in India
2. Write down the classification and properties of plastic
3. Tests for flexible packaging material
4. Give short note on Polyethylene
5. Write down the General requirements of food labeling
6. Illustrate the methods used for waste management in food packaging
7. Tests for flexible packaging material
8. Give short note on types of polymers
9. Write down the types of oxygen absorbers



10. Illustrate the methods used for waste management in food packaging
11. Give short note on processing methods for plastics
12. Give short note on oxygen absorbers
13. Predictive Microbiology tests for Shelf life evaluation
14. Challenge Testing for shelf life evaluation
15. Polyethylene and Polypropylene
16. Sampling for shelf life evaluation
17. Problems associated with food labeling
18. Problems associated with food packaging
19. Recycling and Composting methods for waste management
20. Thermoplastic and Thermoset plastics
21. General requirements of Food Packaging
22. Polypropylene and PVC
23. Any two methods of polymer conversion
24. Give a short on PE and PET
25. Combustion and Landfilling methods of Waste management