

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS-UG)

Food Technology

FTL 6B 18—TECHNOLOGY OF FRUITS, VEGETABLES, SPICES AND PLANTATION CROPS

(2019 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer atleast ten questions.**Each question carries 3 marks.**All questions can be attended.**Overall ceiling 30.*

1. Why is lacquering done ?
2. Lycopene turns ————— when it comes in contact with iron.
3. What is chilling injury in fruits and vegetables ?
4. Mention any two well recognized types of pectolytic enzymes.
5. What is the purpose of blanching ?
6. What is filter coffee ?
7. Why does blackening occur in pickles ?
8. What are cordials ? Explain in 2-3 lines.
9. What are the objectives of roasting cocoa beans ?
10. What is conching in chocolate manufacturing process ?
11. The main flavouring compound in paprika oleoresin is —————.
12. The alkaloid ————— is the major constituent responsible for the biting taste of black pepper.
13. Hot break method gives better quality tomato paste. Justify.

14. Give *one* example each for spice derived from : (a) Leaf ; (b) Rhizome ; (c) Pod and (d) Kernel.
15. Differentiate between Candied and Glazed fruits.

(10 × 3 = 30 marks)

Section B

Answer atleast five questions.

Each question carries 6 marks.

All questions can be attended.

Overall ceiling 30.

16. What is black neck defect ? How can it be prevented ?
17. With the help of a flow diagram explain the steps in drying of apples.
18. Explain the changes that take place during the fermentation of cocoa beans.
19. Differentiate between enzymatic and non-enzymatic browning.
20. What are the environmental factors affecting the postharvest quality of fruits and vegetables ?
21. Illustrate green tea tea processing by Chinese OR Japanese process using a flow chart.
22. Explain any *three* defects in jelly.
23. With the help of a graph, represent the respiration rate of a climacteric fruit during different stages of growth.

(5 × 6 = 30 marks)

Section C

Answer any two questions.

Each question carries 10 marks.

24. Explain controlled and modified atmospheric storage of fruits.
25. Elaborate on the steps involved in coffee processing.
26. What are oleoresins ? Give details for the manufacture of ginger oleoresin.
27. Explain the preparation of grapefruit juice with the help of a flow chart.

(2 × 10 = 20 marks)

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS—UG)

Food Technology

FTL 6B 17—FOOD SAFETY, FOOD LAWS AND REGULATIONS

(2019 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer at least ten questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 30.*

1. What is FAO ?
2. Give examples of chemical contaminants of food.
3. What are the different types of adulterants of food ?
4. What is cluster sampling ?
5. Define CCP.
6. What are the physical hazards that can affect food safety ?
7. Differentiate between sanitization and sterilization.
8. Differentiate between low risk food and high risk food.
9. What is mean by GHP and its purpose ?
10. Define danger zone.
11. What is SSOP ?
12. How can you detect water in milk ?
13. What is BIS ?
14. What is FPO ?
15. Expand HACCP, CAC, FSSAI, CIP.

(10 × 3 = 30 marks)

Turn over

Section C

*Answer at least **five** questions.*

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. Write short notes on food safety and standards act, 2006.
17. Explain CAC.
18. What is AGMARK, mention its objectives and how is it different from FSSAI ?
19. What are the properties of a good sanitizer ?
20. Importance of personal hygiene in food safety.
21. Write short notes on common adulterants used in milk and the test used to detect them.
22. Write short notes on ISO22000.
23. Explain the different types of probability sampling.

(5 × 6 = 30 marks)

Section C

*Answer any **two** question.*

Each question carries 10 marks.

24. What is HACCP and explain the steps involved in HACCP ?
25. List out the suggestions for improving street food practices.
26. Explain about three bucket method.
27. Explain MAP. List out its benefits and limitations.

(2 × 10 = 20 marks)

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS—UG)

Food Technology

FTL 6B 16—TECHNOLOGY OF ANIMAL FOOD

(2019 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer at least ten questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 30.*

1. What is lyophilization ?
2. Differentiate between MAP and vacuum packaging.
3. What is singeing ?
4. What is scalding ?
5. Enlist the role of antioxidants in sausage making.
6. What do you meant by artery pumping in curing of meat ?
7. Write in short about the structure of hide.
8. What is bating ?
9. What is wet salting of hide ?
10. Explain briefly about the dry packing of egg.
11. What do you mean by shape index of egg ?
12. Enlist the uses of gelatin.
13. What is Isinglass and its uses ?
14. Difference between bacon and ham.
15. What are the uses of fish ensilage ?

(10 × 3 = 30 marks)

Turn over

Section B

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. Write a short note on hot smoking.
17. Write a short note on chemical preservation of meat.
18. Discuss about the importance of thawing of frozen meat.
19. Write about the grading of skin and hides.
20. Write about BIS standards of grading of egg.
21. Discuss about the composition and uses of fish meal.
22. Write a note on PM inspection of carcass.
23. Write a note on common defects in cured meat.

(5 × 6 = 30 marks)

Section C

Answer any two questions.

Each question carries 10 marks.

24. What are the methods of stunning ? Explain each briefly.
25. Briefly discuss about the steps in sausage preparation.
26. Write an essay on external qualities of egg.
27. Write in detail about processing of surimi.

(2 × 10 = 20 marks)

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS—UG)

Food Technology

FTL 6B 15—DAIRY TECHNOLOGY

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. Enlist the uses of butter.
2. What is pasteurization of cream ?
3. What is neutralization of cream ?
4. What is reconstituted milk ?
5. What is pasteurization of milk ?
6. What is flavoured milk ?
7. What is kefir ?
8. What is whey powder ?
9. What is soft curd milk ?
10. Write advantages of frozen concentrated milk.
11. Enlist different types of freezers used in ice-cream preparation.
12. Enlist the theories of churning.

(8 × 3 = 24 marks)

Section B

*Answer at least five questions.
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.*

13. Explain different methods of salting in butter preparation.
14. Properties of detergents used in dairy plant sanitization.
15. Write Advantages of HTST pasteurization.
16. Write the principle, advantages of spray drying system of milk.
17. What are the factors influencing freezing time of ice-cream ?
18. Describe the ideal properties of dairy plant sanitizer and give examples of sanitizers used.
19. What is over-run of ice-cream ? Explain.

(5 × 5 = 25 marks)

Section C

*Answer any one question.
The question carries 11 marks.*

20. Give classification of ice-creams.
21. Explain manufacture of cottage cheese with the help of flow chart.

(1 × 11 = 11 marks)

SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, MARCH 2022

Food Technology

FTL 6B 18—TECHNOLOGY OF FRUITS, VEGETABLES, SPICES AND PLANTATION CROPS

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. Saffron contains crocin. True or false.
2. Major component of cocoa bean is _____.
3. Freeze drying is an economical process. True or false
4. Eugenol is a flavour compound present in Allspice and cloves. True or false.
5. Pin heads are a grade of black pepper. True or false.
6. The presence of simple sugar differentiates fruit from a vegetable. True or false.
7. Bleaching is an oxidation process. True or false.
8. Sprouting of onion and garlic can be inhibited with low doses of irradiation. True or false.
9. Name any *two* preservatives used in fruit products.
10. _____ is the unit of irradiation.

(10 × 1= 10 marks)

Part B*Answer any five questions.**Each question carries 2 marks.*

11. Mention the fssai specifications for tomato sauce.
12. Mention at least *four* different grades of black pepper in India.
13. Briefly explain non-enzymatic browning in fruit products.

Turn over

14. List the defects in vegetable pickles.
15. List the bleaching agents used for bleaching of cardamoms.
16. What is Scoville scale ?
17. Name atleast *two* spices obtained from the family of *Zingiberaceae*.

(5 × 2 = 10 marks)

Part C

*Answer any six questions.
Each question carries 5 marks.*

18. Discuss various fermentation methods involved in cocoa bean processing.
19. Explain various processing and extraction steps involved in the production of value-added products from cardamom.
20. What is white pepper ? Explain any *one* method involved in preparing white pepper in detail.
21. Draw the general enzymatic browning reaction in fruits and vegetables with all reactants and products.
22. Explain the principle behind freeze-drying. Mention the advantages of freeze-dried fruits and vegetables.
23. Briefly explain the role of pectin in the preparation of fruit jam. Draw the general structure of pectin.
24. Explain the sulphuring process of grapes. Mention the fssai regulations related to the final product.
25. List out the general maturity indices for fruits and vegetables.

(6 × 5 = 30 marks)

Part D

*Answer any two of the following.
Each question carries 15 marks.*

26. Describe the processing steps in the production of a mixed fruit squash from jackfruit, mango and banana fruits.
27. Explain the steps involved in the production of turmeric powder from fresh turmeric with a flow chart.
28. Explain the steps involved in the production of tomato ketchup from fresh tomatoes with a flow chart. Mention the specification of the tomato ketchup.
29. Briefly describe the brines used in the canning of fruits and vegetables. Explain the processing steps involved in the canning of mixed vegetables containing peas and carrot.

(2 × 15 = 30 marks)

SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022

Food Technology

FTL 6B 17—FOOD SAFETY, REGULATIONS AND PACKAGING

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all the questions.*

Multiple choice :

1. AGMARK stands for _____.
2. Expand SSOP.
3. _____ is a common adulterant used in sugar.
4. Food safety and standard authority of India was established in the year _____.
5. LDPE stands for _____.
6. MAP stands for _____.
7. _____ is the process used to smoothen the surface of paper and give it glossy finish.
8. CIP stands for _____.
9. ISO 22000 represents _____.
10. Silica for glass making is derived from _____.

(10 × 1 = 10 marks)

Part B*Answer any five questions.*

11. Write about the functions of packaging.
12. What do you mean by physical hazard with example ?
13. What is active packaging ?
14. Write about the sampling procedure.
15. What is controlled atmospheric packaging ?
16. Write the regulations of GMP.
17. Write about high risk and low risk food.

(5 × 2 = 10 marks)

Turn over

Part C

Answer any six questions.

18. Write about the principles of HACCP.
19. Write about any five adulterants and tests used in the food materials with examples.
20. Briefly discuss about Food allergens.
21. Write a note on aseptic packaging.
22. Write the requirements of SSOP.
23. Write about the biodegradable packaging.
24. Write about the FAO standards.
25. Explain about the properties of glass packaging material.

(6 × 5 = 30 marks)

Part D

Answer any two of the following.

26. What are the high risk and low risk foods ? Discuss the significance of food safety and hygiene.
27. Write about the packaging evolution, function and design of the packaging materials used in food.
28. Write briefly about the Food safety and quality management standards such as HACCP, GMP, GHP and ISO standards.
29. Briefly write about the different packaging materials and techniques used in food.

(2 × 15 = 30 marks)

SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, MARCH 2022

Food Technology

FTL 6B 16—DAIRY TECHNOLOGY

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

1. Write down the importance of phosphatase test.
2. Mention a dairy product with water in oil emulsion.
3. Density of milk is higher than water. True or false.
4. What is A1 and A2 milk ?
5. Are the standards for different types of milk same across the country ?
6. Most of the casein protein in milk is in the form of casein micelles. True or False.
7. Ghee contains cholesterol. True or false.
8. Cheddar cheese can be prepared instantly. True or false.
9. Milk can contain traces of urea in it. True or false.
10. Milk fat contains 100% saturated fatty acids. True or false.

(10 × 1 = 10 marks)

Part B

*Answer any five questions.
Each question carries 2 marks.*

11. Why is the boiling point of milk higher than water ?
12. What is the difference between mixed and recombined milk ?
13. Why does milk coagulate during curd preparation, briefly explain the reason ?
14. Does panner (cottage cheese) contain significant amount of milk fat ?
15. What is ash content in clarified butter ?
16. What is UHT milk and write down its processing conditions ?
17. What is the application of 254 nm UV light in dairy industry ?

(5 × 2 = 10 marks)

Turn over

Part C

*Answer any **six** questions.
Each question carries 5 marks.*

18. What is whey and it is produced in the dairy industry ?
19. Write the fat composition of homogenized, standardized, toned, full cream and double toned milk.
20. In a dairy, soured milk is used mistakenly for the production of ice cream instead of good quality milk. Will it affect the quality of ice cream ? Justify your answer.
21. Explain the steps involved in the production of cottage cheese.
22. Is lactose a reducing sugar? Explain your answer with its structure.
23. List the important physical properties of milk and explain two of them with their respect to product development or its shelf-life.
24. Describe about CIP and its importance in dairy industry.
25. List at least three enzymes naturally present in milk and mention their role.

(6 × 5 = 30 marks)

Part D

*Answer any **two** of the following.
Each question carries 15 marks.*

26. Describe general processing of probiotic yoghurt along with its composition and ingredients. If any food additive is used, specify its role.
27. Describe the importance of dairy plant sanitation along with the process.
28. Describe general processing of milk in detail with reference to any one of the following product. Skim milk powder or whey or recombined milk.
29. Explain the processing steps involved in flavoured milk production.

(2 × 15 = 30 marks)

SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022

Food Technology

FTL 6B 15 (E)—FOOD ENGINEERING

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. Dry ice is known as :
 - a) Water in solid form.
 - b) Solid CO₂.
 - c) Solid NH₃.
 - d) Neon.
2. Driving force for heat is :
 - a) Temperature difference.
 - b) Pressure difference.
 - c) Energy difference.
 - d) None of the above.
3. The deposition called fouling is happened in _____ heat exchanger.
 - a) Plate heat exchanger.
 - b) Scraped surface heat exchanger.
 - c) Tubular heat exchanger.
 - d) Shell and tube heat exchanger.
4. The expansion of refrigerant through expansion valve follows :
 - a) Convection.
 - b) Conduction.
 - c) Radiation.
 - d) Infiltration.

Name the following :

5. Temperature and time combination for LTLT pasteurization is _____.
6. Which evaporator is having more steam economy ?
7. What is the nature of fluid if the curve between shear stress and shear rate are not linear ?
8. What is the equation of freezing time by planks.

Turn over

Fill in the blanks :

9. An example for contact type heat exchanger is _____.
10. In fluidized bed dryer, _____ velocity of the air is maintained.

(10 × 1 = 10 marks)

Part B

Answer any five questions.

Each question carries 2 marks.

11. Differentiate shear stress and shear rate.
12. What is called boiling point elevation ?
13. What is meant by UHT Pasteurization ?
14. Define viscoelastic material.
15. Differentiate drier and evaporator.
16. Differentiate Newtonian and Non-Newtonian fluid.
17. Write about the derivation for Fourier's law of conduction.

(5 × 2 = 10 marks)

Part C

Answer any six questions.

Each question carries 5 marks.

18. Explain the working of tubular heat exchanger with diagram.
19. Explain about the raising film evaporator with diagram.
20. Write about fire tube boiler with diagram.
21. Write about the principle of freezing and freezing rate.
22. Differentiate quick freezing and slow freezing processes.
23. Explain about the different drying rate period involved in grain drying.
24. Write about the direct contact and indirect contact system of freezing.
25. Describe about the principle involved in Spray drier with neat sketch.

(6 × 5 = 30 marks)

Part D

Answer any two questions.

Each question carries 15 marks.

26. Describe in detail about the fluidized bed dryer and tunnel dryer with diagrams.
27. Explain about three fluid refrigeration's systems used in food industry.
28. Explain in detail about the types of evaporator with neat sketches.
29. Explain in detail about the classification of heat exchangers with neat sketches.

(2 × 15 = 30 marks)

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