

SECOND SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2021

Food Technology

FTL 2C 02—FOOD CHEMISTRY

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. What is Maillard reaction ?
2. Write about peptide bond.
3. What are essential fatty acids ? Give examples.
4. Define active site of an enzyme.
5. Write the structure of water.
6. Write a note on betalins.
7. Give an example for natural flavours.
8. Mention the role of flavanoids in flavour.
9. What is denaturation of protein ?
10. What are Disaccharides ? Give example.
11. What are the types of food emulsions ?
12. Define optimum pH.

(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 the role of pectic substances in the preparation of jam and jellies.
14. What are simple proteins ? Give examples.
15. What Rancidity ? Discuss its types,
16. How will you classify enzymes ?
17. Explain types of bound water.
18. What are Pigments ? Discuss with chlorophylls structure.
19. Explain the structure of flavanoids with example

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

20. What are Polysaccharides ? Explain about starch with structure.
21. What are the factors, which affects enzyme activity.

(1 × 11 = 11 marks)

SECOND SEMESTER (CBCSS—UG) DEGREE EXAMINATION, APRIL 2021

Food Technology

FTL 2B 03—FOOD MICROBIOLOGY—I

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. Find out the contributors of the following :
 - Who gave the name bacteria ?
 - Who found bacterial endospore ?
 - Who developed vaccine ?
 - Who is referred as Father of antiseptic surgery ?
 - Who found penicillin ?
2. Define Pasteurization and tyndallization.
3. Define a microscope and list its parts.
4. How bacterial staining techniques are classified ?
5. Answer the following questions related to resolving power :
 - i) Define resolving power.
 - ii) In a compound microscope, the objective lens has NA of 0.6 and the source lamp has the light of 550 nm wave length. Calculate the resolving power (RP).
6. Define transformation.
7. Define Archaea.
8. Define synchronous growth.
9. What is turbidostat and chemostat ?
10. Brief note on algal pigments.

11. If two different carbon sources are present in the same growth medium, what change will happen in growth curve ?
12. Define abiogenesis and biogenesis.

(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. Describe about the structure of bacterial cell wall and its composition, along with the diagram.
14. Difference between light microscope and electron microscope.
15. Differentiate between prokaryotes and eukaryotes.
16. What are the properties of a virus ?
17. What are the various sexual reproduction methods in fungi ?
18. Define algae and what is its role.
19. Lysogenic cycle in virus.

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

20. What are the different shapes and arrangement of bacteria ?
21. Give detailed note on SEM and TEM.

(1 × 11 = 11 marks)

SECOND SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
APRIL 2021

Food Technology

FTL 2B 03—FOOD MICROBIOLOGY—I

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

A. Objective type (Answer *all* questions). Each question carries 1 mark :

Multiple Choices :

- 1 Organisms that do not survive in at low levels of oxygen are called :
 - (a) Facultative aerobes.
 - (b) Anaerobes.
 - (c) Microaerophiles.
 - (d) Aerotolerant.
- 2 The cellular theory of immunity (phagocytosis) was given by :
 - (a) Paul Erlich.
 - (b) Martha Chase.
 - (c) Elie Metchnikoff.
 - (d) Richard Petri.
- 3 He was the first one to introduce “aseptic techniques” to prevent infections :
 - (a) Robert Koch.
 - (b) Oliver Wedell Holmes.
 - (c) Joseph Lister.
 - (d) Louis Pasteur.
- 4 Volutin granules are reserves of :
 - (a) Polyphosphates.
 - (b) Polysulphates.
 - (c) Lipids.
 - (d) Glycogen.

Name the following :

- 5 Organisms that can grow at highly acidic pH are called _____.
- 6 The “S” in the sedimentation constants 70S, 80S, etc. stands for _____.

Fill in the blanks :

- 7 A special glass covered dish to hold agar media is called _____.
- 8 Arrangement of single or cluster of flagella on each pole of the bacterial cell is called _____.
- 9 The protein coat of a virus is called _____.
- 10 _____ reproduce by budding.

(10 × 1 = 10 marks)

B. Short Answer type questions (Answer any *five* questions). Each question carries 2 marks :

- 11 Capsomeres.
- 12 Mesosomes.
- 13 Basidiospores.
- 14 Microscopic resolution.
- 15 Chemoautotrophs.
- 16 Endospores.
- 17 Bacterial transformation.

(5 × 2 = 10 marks)

C. Short Essay questions (Answer any *six* questions). Each question carries 5 marks :

- 18 Explain the working principle of a scanning electron microscope. How small of a sample can you look at, under the SEM ?
- 19 Describe Koch's postulates and his contributions to microbiology.
- 20 Write the structure of a Gram negative bacterial cell wall.
- 21 Write a note on the various methods of sexual reproduction in fungi
- 22 Differentiate between the lytic and lysogenic cycle of A, phage. Draw a neat diagram.
- 23 What is tyndallization ? Write about the various methods of sterilization.

- 24 Write a note on chemotrophy in bacteria.
- 25 Draw a neat diagram of a yeast cell and identify all its components. Indicate the composition of its cell wall.

(6 × 5 = 30 marks)

D. Essay questions. Answer any *two* questions. Each question carries 15 marks :

- 26 Describe in detail bacterial growth curve. Compare continuous *vs* synchronous cultures of bacteria.
- 27 Describe the different physical, chemical and biological factors affecting the growth of micro-organisms.
- 28 Write about the composition and morphology of viruses ? How does lamda phage replicate ?
- 29 Describe in detail various modes of gene transfer in bacterial cells.

(2 × 15 = 30 marks)