



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI - 600 034

M.Sc. DEGREE EXAMINATION - BIOTECHNOLOGY

THIRD SEMESTER - NOVEMBER 2014

FP 3875 - FOOD PROCESSING TECHNOLOGY

Date : 10/11/2014
Time : 09:00-12:00

Dept. No.

Max. : 100 Marks

PART - A

(20 marks)

Answer all the questions

I. Choose the best answer:

(5 x 1 = 5 marks)

- (1) Milk kefir grains are live active cultures consisting of _____.
(a) yeast (b) bacteria (c) fungi (d) yeast and bacteria
- (2) The food is packed between flat, hollow, refrigerated metal plates in _____.
(a) immersion freezing (b) plate freezing (c) blast freezing (d) fluidized bed freezing
- (3) A _____ is a high power microwave oscillator in which the potential energy of an electron cloud near the cathode is converted into radiofrequency energy
(a) magnetron (b) prontosil (c) projectron (d) neutronium
- (4) Separation process in which a microporous hydrophobic membrane separates the two aqueous solutions is _____.
(a) Osmotic membrane distillation (b) freeze concentration (c) microfiltration (d) crystallization
- (5) Pulse with highest protein content and could be a substitute for meat is _____.
(a) Kidney beans (b) Red beans (c) Soyabean (d) Peas

II. State whether the following are true or false, if false give reason (5 x 1 = 5 marks)

- (6) Yoghurt starter cultures contain *Bifidobacterium lactis*.
- (7) Thermoplastic polymers are heavy in weight.
- (8) Microwave heating eliminates temperature gradients.
- (9) Addition of water helps to reduce the microbial load, thereby favouring an increase in the shelf life of liquid foods.
- (10) Parching is a process of adding pulse to four times its volume of preheated sand and roasting.

III. Complete the following:

(5 x 1 = 5 marks)

- (11) The breakdown of peptides into amino acids by the action of enzymes is called _____.
- (12) _____ properties are the aspects of food or other substances as experienced by the senses, including taste, sight, smell, and touch.
- (13) URP stands for _____.
- (14) The process which involves partial freezing of the product and removal of ice crystals, thus leaving behind all the non-aqueous constituents in the concentrated phase is _____.
- (15) Volatile components in oils are removed by _____, which uses steam injection under a high vacuum and temperature

IV. Answer the following, each within 50 words only

(5 x 1 = 5marks)

- (16) Define the term lipolysis.
- (17) Write down the advantages of freezing.
- (18) What is meant by radurization?
- (19) List any four commercially available class II preservatives.
- (20) What is blanching? Give examples of food which are blanched.

PART – B

(5×8 = 40 marks)

**Answer the following questions, each in about 500 words only.
Draw diagrams wherever necessary.**

21(a) Describe heterolactic fermentation of glucose.

OR

(b) Discuss the various factors which play a role in microbial growth?

22(a) Give a short note on the IQF of marine products.

OR

(b) Briefly explain the freeze drying process.

23(a) What is retort processing of foods?

OR

(b) Briefly explain the different types of dryers used in storing food at high temperatures

24(a) What are the principles and types of food preservation?

OR

(b) Write short notes on different methods of membrane filtration.

25(a) Explain the role of enzymes in food industry.

OR

(b) Write short notes on homogenization.

PART – C

**Answer any TWO of the following questions, each in about 1500 words (2×20 = 40 marks)
Draw diagrams wherever necessary.**

(26) Give an elaborate account on all the unit operations done in food processing industry.

(27) Explain the following:

(i) Freeze concentration

(ii) Sterilization

(28) Why are crude oils refined? Explain the process of refining oils.

(29) Discuss in detail the role of hurdle technology in the preservation of food.