Total No. of printed pages = 6

END SEMESTER EXAMINATION – 2019

Semester – 3rd

Subject Code : FPT-301

INTRODUCTION TO FOOD

PROCESSING TECHNOLOGY

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Instructions :

1. *All* questions of PART–A are compulsory.

2. Answer any *five* questions from PART–B.

PART – A

Marks – 25

1. Fill in the blanks :   1×10=10

    (a) _____ protein is soluble in 50 to 90 percent
    ethanol.

    (b) The red pigment present in blood is _____ .

[Turn over

(c) The aim of sterilization is complete destruction of _____.

(d) Night blindness is caused due to deficiency of _____.

(e) Vitamin D is required for the absorption of _____ in mammals.

(f) Blanching is primarily carried out to inactivates the natural _____ in foods.

(g) Proteins present in milk are casein and _____ protein.

(h) _____ proteins consist of soluble gliadin and insoluble glutenin.

(i) _____ are the building blocks of proteins.

(j) _____ fatty acids cannot be synthesized by human body.

2. Write true or false :   1×10=10

(a) Developing new varieties of instant or convenience foods is an aim of food science and technology.

(b) The chemical components that maintain life and growth i.e. supply, build and repair tissues are called nutrients.

(c) In addition to the major nutrients, food contain natural or added minor constituents such as colourants, flavours, preservatives, toxins etc.

(d) Albumins are soluble in neutral salt-free water.

(e) Protein, fats and carbohydrates are energy yielding nutrients.

(f) Raw papaya is a good source of pectin.

(g) Foods are exposed to ionizing radiations during irradiation process.

(h) Dietary fibre can not be digested in the human digestive system.

(i) Glycogen is a reserve polysaccharide in human body.

(j) Lactose is a disaccharide composed of one glucose and one galactose molecule.

3. Choose the corrct answer :   1×5=5

(a) Water functions mainly as a

(i) carrier of nutrients and waste products

(ii) solvent to dissolve solutes

(iii) liquid medium for biochemical reactions

(iv) All of the above.

(b) The water activity value of pure water is

(i) 2   (ii) 1

(iii) 100   (iv) 0

(c) The available energy released by proteins is

(i) 5.7 k.cal/g   (ii) 4 k.cal/g

(iii) 9 k.cal/g   (iv) 4.1 k.cal/g

(d) Haemoglobin is

(i) Glycoproteins

(ii) Chromoproteins

(iii) Lipoproteins

(iv) Scleroproteins

(e) Dry basis moisture content can be represented as

(i) $\dfrac{W_w}{W_w + W_d} \times 100$ (ii) $\dfrac{W_w}{W_d} \times 100$

(iii) $\dfrac{W_w}{W_w + W_d}$ (iv) $\dfrac{W_w}{W_d}$

PART – B

Marks – 45

4. Answer the following questions :   3×3=9

(a) Write a note on classes or groups of carbohydrate.

(b) What is a triglyceride ? Explain with example.

(c) Write three properties of cellulose and hemicellulose.

5. Answer the following questions :   3×3=9

(a) What are trace elements and their different groups ?

(b) How does the minerals present in food determined ? Give two examples of trace elements and their importance in human.

(c) Give examples of three uses of enzymes in food processing.

6. Answer the following questions :   3×3=9

(a) What are omega-3 and omega-6 fatty acids ?

(b) Define rancidity. Explain the types of rancidity.

(c) How do you prevent rancidity ?

7. Answer the following questions : 3×3=9

   (a) Write three advantages of edible films and coatings.

   (b) Define preservatives.

   (c) Explain the mode of action of chemical preservative in food preservation.

8. Answer the following questions : 5+4=9

   (a) A batch of 1000 kg paddy was dried from 24% (wb) moisture content to a marketable moisture level of 14% (wb). Calculate the weight of paddy after drying and write the composition of the dried paddy.

   (b) Explain the relationship between pectin, sugar and acid in gelly formation.

9. Answer the following questions : 4½×2=9

   (a) Explain how high concentration of salt act as a preservative.

   (b) Discuss the major functions of packaging.

10. Discuss canning as a method of preservation by high temperature.   9

11. Describe the factors influencing the growth of microorganisms in food.   9

12. What is food spoilage ? Discuss the major causes of food spoilage.   9