

**Ref. No. : Ex/FTBE/T/313/2018**

**Name of the Examinations: B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING  
THIRD YEAR FIRST SEMESTER - 2018**

**Subject : FOOD PROCESS TECHNOLOGY- I**

**Time : 3 Hrs**

**Full Marks : 100**

**Part I (50 Marks)**

**Instructions : Use Separate Answer scripts for each Part**

**Answer Question No. 5 and any two from the rest.**

1. (a) With a neat diagram show the major cuts of pork. What is meant by noble cuts of meat? 5+5  
(b) What are the percentages and characteristics of bound water, immobilised water and free water in meat? What is meant by water binding capacity of meat? 7+3
2. Name any two pigments in meat along with their mode of formation, valence state of iron and colour. What is marbling in meat? What are the factors that accelerate the development of rancidity in meat? 4+2+14
3. (a) What role does sodium chloride play in the curing of meat? How nitrite can be toxic when used in the curing of meat? 3+5  
(b) How are massaging and tumbling done in the industry for curing meat? 12
4. (a) What is the probable origin of the idea of smoking of meat? How smoke can have preservative effect on meat? Which component of meat imparts attractive colour to meat and how? 2+3+2  
(b) What are the different types of casings used in making sausages? What are the steps in the preparation of a frankfurter? Which type of sausage has the longest shelf life and why? 4+7+2
5. Write short notes on : (Any Two)
  - (a) Net charge effect on water holding capacity of meat
  - (b) Connective tissue proteins in meat
  - (c) Importance of temperature of smoke generation
  - (d) Draw a sketch of the internal structure of an egg
  - (e) Chemical changes responsible for deterioration of eggs during storage. 5+5

[ Turn over

**B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR  
FIRST SEMESTER – 2018**

**Subject: FOOD PROCESS TECHNOLOGY-I      Time: Three Hours      Full Marks: 100**

**Use Separate Answer Scripts for Part I and Part II**

**Part II (Marks-50)**

**Question No.1** is Compulsory and answer any *three* questions from rest

1. What are the reasons of the following?

a) Fatty fish are never brined before freezing

b) Quick freezing is preferred over slow freezing 2.5+2.5=5

2. What is Surimi? How it is produced? How it is converted to Kamaboko? With a flow sheet explain how fish sauce is produced. 1+4+4+6=15

3. What is cold chain? What are the system used for the short, medium and long distance transportation of fish? 2+3+4+6=15

4. How the fish quality is assessed by physical and chemical methods? 7.5+7.5=15

5. During freezing of fish what are the pre and post treatments required and why?

What are the quality changes of fish during drying? 5+10=15

6. Write short notes on 5+5+5=15

i. Spoilage of canned fish

ii. Machineries used for making minced fish

iii. Isolation and use of fish gelatin