B TECH [FOOD TECHNOLOGY]
(SEM IV) THEORY EXAMINATION 2017-18
FOOD CHEMISTRY & NUTRITION

Time: 3 Hours   *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   2 x 7 = 14

a.   Define water activity.
b.   Classify bound water
c.   What do you understand by water holding capacity?
d.   What is Radiolysis?
e.   Define smoke point.
f.   What do you mean by hydrolytic rancidity?
g.   Define protein Isolates.

SECTION B

2.   **Attempt any *three* of the following:**   7x 3 = 21

a.   Discuss interaction of water with neutral groups capable of hydrogen bonding.
b.   Explain the changes occurring in oils during frying; Discuss the control measures for long term stability of frying oils.
c.   Explain the interaction of amino acid with water with the help of diagram.
d.   Enlist flavor compounds generated by heat treatment of foods.
e.   Define calorific value of food and how it can be determined

SECTION C

3.   **Attempt any *one* part of the following:**   7x 1 = 7

(a)   Discuss the relationship of water activity with stability food products.
(b)   Explain the formation of Melanoidin pigment in maillard browning.

4.   **Attempt any *one* part of the following:**   7 x 1 = 7

(a)   Define hydrogenation, & discuss the mechanism of hydrogenation of oils in detail.
(b)   Define Auto-oxidation, Discuss the factors affecting rate of Auto-oxidation.

5.   **Attempt any *one* part of the following:**   7 x 1 = 7

(a)   What do understand by denaturation of proteins? Discuss the physical agents responsible for the denaturation of proteins.
(b)   Discuss the process of gel formation in proteins and factors affecting it.

6.   **Attempt any *one* part of the following:**   7 x 1 = 7

(a)   Discuss the effect of temperature on stability of vitamin C.

(b)   Draw the structure of chlorophyll and explain the methods for preserving green colour of vegetables.

7.   Attempt any *one* part of the following: **7 x 1 = 7**

(a)   What do you understand by nutrition? Discuss under nutrition, over nutrition and mal-nutrition in detail.

(b)   Discuss the methods used for evaluation of protein quality.