CGPDTM
Patent
Examiner

Previous Year Paper
(Mains) Food Technology
Oct, 2015

105

Food Technology

TIME : **3** HOURS

MAXIMUM MARKS : **300**

INSTRUCTIONS :

1. *All questions are **compulsory**.*

2. *Question Paper may be divided into **4 (four)** Sections from **Section-A** to **Section-D** and carry marks as under :*

   a. ***Section - A*** *- Total **3** Questions having **two** parts, i.e. **(a) and (b)** each questions carries **12** marks × **3** Questions = Total **36** Marks.*

   b. ***Section - B*** *- Total **3** Questions having **two** parts, i.e. **(a) and (b)** each questions carries **20** marks × **3** Questions = Total **60** Marks.*

   c. ***Section - C*** *- Total **3** Questions having **two** parts, i.e. **(a) and (b)** each questions carries **28** marks × **3** Questions = Total **84** Marks.*

   d. ***Section - D*** *- Total **3** Questions having **two** parts, i.e. **(a) and (b)** each questions carries **40** marks × **3** Questions = Total **120** Marks.*

SECTION - A

(Each question is of **12** marks and each sub part **(a)** and **(b)** are of **6** marks each)

1 (a) What is the abbreviation, common name and systematic name of saturated fatty acids ?

  (b) Give acyclic structure of hexoses.

2 (a) Equipments used for sterilization of fruits in metal cans.

  (b) What are the hurdles used for preserving food in Hurdle technology ?

3 (a) What is moisture content on wet basis and moisture content on dry basis ? How to interconvert them ?

(b) A wet food product contains 70% water. After drying, it is found that 80% of original water has been removed. Determine (a) mass of water removed per kilogram of wet food and (b) composition of dried food.

SECTION - B

(Each question is of **20** marks and each sub part **(a)** and **(b)** are of **10** marks each)

4 (a) What are the factors affecting the growth of micro-organisms in foods ?

(b) What are the processes of producing wines ?

5 (a) Illustrate the freezing curves of the foods.

(b) Explain the process of butter manufacturing.

6 (a) Explain the mechanism and governing equations of conduction, convection and radiation.

(b) Five kilograms of ice at -10° C is heated to melt it into water at 0° C; then additional heat is added to vaporize the water into steam. The saturated vapors exit at 100° C. Calculate the different enthalpy values involved in the process. Specific heat of ice is 2.05 kJ/(kg K). Specific heat of water is 4.182 kJ/(kg K), latent heat of fusion is 333.2 kJ/kg, and latent heat of vaporization at 100° C is 2257.06 kJ/kg.

SECTION - C

(Each question is of **28** marks and each sub part **(a)** and **(b)** are of **14** marks each)

7 (a) Give brief process of fermented milk products.

   (b) Write a note on bacterial food poisoning - Botulism.

8 (a) What is the commercial process of jam manufacturing ?

   (b) What do you mean by clarification of juices ? What are the methods of juice clarification ?

9 (a) Define grinding and explain laws used to determine energy used in grinding.

   (b) Explain the characteristics and working of positive displacement pumps, jet pumps, air lift pumps, propeller pumps and centrifugal pumps, for transporting liquids.

SECTION - D

(Each question is of **40** marks and each sub part **(a)** and **(b)** are of **20** marks each)

10 (a) What is process of refining of edible oils ?

    (b) Discuss the structure of carotenoids.

11 (a) Explain the secondary structure of proteins.

    (b) What are the deficiency diseases caused by deficiency of vitamins in diet ?

12 (a) Explain the concepts of dynamic and kinematic viscosity.

    (b) Explain freeze drying process with the help of a schematic diagram. Also give drying time calculations for symmetrical freeze drying.

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