1 Mark Questions

1. The protein responsible for spongy structure in bread is
   (a) albumin (b) zein
   (c) gluten (d) gliadin

2. The factor most responsible for making a good ice cream is
   (a) water content (b) homogenization
   (c) emulsifying agent (d) mixing index

3. Listed below are some of the function of fats in the human nutrition. Identify the incorrect function.
   (a) Concentrated source of energy
   (b) Transport of oxygen to various organs
   (c) Absorption of fat soluble vitamins
   (d) Synthesis of cell membrane and hormones

4. During ripening of cheese by *Penicillium roqueforti* the characteristic aroma is because of
   (a) methyl ketones
   (b) aceto acetic acid
   (c) diacetyl
   (d) acetoin

5. Which of the following statement is not true in case of oxidative rancidity of fatty foods?
   (a) Peroxides and hydroperoxides are formed during auto-oxidation
   (b) Auto-oxidation is a complex chain reaction
   (c) The final breakdown products of auto-oxidation are aldehydes, ketones and alcohols
   (d) The reaction of brought about by an enzyme, called lipase

6. Which of the following group of characteristics is correct in respect of *Shigella* species found as food pathogen?
   (a) Gram positive, motile by gliding, spore forming cocci and transmitted by contaminated food
   (b) Gram negative, motile by flagella, spore forming bacilli and transmitted by contaminated water
   (c) Gram positive, non-motile, non-spore forming cocci and transmitted by contaminated air and water both
   (d) Gram negative, non-motile, non-spore forming and transmitted by fecal-oral route

7. The vitamins listed below in Group I with the associated diseases in Group II. Choose the correct option.

Group I	Group II
A. Thiamin	1. Pellagra
B. Nicotinic acid	2. Beri-beri
C. Folic acid	3. Scurvy
D. Ascorbic acid	4. Anaemia

Codes

	A	B	C	D		A	B	C	D
(a)	1	2	3	4	(b)	4	3	2	1
(c)	2	1	4	3	(d)	3	4	1	2

8. Which of the following conditions for the heat resistance of microorganisms is correct?
   (a) Psychrophiles < Mesophiles < Thermophiles
   (b) Psychrophiles > Mesophiles > Thermophiles
   (c) Thermophiles > Psychrophiles > Mesophiles
   (d) Mesophiles < Thermophiles < Psychrophiles

9. The solubility of sodium bicarbonate in water is 9.6 g/100 g at 20°C and 16.4 g/100 g at 60°C. If a saturated solution of sodium bicarbonate at 60°C is cooled to 20°C, the percentage of the dissolved salt crystallized out will be
   (a) 20.5 (b) 25.4
   (c) 41.5 (d) 45.2

10. Which one of the following statements is not true in terms of nutritive evaluation of proteins?
    (a) PER is defined as the live weight gain per unit weight of protein intake
    (b) 'Metabolic nitrogen' is the amount of nitrogen present in the faeces when a nitrogen free diet is fed to an animal

(c) Net protein utilization is a product of biological value and digestibility

(d) 'Chemical score' of a mixed protein diet can be calculated from the total amino acids present in the mixture

2 Marks Questions

11. A sugar syrup (density = 1040 kg/m^3 and viscosity = 1600×10^{-6} Pa.s) is required to be pumped into a tank (1.5 m diameter and 3 m height) by a 3 cm diameter pipe. If the liquid is required to flow under laminar conditions the minimum time to fill the tank with the syrup will be

(a) 192.9 h (b) 19.3 h (c) 38.6 h (d) 57.9 h

12. Match the following sauerkraut defects for their causative agents.

Group I	Group II
A. Soft kraut	1. Due to growth of bacteria, mould or yeast
B. Slimy kraut	2. Due to surface growth of *Torula* yeast
C. Rotted kraut	3. Bacterial growth does not initiate till last stage
D. Pink kraut	4. Rapid growth of *Lactobacillus cucumens* and *L. plantarum* specially at elevated temperature

Codes

	A	B	C	D		A	B	C	D
(a)	4	2	3	1	(b)	3	4	1	2
(c)	1	3	2	4	(d)	2	1	4	3

13. Match the following carbohydrates with their use in the food processing.

Group I	Group II
A. High amylose starch	1. White sauces in cook freeze operations
B. Pectin	2. Edible film for wrapping candies
C. Starch phosphates	3. As humectant in confectionary
D. Glucose	4. Setting agent in jams and jellies

Codes

	A	B	C	D		A	B	C	D
(a)	1	2	4	3	(b)	2	4	1	3
(c)	3	1	2	4	(d)	4	3	1	2

14. Match the food items and their principal flavouring agents given in the two Groups below.

Group I	Group II
A. Butter	1. Menthol
B. Orange	2. Limonene
C. Cloves	3. Eugenol
D. Mint	4. Diacetal

Codes

	A	B	C	D		A	B	C	D
(a)	3	2	4	1	(b)	2	3	1	4
(c)	4	1	3	2	(d)	4	2	3	1

15. Match the food items on group I with their colloidal nature on Group II.

Group I	Group II
A. Curd	1. Foam
B. Butter	2. Emulsion
C. Vegetable soup	3. Sol
D Whipped egg white	4. Gel

Codes

	A	B	C	D		A	B	C	D
(a)	2	1	3	4	(b)	4	3	2	1
(c)	4	2	3	1	(d)	3	4	1	2

16. In an actively growing (exponential phase) yeast culture, the cell concentration increased from 10^3 cells per mL to 10^7 cells per mL in 4 h. The doubling time of the yeast is

(a) 120 min (b) 30 min

(c) 18 min (d) 60 min

17. The steps followed in Gram's staining of microorganisms are

I. Washing with neutral organic solvent.

II. Counter staining with a contrast dye.

III. Staining with basic dye.

IV. Fixing the colour with a suitable mordant.

Identify the correct sequence.

(a) II → IV → III → I (b) I → II → III → IV

(c) II → I → IV → III (d) III → IV → I → II

18. A continuous dryer was used to dry 12 kg/min of a blanched vegetable containing 50% moisture (wet weight basis) to give a product containing 10% moisture. As the dryer could handle feed material with moisture content not more than 25%, a part of dried material was recycled and mixed with the fresh feed. The evaporation rate in the dryer will be

(a) 2.08 kg/min (b) 5.33 kg/min
(c) 3.33 kg/min (d) 2.93 kg/min

19. An enzyme has a K_m of 4.7×10^{-5}M and V_m is 22 micro moles per litre per min. The enzyme reaction is carried out at a substance concentration of 2×10^{-4}M. The initial reaction velocity for this enzyme catalyzed reaction will be

(a) 6.5 micro moles per litre per min
(b) 17.8 micro moles per litre per min
(c) 13.0 micro moles per litre per min
(d) 8.9 micro moles per litre per min

20. The F-value at 121.1°C, equivalent to 99.9999 per cent destruction of a strain of *Clostridium botulinum*, is 1.8 min. The D_o value (decimal reduction time at reference temperature) of the organism will be

(a) 10.8 min (b) 0.3 min
(c) 6.0 min (d) 0.2 min