B.Sc. (Honours) Agriculture Semester-III Examination, 2018

Course No: AEG-212 (Principles of Food Science and Nutrition)

Signature of Centre Superintendent

Roll No. : (in figure) _____ (in words) _____

Student Index No. _____ Regn. No. _____ of _____

Time : Two and Half Hours **Full marks : 60**

Questions are of value as indicated in the margin

Part - I
(Objective and Short Answer Type)
(Use only ball point pen)

Time : 30 minutes **Full marks : 20**

Note: 1. Answer in question paper itself.
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. **Choose the appropriate answer below:** 1×10=10

i) EDTA (Ethylene diamine tetra acetic acid) is a popular _____ agent used in food.
a) chelating b) colouring c) flavouring d) curing

ii) Total soluble solids (TSS) of food material can be expressed as _____
a) Brix b) microgram c) Newton d) Volume

iii) _____ is a saturated fatty acid.
a) Palmitic b) Oleic c) Linoleic d) Arachidonic

iv) Red colour of tomato due to presence of_____
a) Ascorbic acid b) Sugars c) Lycopene d) Proteins

v) _____ is present in liver and skeletal muscles of animals.
a) Dextrin b) Glycogen c) Starch d) Pectic substances

vi) _____ is a simple lipid.
a) Steroid b) Carotenoid c) Wax d) Phospholipid

vii) Drying temperature of the most food material in the ranges of _____
a) 10-20^{0}C b) 25-40^{0}C c) 45-70^{0}C d) 100-150^{0}C

viii) Which one of the following process as does not include removal of water.
a) Freeze concentration b) Microwave heating c) Irradiation d) Freeze drying

ix) Which of the following is not a vitamin?
a)Ascorbic acid b) Riboflavin c) Calcium carbonate d) Cyanacobalamin

x) Name of food preservative is _____
a)Ascorbic acid b) acetic acid c) calcium carbonate d) tartaric acid

2. **Answer the following:** 2.0×5=10.0

i) Low teperature preservation

ii) Why does bread give sweet taste on toasting?

iii) What is the effect of temperature on the enzyme catalyzed reaction?

iv) Short note on carbohydrates

v) Different types of vitamins

B.Sc. (Honours) Examination, 2018

Semester-III

Agriculture

Course No: AIN-211

(Principles of Food Science and Nutrition)

Part - II

(Descriptive Type)

Time : 120 Minutes **Full marks : 40**

Questions are of value as indicated in the margin

Answer *any four* questions

3. a) Write the properties of monosaccharides. 3+4+3=10
   b) Discuss briefly how water activity and oxidation-reduction potential affect the growth of microogranisms.
   c) Give the classification of fatty acids with at least two examples of each.

4. a) Show the structure of ice and water molecules through hydrogen bonding. Ice floats on water, justify this statement from its structural point of view. (3+2)+2+3=10
   b) i) Classify the proteins based on their composition and function.
   ii) Write a short note on 'Protein Denaturation'.

5. a) Write the function of minerals in food. Classify the minerals in foods based on micro-nutrients and macro-nutrients. (2+3)+5=10
   b) With a neat sketch describe the life cycle of miro-organisms.

6. a) Define the following terms with their Sl units. 5+5=10
   i)Density ii) Viscosity iii) Surface tension iv) Thermal conductivity v) Latent heat
   b) Explain a food processing method using appliation of heat.

7. a) Define rancidity in fat. Explain the mechanism of oxidative rencidity in fat. (1+3)+6=10
   b) Explain briefly spoilage of fresh and processed foods.

8. Write short notes on **any four** of the followings. 2.5×4=10
   a) Physical methods of food preservation
   b) Energy metabolism
   c) Menu planning for a normal diet
   d) Malnutrition
   e) Drying of foods

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