Answer Key for Review Questions

Introduction to Food Systems Science

Unit 1 − Answers

1. Production, manufacture, distribution, and marketing
2. True
3. Manufacturing
4. Allied
5. False
6. McDonald's, Pizza Hut, Kraft General Foods, CPC International, H.J. Heinz, Borden, Campbell Soup, Nabisco Brands, Coca-Cola, PepsiCo, Beatrice Companies, Ralston Purina or General Mills
7. Increased
8. low-markup

Unit 2 − Answers

1. B
2. Monosaccharides are the most basic unit of sugar and have six carbons being called hexoses or five carbons being called pentoses; Disaccharides are formed when two monosaccharides link together; Polysaccharides are formed when multiple monosaccharides are linked together.
3. False
4. Dietary fiber
5. Chains of amino acids joined by peptide bonds
6. False
7. G
8. False
9. A
10. Triglycerides, fatty acids, phospholipids, cholesterol
11. Polyunsaturated

12. Bile salts, membrane structure, myelin synthesis, vitamin D synthesis, steroid hormone synthesis
13. A, D, E, K
14. Cobalamin, ascorbic acid
15. Potassium, sodium, chlorine (chloride), sulfur
16. Iodine
17. Iron
18. Water

Unit 3 − Answers

1. Carbohydrates, protein, fat, minerals, vitamins and water.
2. Recommended Dietary Allowances; They are important because they are the levels of intake of essential nutrients considered to meet the known nutritional needs of all healthy persons.
3. True.
4. True
5. Ratios of essential amino acids; Amount of protein in the diet; Physiological state of the subject; Digestibility
6. Vitamins
7. Macrominerals and microminerals
8. False
9. C
10. Ingestion, digestion, absorption, elimination
11. Small intestine

Unit 4 − Answers

1. True
2. Using gravity and spinning, it forces the denser material to the outside of the container.
3. RO - Reverse osmosis, UF - ultrafiltration, MF -microfiltration
4. gravity, pumps
5. transfer, incorporation

6. To destroy microorganisms; To provide for a healthful food; Prolong shelf life through the destruction of certain enzymes; To promote a product with acceptable taste, odor and appearance.
7. True
8. False
9. D
10. Spray drying

Unit 5 − Answers

1. Color and shape
2. Rheology is the study of the science of deformation of matter.
3. Sweet, sour, bitter, salty
4. False
5. True
6. Agricultural
7. They make sure a consistent quality product is produced.
8. True
9. Commercial Item Descriptions
10. False

Unit 6 − Answers

1. Physical, chemical, biological
2. Shelf life is the time required for a food product to reach an unacceptable quality.
3. False
4. Chemical
5. 10˚
6. True
7. A
8. X-rays, microwave, ultraviolet light, gamma rays
9. True

Unit 7 − Answers

1. microorganisms
2. Destroy all pathogenic microorganisms that might grow in a specific product, and extend shelf life by decreasing number of spoilage organisms present.
3. False
4. True
5. C
6. D
7. Reduce
8. Decrease
9. True
10. True
11. Outside

Unit 8 − Answers

1. Keep cold foods cold
2. B
3. Gentlest
4. Psychrophilic
5. Maintained, reduced, elevated
6. Blanching is a mild heat treatment designed to inactivate enzymes.
7. Sandy or grainy
8. Air, immersion
9. True
10. Any two of the following: moving air, hydro-cooling, vacuum cooling, liquid nitrogen

Unit 9 − Answers

1. Microbial
2. False
3. Surface Area; Temperature; Humidity; Atmospheric pressure

4. Slowly
5. True
6. Air, drum, vacuum, freeze
7. Vacuum
8. B
9. Reducing the volume and weight saves money by removing water that would have to be contained and shipped.
10. True
11. Sublimation is when water goes from a solid to a gas without passing through the liquid phase
12. Solar Evaporation
13. Water

Unit 10 − Answers

1. False
2. Radioisotopes and machines that produce high-energy beams
3. Pathogens
4. True
5. Water
6. C
7. Ions
8. True
9. Solid pieces and liquids in a food are heated at the same time.
10. 915+ million times per second

Unit 11 − Answers

1. Carbohydrate, bacteria and yeasts
2. Preservation of the products
3. pH, salt content, temperature
4. True
5. Pasteurizing and cooling

6. D
7. Carbohydrates
8. False
9. C
10. Mashing, boiling, fermentation, aging
11. Microorganisms

Unit 12 − Answers

1. 3 to 4 times
2. Food and Drug Administration
3. True
4. False
5. Homogenized
6. Enzymes and microorganisms
7. A
8. Osmotic pressure
9. False
10. The milk is ripened with heat (77 to 86˚F) for 45 to 60 minutes
11. 0.6%
12. Texture or mouth feel

Unit 13 − Answers

1. D
2. True
3. Food Safety and Inspection Service of the Department of Agriculture
4. Quality-assigned in terms of carcass characteristics associated with palatability, such as marbling; Yield-classify carcasses based on proportion of usable meat to bone and fat
5. Myoglobin
6. False

7. Any 5 of the following: genetics, species and age, feeding, muscle type, suspension of the carcass, electrical stimulation, chilling rate, aging, mechanical tenderizing, chemical tenderizing, freezing and thawing, cooking and carving
8. Aging
9. Salt
10. True
11. False
12. A
13. 160 to 170˚F
14. True
15. Protein
16. 50%

Unit 14 − Answers

1. True
2. Contract
3. Poult, tom, hen
4. Any three of the following: bird age, sex, strain, diet, intramuscular fat, meat moisture content, pre-slaughter conditions processing variables
5. D
6. Time of deboning
7. True
8. Fat
9. The integrity and quality of poultry and further processed poultry products
10. USDA's AMS Poultry Program's Grading Branch

Unit 15 − Answers

1. C
2. False
3. Breed
4. Yolk

5. Age
6. False
7. Grade B
8. B
9. Vitelline membrane
10. White
11. True

Unit 16 – Answers

1. Fat content
2. B
3. True
4. False
5. Refrigeration, freezing, canning
6. To protect the surface of the fish from oxidation and freezer burn
7. Intestines, heads, gills, less favored fish parts
8. Hazard Analysis and Critical Control Point, or HACCP
9. Bacteria, attack
10. False

Unit 17 – Answers

1. C
2. True
3. False
4. Energy
5. Cloudy
6. Animal Feed
7. True
8. A food product with the same functions and characteristics as fat but with fewer calories.
9. Mimetics or synesthetic fat

10. Melting
11. D
12. True

Unit 18 – Answers

1. Bran coat, germ, endosperm
2. Insoluble, soluble
3. False
4. Hard, soft, durum
5. Gluten
6. B vitamins and iron
7. B
8. Starch, oil, protein, fiber
9. Ethanol
10. True
11. Controls yeast metabolism
12. False
13. Increases the protein value of the product
14. All-purpose flour, bread flour, cake flour, pastry flour, self-rising flour, whole-wheat flour

Unit 19 – Answers

1. True
2. Ethylene
3. Cultivars and varieties
4. Pigments
5. Crispness
6. Flavor
7. A
8. True

9. Temperature
10. U.S. Fancy, U.S. No. 1, U.S. No. 2, and U.S. No.3.
11. Climatic means the product produces ethylene while ripening; non-climactic means the product is ethylene sensitive and does not produce it while ripening.
12. False
13. B
14. Red

Unit 20 − Answers

1. High-fructose corn syrup
2. False
3. C
4. Beer
5. True
6. Natural, or table wines, with an alcohol content of 8 to 14 percent, generally consumed with meals; Sparkling wines with an alcohol content of 11 to 12 percent, containing carbon dioxide, like champagne; Fortified wines, with an alcohol content of 15 to 24 percent, with varying sweetness. The various types of fortified wines include port, sherry and aromatic wines and bitters such as vermouth.
7. Viticulture is the science and are of growing grapes
8. Fermentation
9. Theflavor of coffee is determined not only by the variety, but also by the length of time the green beans are roasted.
10. B
11. Enzymes contained
12. Pekoe
13. True
14. Any of the following: source protection, source monitoring, reverseosmosis, distillation, micro-filtration, carbon filtration, ozonation, ultraviolet (UV)light

Unit 21 − Answers

1. B
2. Heating

3. Interfering agents interfere with the formation of crystals and provide some sucrose secondary properties to the candy
4. High fructose corn syrup
5. Carmelization
6. Fructose is 75 percent sweeter than sucrose so less is needed.
7. True
8. D
9. Cacao
10. True
11. True
12. They all have a similar carbohydrate composition with a glucose-to-fructose ratio of about 1 to 1.

Unit 22 − Answers

1. Transportation
2. Primary, secondary, tertiary
3. Metal, plant matter (paper and wood), glass, plastic
4. True
5. Must meet all the standard requirements for packaging, be transparent to microwaves, and able to withstand high temperatures
6. B
7. False

Unit 23 − Answers

1. Microbiological and chemical purity and safety, suitability for processing use, and decontamination after use
2. Biological oxygen demand
3. True
4. True
5. Raw
6. Environment

Unit 24 − Answers

1. Illness caused through transmission of disease germs; food poisonings and food infections caused by bacteria; food poisoning caused by agents other than microorganisms
2. False
3. SPC is the total counts of microorganisms found in a food and reflects the handling history, state of decomposition, or degree of freshness of the food
4. nutrients, bacteria
5. Rinse, clean, rinse, sanitize
6. False
7. Must be potable and pathogen-free
8. FDA
9. Identifying a critical control point is recognizing the possible food safety hazards at different times through the foods' processing, and controlling or eliminating that hazard.
10. Pathogens

Unit 25 − Answers

1. FDA-B, EPA-D, ATF-A, USDA-C
2. False
3. Additives
4. Clear up confusion that has prevailed on supermarket shelves for years; Help consumers choose more healthful diets; Offer an incentive to food companies to improve the nutritional qualities of their products
5. True
6. True
7. Total calories
8. Sources of energy
9. RDA-Recommended Daily Allowances
10. True