North Carolina FFA Association

**2013 State Food Science Written Examination**

**Directions: Place your name, chapter, and contestant number on the scantron form that you receive from the test administrators. Read each of the following multiple choice items and possible answers carefully. Mark the letter of the correct answer on your answer sheet (scantron form) as instructed. PLEASE MAKE NO MARKS ON THIS TEST.**

1. The \_\_\_ bond is the bond formed by the transfer of electrons between atoms.
   1. ionic
   2. covalent
   3. chemical
   4. hydrogen
2. The \_\_\_ is an element or compound present at the start of a reaction.
   1. Coefficient
   2. Product
   3. Reactant
   4. Yield
3. A change from the solid phase directly into the gas phase is called \_\_\_\_\_\_.
   1. Melting Point
   2. Sublimation
   3. Boiling Point
   4. Surface Tension
4. A mixture of two liquids containing droplets that don’t normally blend with each other is called \_\_\_\_\_.
   1. Surface Tension
   2. Emulsion
   3. Immiscible
   4. Colloidal Dispersion
5. When acids dissolve in water, their molecules break apart and release \_\_\_\_ into the solution?
   1. oxygen
   2. hydrogen
   3. nitrogen
   4. calcium
6. \_\_\_\_\_ release hydroxide ions in water solutions.
   1. Bases
   2. Acids
   3. Hydrogen Ions
   4. Neutral molecules
7. Bases, if edible, would taste \_\_\_\_.
   1. Umami
   2. Sweet
   3. Sour
   4. Bitter
8. Which is NOT a method of heat transfer?
   1. Conduction
   2. Convection
   3. Solar
   4. Radiation
9. A \_\_\_\_ nutrient cannot be made by the body and must be obtained from food.
   1. Necessary
   2. Non-Essential
   3. Essential
   4. Critical
10. To help people know how much of each nutrient is needed for good nutrition, a table of RDAs was created by the US government. RDA stands for \_\_\_\_\_.
    1. Recommended Dietary Allowances
    2. Recommended Daily Allowances
    3. Regular Daily Allowances
    4. Regular Dietary Allowances
11. The liver produces \_\_\_\_, which helps fat mix with the water in the intestine?
    1. Bile
    2. Acid
    3. Gastrin
    4. Enzyme
12. Hydrochloric acid in the stomach has a pH of \_\_\_\_\_.
    1. 12
    2. 7
    3. 2
    4. 6
13. A \_\_\_\_ is a substance that reduces, but not necessarily eliminates, microbial contaminants on surfaces to levels that are considered safe from a public health standpoint.
    1. Disinfectant
    2. Biocide
    3. Sterilizer
    4. Sanitizer
14. Which is NOT a source of ionizing radiation available for the treatment of food products?
    1. Electron beam
    2. Gamma Rays
    3. Steamed Water
    4. X ray
15. Which factor is NOT considered a cost of a typical cleaning operation in food manufacturing?
    1. Labor
    2. Temperature
    3. Water
    4. Energy
16. With rising labor costs, CIP systems are used to automate the cleaning process and use less labor for cleaning. CIP stands for \_\_\_\_\_.
    1. Clearing in Place
    2. Cleaning in Place
    3. Cleaning in Process
    4. Clearing in Process
17. Waste disposal from food processing facilities can present a hazard if the wastes are not properly handled because of high content of organic matter, which is measured as \_\_\_\_\_\_\_\_\_.
    1. Broad Ongoing Demand (BOD).
    2. Broad Oxygen Demand (BOD).
    3. Biological Oxygen Discharge (BOD).
    4. Biological Oxygen Demand (BOD).
18. Pest control programs should be created for control of insects, rodents and \_\_\_\_.
    1. Birds

B. Dogs

C. Cats

D. People

1. Using biological controls for effective pest management is called IPM, which stands for \_\_\_\_.
   1. Independent pest management
   2. Integrated pest management
   3. Interdependent pest management
   4. Iso-dependent pest management
2. Dust collection systems are most effective if conducted under a \_\_\_\_ pressure.
   1. Positive
   2. Negative
   3. Neutral
   4. Mass
3. The topography near a food facility should be sloped to permit water flow \_\_\_\_ the building \_\_\_\_ the formation of water puddles.
   1. Away from, without
   2. Towards, with
   3. Towards, without
   4. Away from, with
4. Food manufacturing firms involved in interstate commerce are regulated by the \_\_\_ and subject to state inspection.
   1. Department of Commerce
   2. Department of the Treasury
   3. Food and Drug Administration
   4. Department of Health and Human Services
5. Low moisture foods contain low \_\_\_\_\_, which reduces the chance of microbial spoilage.
   1. Water activity
   2. temperature
   3. pH
   4. acid
6. Which is NOT a pathogen of concern in dairy processing facilities?
   1. Salmonella
   2. Bacillus Cereus
   3. Listeria
   4. E-coli 0157:H7
7. Sanitizers are applied \_\_\_\_\_ the cleaning step of a sanitation program.
8. After
9. Before
10. Before and After
11. During