

1. *Clostridium botulinum* will not produce toxin in food at a pH of _____.
 - a. 4.6 or lower
 - b. 4.6 or higher
 - c. 5.6 or lower
 - d. 5.6 or higher
2. A food scientist measures the color of apples for consistency. Chroma is one of the measurements, which determines _____.
 - a. how intense the color is
 - b. if the color is red, blue, or green
 - c. the lightness or darkness of the color
 - d. the amount of discoloration
3. This substance provides fizz to soft drinks.
 - a. Potassium bicarbonate
 - b. Carbon dioxide
 - c. Quinine
 - d. Potassium sulfate
4. The quickest method that a food processor could use for dehydration, especially milk, eggs, and protein powders, is _____ drying.
 - a. tray
 - b. drum
 - c. spray
 - d. vacuum
5. _____ is a type of ROP.
 - a. MAP
 - b. SAP
 - c. TAP
 - d. GAP
6. In the food sanitation industry, CIP means which of the following?
 - a. Critical inspection program
 - b. Compliance improvement plan
 - c. Common industrial practice
 - d. Clean-in-place
7. _____ is an enzyme inhibitor that slows the spoilage process of eggs when it combines with iron to form a stable compound making iron unavailable for microbial growth.
 - a. Tomatin
 - b. Lactoferrin
 - c. Conalbumin
 - d. Phytic acid
8. Separation processes are used during food production, and _____ is a method based on separation by density.
 - a. evaporation
 - b. distillation
 - c. crystallization
 - d. creaming
9. When milk curdles to form cheese, a change in the shape of a protein molecule occurs without breaking peptide bonds. This is called _____.
 - a. oxidation
 - b. lyophilization
 - c. denaturation
 - d. hydrogenation
10. Intermediate moisture foods have moisture levels of _____ with enough dissolved solids to prevent the growth of microbes.
 - a. 10-30%
 - b. 20-50%
 - c. 30-60%
 - d. 40-70%

11. A _____ is used to determine the cooking time and temperature needed to kill a specific microorganism.
- thermal death curve
 - bacterial growth curve
 - standard growth curve
 - Gompertz model
12. A _____ is a misfolded protein believed to be the causative agent of bovine spongiform encephalopathy.
- virus
 - prion
 - rotavirus
 - bacterium
13. The FDA regulates about ____ of the U.S. food supply.
- 50%
 - 60%
 - 80%
 - 90%
14. _____ is the inadvertent introduction of an allergen into a product, generally resulting from environmental exposure during processing or handling.
- Cross-contamination
 - Adulteration
 - Contamination
 - Cross-contact
15. To allow for the expansion of cooking, space left in a container after adding food is called ____.
- extra volume
 - condensation space
 - headspace
 - free space
16. _____ involves restoring some of the nutrients to a product that were removed during processing.
- Fortification
 - Enrichment
 - Bioavailability
 - Supplementation
17. _____ is an enzyme that breaks down bitter flavor compounds in citrus fruits.
- Amyloglucosidase
 - Cellulase
 - Phytase
 - Narginase
18. Food packaging that is _____ means that liquids and/or gases can pass through or penetrate the packaging.
- impenetrable
 - impervious
 - permeable
 - hermetic
19. The temperature at which maximum swelling occurs when a liquid is thickened with starch is called the _____ point.
- melting
 - expansion
 - gelatinization
 - swelling
20. Which of the following is NOT an example of descriptive research when food scientists are collecting data on a product?
- Taste tests
 - Measuring product pH
 - Written surveys
 - Consumer interviews

21. The sharpness of a cheese refers to _____.

- a. its cut ability
- b. its melt ability
- c. the strength of its flavor and aroma
- d. the density of the finished cheese

22. Emulsifiers are commonly used to manufacture mayonnaise. An emulsifier is a molecule that has _____.

- a. a polar and nonpolar end
- b. two polar ends
- c. two nonpolar ends
- d. molecule polarity has no effect on an emulsifier

23. In the United States, a certification process administered by the _____ must be followed before a food can be labeled "organic."

- a. FDA Health and Human Services
- b. USDA Agricultural Marketing Service
- c. USDA Food Safety and Inspection Service
- d. Environmental Protection Agency

24. A yogurt labeled as "strawberry-flavored yogurt" _____.

- a. means the yogurt is flavored with strawberries
- b. means that at least some of the flavor comes from synthetic flavoring agents
- c. means only synthetic flavors were added
- d. it has no specifications beyond it looks and tastes like strawberry

25. Maple syrup is an example of a _____.

- a. heterogeneous mixture
- b. solute
- c. pure substance
- d. homogeneous mixture

26. Gelatin may be added to beer or processed apple juice to chemically bind with _____ so it can be filtered out to remove cloudiness and sediments before bottling.

- a. allyl sulfides
- b. isothiocyanates
- c. tannins
- d. saponins

27. Which of the following is an example of a nutritive sweetener?

- a. acesulfame K
- b. xylitol
- c. sucralose
- d. stevioside

28. The CDC estimates that eggs are involved in about 75% of all _____ outbreaks.

- a. listeriosis
- b. *E. coli* O157:H7
- c. *Staphylococcus aureus*
- d. salmonellosis

29. Having enough food to feed the population is the future, or food sustainability, is an important goal for food scientists. Which of the following would NOT be a food sustainability goal for the food industry?

- a. Throw zero product away
- b. Minimize food waste
- c. Get value added out of food waste
- d. Increase marketing

30. _____ is a process of adding hydrogen ions to an unsaturated lipid to increase its saturation level such as forming margarine from corn oil.
- Saturation
 - Hydrogenation
 - Auto-oxidation
 - Peroxidation
31. _____ is used to concentrate fruit juices with limited use of heat to protect flavor compounds and Vitamin C.
- Distillation
 - Osmosis
 - Reverse osmosis
 - Evaporation
32. A food company manufactures frozen pancakes that are ready-to-reheat and heat and are sold in the frozen food case at retail. To make the pancakes, the company deposits pancake batter on a griddle. Heat is transferred by _____ though this cooking method.
- radiation
 - conduction
 - convection
 - irradiation
33. In a food processing facility, _____ is an extrinsic factor that affects the growth rate of microorganisms.
- water activity
 - oxidation-reduction potential
 - pH
 - temperature
34. Vegetable oil becomes cloudy when refrigerated because some of the triglycerides have a _____ than the temperature in most home refrigerators.
- solidification point that is higher
 - solidification point that is lower
 - saturation point that is higher
 - saturation point that is lower
35. Pumpkin spice is a popular fall flavor marketed in products by many food companies. It is typically a blend of _____.
- cinnamon, anise, ginger, and clove or allspice
 - cinnamon, nutmeg, ginger, and espresso
 - cinnamon, nutmeg, ginger, and clove or allspice
 - cinnamon, nutmeg, lavender, and clove or allspice
36. Glycerol is an example of a(n) _____, that is a food additive used to help retain moisture in products such as soft candies, chewing gum, and confections.
- humectant
 - anticaking agent
 - emulsifier
 - stabilizer

37. The FDA FSMA was signed into law on January 4, 2011. What does FSMA mean?
- Food Services Modification Act
 - Food Security Management Act
 - Federal Safety Maintenance Act
 - Food Safety Modernization Act
38. Myoglobin is the _____ protein pigment in muscle tissue that provides the color.
- zinc-binding
 - niacin-binding
 - magnesium-binding
 - iron-binding
39. The red color in tomatoes comes from _____, which is a carotenoid.
- lutein
 - zeaxanthin
 - lycopene
 - genistein
40. Of the following allergens, which is considered one of the “big eight” allergens?
- apples
 - coconut
 - yams
 - mustard seeds
41. USDA FSIS requires that companies must have HACCP plans for _____.
- fruit juices
 - bread
 - Siluriformes fish
 - pet foods
42. When corn syrup is made from corn, _____ is the first enzyme used to convert starch into oligosaccharides.
- D-xylose
 - glucoamylase
 - α -amylase
 - lactase
43. If a food product is labeled as “calorie free,” it means that the product contains _____.
- zero calories
 - fewer than 5 calories
 - fewer than 10 calories
 - fewer than 15 calories
44. To provide consumers with expert knowledge on handling and storing food safely and prevent food poisoning, the USDA FSIS developed _____ that allows consumers to ask questions or participate on a live chat, either online or through a mobile app.
- Ask Betty
 - Ask Karen
 - Ask John
 - Ask Pete
45. _____ is an enzymatically controlled change in a food product brought on by the action of microorganisms.
- Fermentation
 - Hydrogenation
 - Extrusion
 - Neutralization

46. _____ is the study of the nature of food, the causes of deterioration, the principles underlying food processing, and improvement of foods for the consuming public.
- a. Nutrition
 - b. Home economics
 - c. Sensory analysis
 - d. Food science
47. Umami can alter the perception of tastes, making _____.
- a. sodium less saltier and sugar sweeter
 - b. sour and bitter less acerbic and biting
 - c. sodium more saltier and sugar less sweeter
 - d. sodium less saltier and sugar less sweeter
48. _____ is used as a dough conditioner in the bakery industry, in addition to being a disinfectant in the dairy industry.
- a. Calcium chloride
 - b. Potassium
 - c. Iodine
 - d. Ascorbic acid
49. _____ is a sucrose polyester that looks, feels, and performs like fat, yet provides no calories and passes through the body undigested.
- a. Simplesse
 - b. Olestra
 - c. Trailblazer
 - d. LITA
50. _____ is the measure of the partial water pressure over a food, compared to the vapor pressure over pure water at a given temperature.
- a. pH
 - b. water activity
 - c. water content
 - d. brix