

Culinary Science Fundamentals

Culinary Arts · Answer Key · 20 Questions

1. What is the primary gas responsible for the leavening of bread dough during fermentation?

- A) Oxygen
- B) Nitrogen
- C) Carbon dioxide**
- D) Hydrogen

2. At what temperature does water boil at standard sea-level atmospheric pressure?

- A) 80°C
- B) 90°C
- C) 100°C**
- D) 110°C

3. Which protein in flour is essential for the formation of gluten when mixed with water?

- A) Gliadin**
- B) Albumin
- C) Casein
- D) Myosin

4. What is the chemical process called when sugar is heated until it browns and develops a complex flavor?

- A) Oxidation
- B) Caramelization**
- C) Fermentation
- D) Emulsification

5. Which type of heat transfer occurs through direct contact between surfaces?

- A) Convection
- B) Radiation
- C) Conduction**
- D) Induction

6. Which specific substance acts as an emulsifier in egg yolks to help blend oil and water?

- A) Lecithin**
- B) Collagen
- C) Casein
- D) Glucose

7. What is the scientific name for the browning reaction between amino acids and reducing sugars in food?

A) Maillard reaction

B) Saponification

C) Denaturation

D) Coagulation

8. Which acid is primarily found in lemons and limes?

A) Acetic acid

B) Citric acid

C) Lactic acid

D) Tartaric acid

9. What happens to proteins when they are exposed to high heat or acids?

A) They liquefy

B) They evaporate

C) They denature

D) They crystallize

10. Which ingredient acts as a base in a chemical leavening reaction when combined with an acid?

A) Baking soda

B) Salt

C) Cornstarch

D) Sugar

11. What is the main component of common table salt?

A) Calcium carbonate

B) Sodium chloride

C) Potassium nitrate

D) Magnesium sulfate

12. Which process turns liquid cream into solid butter by agitating the fat globules?

A) Pasteurization

B) Homogenization

C) Churning

D) Fermentation

13. What is the primary purpose of adding yeast to bread dough?

- A) To add color
- B) To provide flavor
- C) To produce gas for leavening**
- D) To thicken the mixture

14. Which fruit contains the enzyme bromelain, which can break down proteins?

- A) Apple
- B) Pineapple**
- C) Banana
- D) Orange

15. What is the process of heating a liquid to a specific temperature to kill harmful bacteria called?

- A) Pasteurization**
- B) Distillation
- C) Crystallization
- D) Clarification

16. What type of fat is typically solid at room temperature?

- A) Saturated fat**
- B) Unsaturated fat
- C) Polyunsaturated fat
- D) Monounsaturated fat

17. Which chemical element is a central component of the chlorophyll molecule in green vegetables?

- A) Iron
- B) Calcium
- C) Magnesium**
- D) Zinc

18. What is the freezing point of pure water at sea level?

- A) 0°C**
- B) 4°C
- C) -2°C
- D) 10°C

19. Which substance is produced when milk is fermented by bacteria like Lactobacillus?

- A) Ethanol
- B) Lactic acid**
- C) Acetic acid
- D) Citric acid

20. What is the primary gas found in the atmosphere that causes fats to become rancid over time?

- A) Nitrogen
- B) Argon
- C) Oxygen**
- D) Helium