

Culinary Science Fundamentals

Culinary Arts · Answer Key · 25 Questions

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

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

2. Which protein in wheat flour forms the elastic structure of bread dough when mixed with water?

- A) Albumin
- B) Casein
- C) Gluten**
- D) Collagen

3. What is the chemical process of browning food that creates complex flavors through the reaction of amino acids and sugars?

- A) Maillard reaction**
- B) Oxidation
- C) Fermentation
- D) Caramelization

4. At what temperature does water reach its boiling point at standard atmospheric pressure?

- A) 90 degrees Celsius
- B) 100 degrees Celsius**
- C) 110 degrees Celsius
- D) 120 degrees Celsius

5. Which component of milk is responsible for the coagulation process used to make cheese?

- A) Lactose
- B) Casein**
- C) Whey
- D) Butterfat

6. What type of heat transfer occurs when heat moves through direct contact between two surfaces?

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

7. Which substance is added to egg whites to stabilize the foam during the making of a meringue?

- A) Salt
- B) Cream of tartar**
- C) Baking soda
- D) Sugar

8. What is the result of applying high heat to sugar until it decomposes and turns brown?

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

9. Which fruit enzyme is commonly used as a natural meat tenderizer?

- A) Bromelain**
- B) Amylase
- C) Lipase
- D) Lactase

10. What process is used to turn liquid vegetable oils into semi-solid fats?

- A) Distillation
- B) Hydrogenation**
- C) Pasteurization
- D) Homogenization

11. What is the main acid found in vinegar?

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

12. Which of these is a process that uses heat to kill harmful bacteria in food products like milk?

A) Pasteurization

B) Freezing

C) Dehydration

D) Salting

13. What is the primary thickening agent in a classic roux?

A) Sugar

B) Starch

C) Salt

D) Vinegar

14. What happens to the structure of gelatin when it is heated in water?

A) It crystallizes

B) It solidifies

C) It dissolves

D) It evaporates

15. Which common kitchen ingredient is a base that reacts with acids to produce carbon dioxide?

A) Baking soda

B) Cornstarch

C) Salt

D) Honey

16. What type of emulsion is mayonnaise?

A) Water in oil

B) Oil in water

C) Gas in liquid

D) Solid in gas

17. Which nutrient is most susceptible to degradation when exposed to light and air?

A) Fat

B) Vitamin C

C) Fiber

D) Protein

18. What is the technical term for the hardening of starch granules when heated in liquid?

A) Gelatinization

- B) Coagulation
- C) Caramelization
- D) Emulsification

19. What is the primary reason for adding salt to cooking water for pasta?

A) To increase boiling point

B) To improve flavor

- C) To prevent sticking
- D) To speed up cooking

20. Which gas is released when baking soda reacts with an acid?

A) Oxygen

B) Carbon dioxide

- C) Hydrogen
- D) Nitrogen

21. What is the main chemical component of table salt?

A) Sodium chloride

- B) Potassium chloride
- C) Magnesium sulfate
- D) Calcium carbonate

22. What property of fats makes them essential for creating flaky textures in pastry?

A) Acidity

B) Hydrophobicity

- C) Sweetness
- D) Volatility

23. What causes the green color in vegetables to dull when overcooked?

A) Loss of chlorophyll

- B) Increase in sugar
- C) Oxidation of minerals
- D) Breakdown of fiber

24. Which form of heat transfer involves the movement of currents in liquids or gases?

A) Conduction

B) Convection

- C) Radiation
- D) Refraction

25. What substance is created when an acid reacts with a base in a chemical leavening agent?

A) Water

B) Salt

C) Sugar

D) Oil