

The Science of Gastronomy

Gastronomy · Answer Key · 20 Questions

1. Which primary taste is detected by receptors that respond to the presence of glutamate?

- A) Sweet
- B) Sour
- C) Umami**
- D) Bitter

2. What is the primary chemical component that makes chili peppers taste hot?

- A) Capsaicin**
- B) Citric acid
- C) Lactose
- D) Glucose

3. Which gas is produced by yeast during the fermentation process, causing bread dough to rise?

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

4. At what temperature in Celsius does pure water typically boil at sea level?

- A) 50
- B) 80
- C) 100**
- D) 120

5. What process turns grape juice into wine through the action of yeast?

- A) Oxidation
- B) Fermentation**
- C) Distillation
- D) Pasteurization

6. Which protein found in milk coagulates to form the solid curds in cheese production?

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

7. What is the main acid found in lemons?

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

8. Which part of the egg contains the highest concentration of fat?

- A) The shell
- B) The white
- C) The yolk**
- D) The chalaza

9. What substance is removed from butter to create 'clarified butter'?

- A) Water and milk solids**
- B) Salt
- C) Sugar
- D) Fiber

10. Which biological process is responsible for the browning of cut apples?

- A) Enzymatic browning**
- B) Caramelization
- C) Fermentation
- D) Pasteurization

11. What is the scientific term for the Maillard reaction in cooking?

- A) A reaction between amino acids and reducing sugars**
- B) The boiling of water
- C) The freezing of liquids
- D) The melting of ice

12. Which mineral is commonly known as table salt?

- A) Sodium chloride**
- B) Calcium carbonate
- C) Potassium nitrate
- D) Magnesium sulfate

13. What type of molecule is starch?

- A) Protein
- B) Carbohydrate**
- C) Lipid
- D) Vitamin

14. Which element is essential for the structure of hemoglobin and is found in red meat?

A) Iron

B) Calcium

C) Gold

D) Silicon

15. What is the primary sugar found in milk?

A) Fructose

B) Sucrose

C) Lactose

D) Maltose

16. What chemical process occurs when sugar is heated until it browns and develops a complex flavor?

A) Emulsification

B) Caramelization

C) Carbonation

D) Saponification

17. Which of these is a leavening agent used to make baked goods rise?

A) Baking soda

B) Salt

C) Vinegar

D) Olive oil

18. What defines an emulsion in culinary terms?

A) A mixture of two immiscible liquids

B) A solid dissolved in a liquid

C) A pure element

D) A gas trapped in a solid

19. What is the primary substance that gives spinach its green color?

A) Chlorophyll

B) Carotene

C) Anthocyanin

D) Hemoglobin

20. What happens to the volume of water when it turns into ice?

- A) It decreases
- B) It stays the same
- C) It increases**
- D) It disappears