Advanced Dietetics Concepts

Dietetics · Answer Key · 20 Questions

1. Which of the following vitamins is primarily involved in the synthesis of collagen, a crucial protein for connective tissues?

A) Vitamin A
B) Vitamin C (Ascorbic Acid)
C) Vitamin D
D) Vitamin E

2. The primary site for gluconeogenesis, the metabolic pathway that generates glucose from non-carbohydrate precursors, is predominantly located in which organ?

A) Skeletal muscle
B) Adipose tissue
C) Liver
D) Kidneys

3. Which mineral is essential for oxygen transport by hemoglobin and myoglobin, and its deficiency leads to iron-deficiency anemia?

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

4. The Recommended Dietary Allowance (RDA) for a nutrient is defined as:

A) The average daily intake level that is likely to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a particular life stage and gender group.
B) The intake level that is sufficient to meet the nutrient requirements of half the healthy individuals in a particular life stage and gender group.
C) The highest level of daily nutrient intake that is likely to pose no risk of adverse health effects for almost all individuals in the general population.
D) A range of intakes between the Estimated Average Requirement (EAR) and the Tolerable Upper Intake Level (UL).

5. Which B vitamin is a precursor for the coenzyme acetyl-CoA, which plays a central role in carbohydrate, fat, and protein metabolism?

A) Thiamin (B1)
B) Riboflavin (B2)
C) Niacin (B3)
D) Pantothenic acid (B5)

6. The process by which the body converts excess carbohydrates and proteins into fatty acids for storage is known as:

A) Glycogenolysis
B) Lipogenesis
C) Beta-oxidation
D) Ketogenesis

7. Which fat-soluble vitamin is essential for blood clotting by facilitating the synthesis of prothrombin and other clotting factors?

A) Vitamin A
B) Vitamin E
C) Vitamin K
D) Vitamin D

8. A deficiency in iodine can lead to which of the following endocrine disorders?

A) Diabetes Mellitus
B) Cushing's Syndrome
C) Hypothyroidism (Goiter)
D) Addison's Disease

9. Which of the following is a key function of dietary fiber in the digestive system?

A) Absorption of fat-soluble vitamins
B) Stimulation of bile production
C) Regulation of bowel movements and prevention of constipation
D) Production of hydrochloric acid

10. The process of breaking down stored glycogen into glucose is called:

A) Glycogenesis
B) Gluconeogenesis
C) Glycogenolysis
D) Lipolysis

11. Which trace mineral is crucial for the functioning of thyroid hormones and is often found in seafood and iodized salt?

A) Selenium
B) Zinc
C) Copper
D) Iodine

12. The Cori cycle involves the interconversion of lactate and glucose between which two organs?

A) Liver and brain
B) Muscle and adipose tissue
C) Liver and muscle
D) Kidney and heart

13. Which amino acid is considered conditionally essential and is a precursor for the synthesis of neurotransmitters like serotonin?

A) Leucine
B) Tyrosine
C) Tryptophan
D) Valine

14. The primary role of Vitamin D in the body is to facilitate the absorption of which mineral?

A) Iron
B) Magnesium
C) Calcium
D) Potassium

15. Which metabolic pathway produces adenosine triphosphate (ATP) primarily through the stepwise oxidation of glucose?

A) Krebs Cycle
B) Electron Transport Chain
C) Glycolysis
D) Beta-oxidation

16. Which of the following is a key characteristic of omega-3 fatty acids?

A) They contain double bonds at the methyl end of the carbon chain.
B) They are typically solid at room temperature.
C) They have anti-inflammatory properties.
D) They are saturated with hydrogen atoms.

17. The Tolerable Upper Intake Level (UL) for a nutrient is:

A) The minimum intake level required to prevent deficiency.
B) The average daily intake level that meets the needs of most people.
C) The maximum daily intake unlikely to cause adverse health effects.
D) A recommended range for optimal health.

18. Which vitamin is involved in the synthesis of nucleic acids (DNA and RNA) and is essential for cell division?

A) Vitamin K
B) Folate (B9)
C) Vitamin E
D) Biotin (B7)

19. The process of converting amino acids into glucose when carbohydrate stores are depleted is known as:

A) Deamination and gluconeogenesis
B) Transamination and ketogenesis
C) Deamination and ureagenesis
D) Proteolysis and catabolism

20. Which micronutrient is a component of many enzymes involved in antioxidant defense, such as superoxide dismutase?

A) Manganese
B) Molybdenum
C) Chromium
D) Vanadium