

Dietetics in the Natural World

Dietetics · Practice Test · 22 Questions

1. Which of these herbivores possesses a digestive system that relies on symbiotic microorganisms to break down cellulose, similar to ruminants?

- A) Domestic cat
- B) Domestic dog
- C) Horse
- D) Snake

2. Mycorrhizal fungi form symbiotic relationships with plant roots, primarily aiding in the absorption of which essential nutrient from the soil?

- A) Nitrogen
- B) Carbon
- C) Phosphorus
- D) Potassium

3. The diet of a koala consists almost exclusively of eucalyptus leaves. What is a key dietary challenge koalas face due to this specialized diet?

- A) High protein content
- B) Low nutrient density and toxins
- C) Abundance of vitamin C
- D) Excessive water content

4. Which of the following is a characteristic of an obligate carnivore, such as a domestic cat, in its natural dietary requirements?

- A) Ability to synthesize taurine
- B) Requirement for dietary fiber
- C) Dependence on plant-based protein
- D) Inability to efficiently digest plant matter

5. In aquatic ecosystems, phytoplankton form the base of the food web. Their nutrition is primarily derived from:

- A) Decomposing organic matter
- B) Photosynthesis using sunlight and dissolved nutrients
- C) Predation on small invertebrates
- D) Chemosynthesis in deep-sea vents

6. The process of nitrogen fixation, crucial for plant nutrition, is carried out by certain species of:

- A) Viruses
- B) Fungi
- C) Bacteria
- D) Algae

7. Many desert animals have adapted to survive with limited water intake. Which dietary strategy helps conserve water?

- A) Consuming high-moisture vegetation
- B) Frequent salt consumption
- C) Obtaining water primarily from metabolic byproducts and moisture in food
- D) Drinking large quantities of surface water daily

8. The digestive enzyme amylase, responsible for breaking down carbohydrates, is produced by:

- A) Herbivores only
- B) Carnivores only
- C) Omnivores only
- D) Many animals, including humans

9. Which of these birds exhibits a diet that is primarily insectivorous?

- A) Eagle
- B) Penguin
- C) Robin
- D) Vulture

10. The dietary needs of marine mammals, like seals, are heavily influenced by the availability of:

- A) Insects
- B) Terrestrial plants
- C) Fish and invertebrates
- D) Fungi

11. What role does fiber play in the diet of many herbivores that is less critical for obligate carnivores?

- A) Provides essential amino acids
- B) Aids in digestion and gut motility
- C) Acts as a primary energy source
- D) Is the sole source of vitamin D

12. The process by which plants convert light energy into chemical energy in the form of glucose is known as:

- A) Respiration
- B) Fermentation
- C) Photosynthesis
- D) Decomposition

13. Which of the following is a significant environmental impact associated with the production of animal-based protein compared to plant-based protein?

- A) Lower greenhouse gas emissions
- B) Reduced land and water usage
- C) Higher demand for fossil fuels
- D) Increased biodiversity conservation

14. The diet of a panda primarily consists of bamboo. This plant is rich in cellulose. What is a key adaptation pandas have developed to digest cellulose?

- A) A gizzard for grinding
- B) Symbiotic bacteria in their gut
- C) Absence of digestive enzymes
- D) A very short digestive tract

15. Which of these nutrients is synthesized by gut bacteria in animals like rabbits and is essential for their health?

- A) Vitamin K
- B) Calcium
- C) Iron
- D) Vitamin C

16. The foraging behavior of seed-eating birds is largely influenced by the availability and nutritional content of:

- A) Insects
- B) Seeds and grains
- C) Nectar
- D) Small mammals

17. Certain insects, like aphids, have a specialized mouthpart to extract sap from plants. This feeding strategy allows them to obtain:

- A) Cellulose
- B) Sugars and amino acids
- C) Lipids
- D) Minerals directly from the soil

18. The energy source for most ecosystems on Earth originates from:

- A) Geothermal vents
- B) The Earth's core
- C) The Sun
- D) Lunar radiation

19. Which of the following animals is an example of an omnivore, consuming both plant and animal matter?

- A) Lion
- B) Sheep
- C) Bear
- D) Shark

20. The nutritional value of a soil to plants is largely determined by the presence of organic matter and:

- A) Atmospheric pressure
- B) Mineral nutrients
- C) Wind speed
- D) Humidity

21. In the context of animal diets, what does 'bioavailability' refer to?

- A) The amount of food an animal can eat
- B) The proportion of a nutrient that can be absorbed and utilized by the body
- C) The speed at which food is digested
- D) The variety of food sources available

22. The practice of composting organic waste is a method of nutrient recycling that can benefit:

- A) Industrial manufacturing
- B) Agriculture and soil health
- C) Air purification
- D) Water desalination