

# BIO1001: General Biology - Homework 1

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**User:** Yohandi

**Test:** Homework 1

**Attempt Score:** 10 out of 10 points

## Questions and Answers

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### Question 1

**Which of the following is NOT a property of life?**

**Selected Answer:** [A] Populations of organisms rarely change over time.

**Correct Answer:** A

- [A] Populations of organisms rarely change over time.
- B. Living things exhibit complex but ordered organization.
- C. Organisms take in energy and use it to perform all of life's activities.
- D. Organisms reproduce their own kind.

### Question 2

**Which domain(s) consist(s) of prokaryotic cells?**

**Selected Answer:** [D] Bacteria and Archaea

**Correct Answer:** D

- A. Bacteria only
- B. Eukarya only
- C. Archaea and Eukarya
- [D] Bacteria and Archaea

### Question 3

**What is the difference between discovery science and hypothesis-driven science?**

**Selected Answer:** [C] Discovery science is mostly about describing nature, whereas hypothesis-driven science tries to explain nature.

**Correct Answer:** C

- A. Discovery science "discovers" new knowledge, whereas hypothesis-driven science does not.
- B. Discovery science is based on deductive reasoning, whereas hypothesis-driven science is based on inductive reasoning.

- [C] Discovery science is mostly about describing nature, whereas hypothesis-driven science tries to explain nature.
- D. Discovery science involves predictions about outcomes, whereas hypothesis-driven science involves tentative answers to specific questions.

## Question 4

**Which of the following elements, essential to life, is a trace element?**

**Selected Answer:** [C] iodine

**Correct Answer:** C

- A. phosphorus
- B. carbon
- [C] iodine
- D. calcium

## Question 5

**When Heather grabbed the glass of ice water, the ice cubes were floating at the top. Why were the ice cubes floating in the water?**

**Selected Answer:** [C] The density of water decreases when it freezes.

**Correct Answer:** C

- A. Water can store large amounts of heat.
- B. Water can moderate temperatures through evaporative cooling.
- [C] The density of water decreases when it freezes.
- D. Water has a cohesive nature.

## Question 6

**People with lactose intolerance do not have enough \_\_\_\_\_.**

**Selected Answer:** [B] lactase

**Correct Answer:** B

- A. lactose
- [B] lactase
- C. glucose
- D. fructose

## Question 7

**Amino acids include a side group as well as \_\_\_\_\_.**

**Selected Answer:** [A] a central carbon, a hydrogen atom, an amino group, and a carboxyl group

**Correct Answer: A**

- [A] a central carbon, a hydrogen atom, an amino group, and a carboxyl group
- B. a central carbon, a hydrogen atom, a hydroxyl group, and a carbonyl group
- C. a central nitrogen, a carbon atom, a hydroxyl group, and a carbonyl group
- D. a central nitrogen, a carbon atom, an amino group, and a carbonyl group

## Question 8

**What is responsible for the yellow-orange coloration of leaves in the fall?**

**Selected Answer:** [C] carotenoids

**Correct Answer: C**

- A. RuBP
- B. chlorophyll a
- [C] carotenoids
- D. chlorophyll b

## Question 9

**A cell that completed the cell cycle without undergoing cytokinesis would \_\_\_\_\_.**

**Selected Answer:** [D] have two nuclei

**Correct Answer: D**

- A. have less genetic material than it started with
- B. not have completed anaphase
- C. have its chromosomes lined up in the middle of the cell
- [D] have two nuclei

## Question 10

**Which of the following is the CORRECT sequence of stages in cellular respiration?**

**Selected Answer:** [A] glycolysis, citric acid cycle, electron transport

**Correct Answer: A**

- [A] glycolysis, citric acid cycle, electron transport
- B. citric acid cycle, glycolysis, electron transport
- C. citric acid cycle, electron transport, glycolysis
- D. electron transport, glycolysis, citric acid cycle

## Question 11

**What must pyruvic acid be converted to before it can enter the citric acid cycle?**

**Selected Answer:** [A] acetyl CoA

**Correct Answer:** A

- [A] acetyl CoA
- B. lactic acid
- C. ethyl alcohol
- D. citric acid

## Question 12

**Anaerobic respiration produces a maximum of \_\_\_\_\_ ATP per glucose.**

**Selected Answer:** [B] 2

**Correct Answer:** B

- A. 0
- [B] 2
- C. 10
- D. 38

## Question 13

**\_\_\_\_\_ means that the two members of the allelic pair in the zygote are the same.**

**Selected Answer:** [A] Homozygous

**Correct Answer:** A

- [A] Homozygous
- B. Dominant
- C. Recessive
- D. Heterozygous

## Question 14

**If a child has a characteristic that neither parent has, the characteristic \_\_\_\_\_**

**Selected Answer:** [B] is recessive

**Correct Answer:** B

- A. is dominant
- [B] is recessive
- C. is not genetic but must have been acquired
- D. must be a mutation

## Question 15

**Which of Mendel's laws will be violated by linkage genes?**

**Selected Answer:** [D] Independent assortment

**Correct Answer:** D

- A. Panspermia
- B. Dominance
- C. Segregation
- [D] Independent assortment

## Question 16

**Black fur in mice (B) is dominant to brown fur (b). Short tails (T) are dominant to long tails (t). What fraction of the progeny of crosses BbTt × BBtt will be expected to have black fur and long tails?**

**Selected Answer:** [D] 1/2

**Correct Answer:** D

- A. 1/16
- B. 3/16
- C. 3/8
- [D] 1/2

## Question 17

**Which of the following base pairing in the structure of DNA is correct?**

**Selected Answer:** [B] Thymine:Adenosine

**Correct Answer:** B

- A. Adenosine : Cytosine
- [B] Thymine:Adenosine
- C. Uracil : Thymine
- D. Cytosine:Thymine

## Question 18

**Which of these events occurs during anaphase?**

**Selected Answer:** [A] Sister chromatids become separate chromosomes.

**Correct Answer:** A

- [A] Sister chromatids become separate chromosomes.
- B. Chromosomes line up in the middle of the cell.
- C. The nuclear envelope reappears.

- D. The nuclear envelope breaks up.

## Question 19

**What is the difference between a benign and a malignant tumor?**

**Selected Answer:** [C] Benign tumors do not metastasize; malignant tumors do.

**Correct Answer:** C

- A. Benign tumors are composed of cancer cells; malignant tumors are not.
- B. Benign tumors are not the result of a failure of a cell cycle control system; malignant tumors are.
- [C] Benign tumors do not metastasize; malignant tumors do.
- D. Benign tumors do not form lumps; malignant tumors do form lumps

## Question 20

**An enzyme's function is most dependent on its \_\_\_\_\_.**

**Selected Answer:** [C] shape

**Correct Answer:** C

- A. pH
- B. temperature
- [C] shape
- D. size