

# Answering questions - general biology

[Science](#), [Biology](#)



Question All amino acids within a protein are either polar charged or polarly uncharged. Answer A. TRUE B. FALSE 2 points

Question 2

Acetic acid gives vinegar its sour taste. Which functional group has acidic properties and would release hydrogen ions in an aqueous (water) solution?

Answer

A.

-OH

B.

-NH<sub>2</sub>

C.

-SH

D.

-COOH

3 points

Question 3

An amino acid is to a protein as a \_\_\_\_\_ is to a nucleotide.

Answer

A.

phosphate

B.

glycerol

C.

fatty acid

D.

nucleic acid

3 points

Question 4

A deoxyribose sugar is to a DNA nucleotide as a \_\_\_\_\_ is to an amino acid.

Answer

A.

carboxyl group

B.

R group

C.

the unique functional group (1 of 20)

D.

ribosome

3 points

Question 5

Which of the following statements BEST summarizes structural differences between DNA and RNA?

Answer

A.

RNA is a protein, while DNA is a nucleic acid

B.

RNA is a polymer, but DNA is not a polymer

C.

DNA contains a different sugar than RNA

D.

RNA is a double helix, but DNA is not.

E.

All of the bases in DNA differ from those in RNA

2 points

Question 6

What is the best explanation for why the sugar-phosphate backbone along a strand of DNA is linked through sequential, covalent phosphodiester bonds, while the nucleic acid bases that pair across opposite strands are joined through hydrogen bonding?

Answer

A.

The phosphodiester bonds link the backbone of DNA because these are weaker bonds and allow the strand to be broken down to begin the process of transcription, which is the first step in the central dogma of biology.

C.

Both types of bonds ensure that the structure of the DNA double helix remains intact and that the two strands of DNA are not pulled apart during the process of transcribing an mRNA copy of the DNA, and then translating that mRNA code to a polypeptide.

2 points

Question 8

Which of the following structures distinguishes plant cells from animal cells?

Answer

A.

nucleus

B.

mitochondria

C.

chloroplast

D.

plasma membrane

E.

golgi apparatus

2 points

Question 9

During a period of low water availability, which prokaryotic structure would protect a cell from desiccation (drying out)?

Answer

A.

pili

B.

plasma membrane

C.

nucleus

D.

cell wall

3 points

Question 10

Which of the statements about the synthesis of polypeptides (proteins) is

INCORRECT?

Answer

A.

The translation is the process of protein synthesis

B.

Proteins are synthesized in the cytosol

C.

The synthesis of proteins is a catabolic process

D.

The synthesis of proteins requires ribosomes.

3 points

Question 11

Which cytoskeletal structures represent a highly diverse group of tension-bearing fibers important to the maintenance of cell shape?

Answer

A.

microtubules

B.

intermediate filaments

C.

microfilaments

D.

centrioles

3 points

Question 12

Which would be the most accurate endomembrane route through which a protein is secreted from a cell?

Answer

A.

Golgi apparatus→lysosome→vesicles→plasma membrane

B.

plasmid→plasma membrane→nuclear envelope→smooth endoplasmic reticulum

C.

rough endoplasmic reticulum→ Golgi apparatus→vesicles →plasma membrane

D.

nuclear envelope→vesicles→Golgi apparatus→plasma membrane

3 points

Question 13

Which one of the following pairs is mismatched?

Answer

A.

lysosome-protein synthesis

B.

cytoskeleton-microfilaments

C.

nucleus-DNA replication

D.

cell membrane-lipid bilayer

3 points