

Question 1

The term amphipathic describes the characteristic of some molecules that have _____.

- A) two polar regions
- B) only a single polar region
- C) both a polar and a nonpolar region
- D) no polar regions
- E) two nonpolar regions

Answer: <https://biology-forums.com/index.php?topic=278380>

Question 2

Of the following electron carriers of the electron transport system, which transfers protons in addition to electrons?

- A) cytochrome a
- B) cytochrome b
- C) coenzyme Q
- D) iron-sulfur proteins
- E) iron-copper proteins

Answer: <https://biology-forums.com/index.php?topic=277701>

Question 3

You expect that a mutation in E. coli that was recently isolated results in loss of enzyme R activity. In looking for the gene, you find comparable sequences. Using an in vitro transcription translation system, you use the gene obtained from the mutant, as well as a wild type E. coli as a control. Following protein isolation and gel electrophoresis, you observe that the wild type E. coli produces a protein that is 35K in size, corresponding to enzyme R. However, the mutant strain produces a protein that is 25K in size. What does this information suggest?

- A) A nonsense mutation has occurred, resulting in a truncated, nonfunctional product in the mutant.
- B) A large addition has occurred in the wild type strain, such that approximately 35 tandem repeats of this gene are present and are biologically active.
- C) A missense mutation has occurred, resulting in a truncated, nonfunctional product in the mutant.
- D) all of the above
- E) Not enough information is given.

Answer: <https://biology-forums.com/index.php?topic=278117>

Question 4

Which of the following statements about the polymerization of macromolecules is false?

- A) Often the energy needed for polymerization is supplied by ATP.
- B) The polymer chain usually has two different ends.
- C) Water is added to join the monomers of the macromolecules.
- D) A monomer is usually activated by the coupling of the monomer to a carrier.
- E) Macromolecules are synthesized by the stepwise addition of monomers.

Answer: <https://biology-forums.com/index.php?topic=278331>

Question 5

According to your text, in which of the following steps of the TCA cycle is NADH/FADH₂ not produced?

- A) TCA-2
- B) TCA-3
- C) TCA-4
- D) TCA-6
- E) TCA-8

Answer: <https://biology-forums.com/index.php?topic=277678>

Question 6

The statement, "The total amount of energy in the universe is constant," is a tenet of

- A) the first law of thermodynamics.
- B) the second law of thermodynamics.
- C) thermodynamic spontaneity.
- D) entropy.
- E) enthalpy.

Answer: <https://biology-forums.com/index.php?topic=278441>

Question 7

Which of the following is least likely to be part of a cell membrane?

- A) proteoglycans
- B) phospholipids
- C) glycoproteins
- D) transport proteins
- E) enzymes

Answer: <https://biology-forums.com/index.php?topic=278400>

Question 8

Which of the following terms is incorrectly matched with the word from which it was derived?

- A) Z line-zwischen
- B) M line-myomesin
- C) H zone-hell
- D) I band-irregular
- E) A band-anisotropic

Answer: <https://biology-forums.com/index.php?topic=277927>

Question 9

The process by which photosynthetic organisms use light energy for ATP production is known as

- A) photorespiration.
- B) photosynthesis.
- C) phototaxis.
- D) photophosphorylation.
- E) photoligase

Answer: <https://biology-forums.com/index.php?topic=277714>

Question 10

Self-assembly has been utilized or potentially may be used for all of the following applications except

- A) nanotechnology.
- B) electrical conductivity.
- C) biosensors.
- D) drug delivery systems.
- E) All of the above are examples.

Answer: <https://biology-forums.com/index.php?topic=278346>

Question 11

The mRNA is translated in the 3' to 5' direction in

- A) prokaryotes.
- B) eukaryotes.
- C) archaea.
- D) all of the above
- E) none of the above

Answer: <https://biology-forums.com/index.php?topic=278182>

Question 12

Which of the following is true of a nanometer?

- A) A nanometer is about the size of a common bacterial cell.
- B) A nanometer is one millionth of a meter.
- C) A nanometer is equivalent to 10 Angstroms (Å).
- D) The nanometer is the most common measurement used in measuring whole cells.
- E) none of the above

Answer: <https://biology-forums.com/index.php?topic=277666>

Question 13

The resting potential of a particular nerve cell is -66 mV. Depolarization of the membrane will shift the membrane potential toward

- A) -90 mV.
- B) -66 mV.
- C) 0 mV.
- D) There will be no change.
- E) There is not enough information to tell.

Answer: <https://biology-forums.com/index.php?topic=277799>

Question 14

With which organelle membrane would you expect to find the receptor protein importin?

- A) mitochondrion
- B) nucleolus
- C) chloroplast
- D) plastid
- E) nucleus

Answer: <https://biology-forums.com/index.php?topic=278034>

Question 15

In the extracellular matrix of animal cells, collagen and elastin fibers are embedded with this matrix.

- A) glycoaminoglycans
- B) proteoglycans
- C) pectins
- D) lignins
- E) both choices A and B

Answer: <https://biology-forums.com/index.php?topic=277992>

Question 16

In studying an E. coli strain containing a known frameshift mutation, you isolate a mutant in which this frameshift is suppressed. You therefore expect to find which of the following associated with the suppression? (Assume the frameshift has not been corrected in the coding for the peptide.)

- A) suppressor tRNAs encode an amino acid for a stop signal
- B) suppressor tRNAs encode a four-nucleotide anticodon
- C) suppressor tRNAs encode a two-nucleotide anticodon
- D) both choices B and C
- E) all of the above

Answer: <https://biology-forums.com/index.php?topic=278162>

Question 17

Which of the following cytoskeletal proteins can be found in prokaryotes?

- A) crescentin
- B) tubulin
- C) keratin
- D) vimentin
- E) actin

Answer: <https://biology-forums.com/index.php?topic=277879>

Question 18

In the Sanger method of DNA sequencing, incorporation of the nucleotides stops because

- A) the dideoxynucleotide analogs have no 3'-OH group to continue DNA synthesis.
- B) the dideoxynucleotide analogs have no 5'-OH group to continue DNA synthesis.
- C) the dideoxynucleotide analogs have no 2'-OH group to continue DNA synthesis.
- D) the mixture is heated to 92°C to stop DNA synthesis at specific time intervals.
- E) the dideoxynucleotide analogs are in greater concentration than the actual nucleotides.

Answer: <https://biology-forums.com/index.php?topic=278018>