

Question 1

Almost all irreversible enzyme inhibitors bind noncovalently to the enzyme.

T/F?

Answer: <https://biology-forums.com/index.php?topic=662871>

Question 2

The affinity of the lac repressor for DNA _____ markedly when the inducer binds to the lac repressor.

Answer: <https://biology-forums.com/index.php?topic=663263>

Question 3

The trp operon is transcribed when the trp repressor is bound to tryptophan.

T/F?

Answer: <https://biology-forums.com/index.php?topic=663270>

Question 4

The oxidation of glucose to lactate has a standard free energy change of approximately -196 kJ/mol. Calculate the efficiency of energy conversion if the standard free energy change for the production of ATP from ADP and inorganic phosphate is +32.2 kJ/mol.

Answer: <https://biology-forums.com/index.php?topic=662940>

Question 5

Many biochemical reactions that form biopolymers from monomeric units involve the removal of water.

T/F?

Answer: <https://biology-forums.com/index.php?topic=662668>

Question 6

Which of the following statements is FALSE?

- A) Organisms are open systems as they can exchange both energy and materials with their environments.
- B) In an open system energy can be converted from one form into another.
- C) Organisms are open systems as they can create energy from their environments.
- D) Energy can be transferred between a system and the surroundings.
- E) In biochemical processes, energy can neither be created or destroyed.

Answer: <https://biology-forums.com/index.php?topic=662711>

Question 7

Alignment of conserved sequences in promoters recognized by E. coli RNA polymerase revealed two _____ sequences upstream of the transcribed region, which are separated by similar lengths of DNA.

Answer: <https://biology-forums.com/index.php?topic=663209>

Question 8

The Pasteur effect describes the observation that yeast-metabolizing glucose anaerobically will dramatically increase their rate of glucose utilization when provided with air.

T/F?

Answer: <https://biology-forums.com/index.php?topic=662948>

Question 9

The Q cycle is responsible for transferring electrons from a two-electron donor _____ to a one-electron acceptor _____ at the point of complex III of the mitochondrial respiratory chain.

Answer: <https://biology-forums.com/index.php?topic=662980>

Question 10

The A band of skeletal muscle is formed by noncovalent cross-bridges between the thin filaments that are mainly _____ and the thick filaments that are mainly _____.

Answer: <https://biology-forums.com/index.php?topic=662833>

Question 11

Humans and great apes do not make the enzyme urate oxidase and are hence prone to gout from the crystallization of _____ in synovial fluid of joints.

Answer: <https://biology-forums.com/index.php?topic=663107>

Question 12

Receptor tyrosine kinases are membrane-spanning proteins with an intrinsic tyrosine kinase domain on the extracellular side of the membrane.
T/F?

Answer: <https://biology-forums.com/index.php?topic=663122>

Question 13

All processing of eukaryotic mRNAs takes place in the nucleus after transcription has been completed.
T/F?

Answer: <https://biology-forums.com/index.php?topic=663225>

Question 14

Enzyme-catalyzed sequential reactions that make up a metabolic pathway are normally separated in the cell for equal access to reactants.
T/F?

Answer: <https://biology-forums.com/index.php?topic=662928>

Question 15

Energy derived from oxidation of acetyl-CoA in the citric acid cycle is used for the production of _____ in brown adipose tissue because the mitochondria are rich in UCP1.

Answer: <https://biology-forums.com/index.php?topic=662987>

Question 16

Which of the following is NOT an electron acceptor in the mitochondrial respiratory chain?

- A) FMN
- B) FAD
- C) Fe³⁺
- D) Cu²⁺
- E) CoQH₂

Answer: <https://biology-forums.com/index.php?topic=662975>

Question 17

Pentoses and hexoses can form stable ring structures by internal hemiacetal formation.

T/F?

Answer: <https://biology-forums.com/index.php?topic=662883>

Question 18

Which of the following types of reaction does NOT occur in glycolysis?

- A) Isomerization
- B) Nucleophilic attack
- C) Aldol condensation
- D) Oxidation
- E) Dehydration

Answer: <https://biology-forums.com/index.php?topic=662933>