

BIO 220 Exam 2 Part 2

1. To which of the following does a competitive inhibitor most structurally resemble?
 - A. the active site
 - B. the allosteric site
 - C. the substrate
 - D. a coenzyme
2. Which of the following products is made during glycolysis?
 - A. NAD⁺
 - B. pyruvate
 - C. CO₂
 - D. two-carbon acetyl
3. Which of the following is an organism that obtains its energy from the transfer of electrons originating from chemical compounds and its carbon from an inorganic source?
 - A. chemoautotroph
 - B. chemoheterotroph
 - C. photoheterotroph
 - D. photoautotroph
4. Which of the following molecules is reduced?
 - A. NAD⁺
 - B. FAD
 - C. O₂
 - D. NADPH
5. Which of the following processes is not involved in the conversion of organic nitrogen to nitrogen gas?
 - A. nitrogen fixation
 - B. ammonification
 - C. nitrification
 - D. denitrification
6. Which of the following is not a commercially important fermentation product?
 - A. ethanol
 - B. pyruvate
 - C. butanol
 - D. penicillin

7. Enzymes work by which of the following?
- A. increasing the activation energy
 - B. reducing the activation energy
 - C. making exergonic reactions endergonic
 - D. making endergonic reactions exergonic
8. During which of the following is ATP not made by substrate-level phosphorylation?
- A. Embden-Meyerhof Glycolysis pathway
 - B. Transition reaction
 - C. Krebs cycle
 - D. Entner-Doudoroff pathway
9. During the catabolism of glucose, which of the following is produced only in the Krebs cycle?
- A. ATP
 - B. NADH
 - C. NADPH
 - D. FADH₂
10. Which is the location of electron transports systems in prokaryotes?
- A. the outer mitochondrial membrane
 - B. the cytoplasm
 - C. the inner mitochondrial membrane
 - D. the cytoplasmic membrane
11. Which is the source of the energy used to make ATP by oxidative phosphorylation?
- A. oxygen
 - B. high-energy phosphate bonds
 - C. the proton motive force
 - D. P_i
12. Which of the following refers to a germicide that can kill vegetative cells and certain enveloped viruses but not endospores?
- A. high-level germicide
 - B. intermediate-level germicide
 - C. low-level germicide
 - D. sterilant

13. A cell might perform anaerobic respiration for which of the following reasons?
- A. It lacks glucose for degradation.
 - B. It lacks the transition reaction to convert pyruvate to acetyl-CoA.
 - C. It lacks Krebs cycle enzymes for processing acetyl-CoA to CO₂.
 - D. It lacks a cytochrome oxidase for passing electrons to oxygen.
14. Which of the following is the purpose of fermentation?
- A. to make ATP
 - B. to make carbon molecule intermediates for anabolism
 - C. to make NADH
 - D. to make NAD⁺
15. Which molecule typically serves as the final electron acceptor during fermentation?
- A. oxygen
 - B. NAD⁺
 - C. pyruvate
 - D. CO₂
16. Which fermentation product is important for making bread rise?
- A. ethanol
 - B. CO₂
 - C. lactic acid
 - D. hydrogen gas
17. During the light-dependent reactions, which molecule loses an electron?
- A. a light-harvesting pigment molecule
 - B. a reaction center pigment molecule
 - C. NADPH
 - D. 3-phosphoglycerate
18. In prokaryotes, in which direction are hydrogen ions pumped by the electron transport system of photosynthetic membranes?
- A. to the outside of the plasma membrane
 - B. to the inside (cytoplasm) of the cell
 - C. to the stroma
 - D. to the intermembrane space of the chloroplast
19. Which of the following does not occur during cyclic photophosphorylation in cyanobacteria?

- A. electron transport through an ETS
- B. photosystem I use
- C. ATP synthesis
- D. NADPH formation

20. Which of the following are two products of the light-dependent reactions?

- A. glucose and NADPH
- B. NADPH and ATP
- C. glyceraldehyde 3-phosphate and CO_2
- D. glucose and oxygen

21. Which of the following is the group of archaea that can use CO_2 as their final electron acceptor during anaerobic respiration, producing CH_4 ?

- A. methylotrophs
- B. methanotrophs
- C. methanogens
- D. anoxygenic photosynthesizers

22. The biogeochemical cycle of which of the following elements is based on changes in solubility rather than redox chemistry?

- A. carbon
- B. sulfur
- C. nitrogen
- D. phosphorus

23. Which of the following is suitable for use on tissues for microbial control to prevent infection?

- A. disinfectant
- B. antiseptic
- C. sterilant
- D. water

24. Which biosafety level is appropriate for research with microbes or infectious agents that pose moderate risk to laboratory workers and the community, and are typically indigenous?

- A. BSL-1
- B. BSL-2
- C. BSL-3
- D. BSL-4

25. Which of the following best describes a microbial control protocol that inhibits the growth of molds and yeast?
- A. bacteriostatic
 - B. fungicidal
 - C. bactericidal
 - D. fungistatic
26. Which of the following terms is used to describe the time required to kill all of the microbes within a sample at a given temperature?
- A. D-value
 - B. thermal death point
 - C. thermal death time
 - D. decimal reduction time
27. Which of the following microbial control methods does not actually kill microbes or inhibit their growth but instead removes them physically from samples?
- A. filtration
 - B. desiccation
 - C. lyophilization
 - D. nonionizing radiation
28. Which of the following chemical food preservatives is used in the wine industry but may cause asthmatic reactions in some individuals?
- A. nitrites
 - B. sulfites
 - C. propionic acid
 - D. benzoic acid
29. Bleach is an example of which group of chemicals used for disinfection?
- A. heavy metals
 - B. halogens
 - C. quats
 - D. bisbiguanides
30. Which type of test is used to determine whether disinfectant solutions actively used in a clinical setting are being used correctly?
- A. disk-diffusion assay
 - B. phenol coefficient test
 - C. in-use test
 - D. use-dilution test

31. The effectiveness of chemical disinfectants has historically been compared to that of which of the following?

- A. phenol
- B. ethyl alcohol
- C. bleach
- D. formaldehyde