BIOLOGY: Chapter 7 Test Review

1. What is the ultimate source of energy for living things?
2. When molecules are broken apart in respiration the energy released is channeled into what compound?
3. List four facts about ATP.
4. Which part of the energy-releasing pathway can convert all carbon that enters into CO_2?
5. What type of respiration liberates the most energy in the form of ATP?
6. What is the final electron acceptor in the electron transport chain?
7. List the first three steps of aerobic respiration in order.
8. In what step is the greatest number of ATP molecules produced?
9. Before a glucose molecule can be broken down to release energy what must two ATP molecules be used to phosphorylate?
10. Glycolysis depends upon a continuous supply of _____.
11. Glycolysis results in the production of what substance?
12. What are the end products of Glycolysis?
13. How many ATP molecules (net yield) are produced per molecule of glucose broken down during glycolysis?
14. The conversion of PGAL to pyruvate involves substrate-level _____.
15. In the breakdown of glucose, what is the name of the 3-carbon compound formed?
16. Pyruvate can be regarded as the end product of what step?
17. What carrier molecule can be reduced during both glycolysis and the Krebs cycle?
18. Where does the Krebs cycle take place?
19. The breakdown of pyruvate in the Krebs cycle results in the release of what two things?
20. To break down a glucose molecule completely requires how many passes through the Krebs cycle?
21. Name the first stable intermediate produced in the Krebs cycle.
22. Name the last intermediate produced in the Krebs cycle.
23. During which phase of aerobic respiration is ATP produced directly by substrate-level phosphorylation?
24. Name the process that is a transition from glycolysis to the Krebs cycle.
25. When glucose is used as the energy source, the largest amount of ATP is produced in what stage?
26. Name the stage when NADH transfers electrons to oxygen.
27. During electron transport phosphorylation, what type of ions accumulates in the outer compartment of the mitochondria?
28. Name the ultimate electron acceptor in aerobic respiration.
29. Name one compound that is not ordinarily capable of being reduced at any time.
30. Hydrogen ions diffuse from the outer to the inner compartment of the mitochondria through what molecule?
31. How many ATPs typically form during the last stage of aerobic respiration?
32. The first forms of life that produced ATP probably used pathways similar to what two types of respiration?
33. What two things are produced from yeast fermentation?
34. Under anaerobic conditions, muscle cells produce what substance?
35. Sour cream and sour milk are produced by bacteria that form what substance?
36. If fermentation follows glycolysis, the two NADH molecules produced during glycolysis will be used to reduce pyruvate into what?
37. Fermentation may occur in a muscle under what type of condition?
38. If you were searching for anaerobic bacteria, you would not look for them in what type of area?
39. Why is lactate production in muscle cells only temporary?
40. Lactic acid fermentation is seen in what types of muscle fibers?
41. When blood glucose levels decrease (as between meals), what reserves are tapped?
42. Glucagon prompts what organ(s) to convert glycogen to glucose?
43. Where is glucose converted into glycogen?
44. Glycogen makes up what percentage of a human's energy reserves?