

Biology 9th

Literature, Russian Literature



Biology 9th Chapter 7 Review N. Bouhout 1) The molecule made during glycolysis that is used later in steps of fermentation is pyruvic acid. 2) The molecule made during the later steps in fermentation that is used in glycolysis is NAD^+ . 3) The molecules that the Krebs cycle makes that the electron transport chain uses are pyruvates. 4) The molecule that will determine whether pyruvic acid will undergo fermentation or be converted for entry into Krebs cycle is oxygen. 5) Oxygen will determine whether pyruvic acid will undergo lactic acid fermentation or alcoholic fermentation. 6) C 7) D 8) A 9) B 10) A 11) B 12) B 13) C 14) A 15) D 16) The events that occur from the end of glycolysis through the first reaction of the Krebs cycle is that first pyruvic acid enters the mitochondria by removing carbon and two oxygen. Later when the carbon dioxide is removed, energy is released and NAD^+ is converted into NADH . Coenzyme A then attaches to the remaining acetyl forming acetyl CO . 17) Most eukaryotic cells produce fewer than 38 ATP molecules for every glucose molecule that is oxidized by aerobic respiration is because the NADH that is made in the cytosol during glycolysis cannot diffuse through the inner membrane of the mitochondrion, it must be transported into the mitochondrial matrix. So as a result the active transport of NADH consumes ATP releasing only 36 ATP molecules. 18) Anaerobic pathway differs from the pathways of aerobic respiration at the sites they occur in eukaryotic cells by the presence of oxygen. In anaerobic pathways the oxygen is absent and no additional ATP is yield and aerobic respiration when the oxygen is present and it produces larger amount of ATP. 19) When you exercise too strenuously your muscles become fatigued and sometimes develop cramps it's because of the increased acidity reducing the capacity of

the cells to contract. 20) Aerobic respiration ultimately depends on photosynthesis because glucose which is broken down in respiration is the energy bearing molecule made in photosynthesis. Also, oxygen which is the final electron acceptor is a waste product of breaking water molecules in photosynthesis. 21) In aerobic respiration, chemiosmosis is the process by which the concentration gradient of protons drives the synthesis of ATP. 22) In aerobic respiration, oxygen is the final acceptor of electrons which allows additional electrons to pass along the chain. It also accepts the protons that were once part of hydrogen atoms supplied by NADH and FADH₂. As a result oxygen forms water. 23) Four carbon atoms are in each of the compounds represented by the letters A-E. Critical Thinking: 1) Humans need nutritious food rich in vitamins and minerals that are capable of producing chemical reactions that are required for us to function normally. 2) The folding of the inner mitochondrial membrane benefits the aerobic respiration because it allows more oxygen to be stored. 3) I can explain this observation because when oxygen is present, the products of glycolysis enter the pathways of aerobic respirations and it then produces a larger amount of ATP. However when oxygen is absent, the products enter fermentation pathways that yield no additional ATP. 4) Your body requires more oxygen in the blood to perform whatever strenuous task it is. Therefore, your lungs contract to acquire more oxygen to get into your blood stream. It continues because your body still requires it so your blood pressure doesn't drop. 5) Prokaryotic cells are more efficient because the materials do not have to pass through the membranes (mitochondria, etc) which cost energy in eukaryotic cells. 6) Cyanide kills the mitochondria and other molecules that produce ATP.