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| |  | | --- | | http://www.castlelearning.com/review/Courses/le/bio1.gif?v=200101040341201.  Which metabolic process is most closely associated with the organelle represented in the diagram?   1. intracellular digestion 2. cellular respiration 3. synthesis of glycogen 4. hydrolysis of lipid |  |  | | --- | | 2.  Which substances are inorganic compounds?   1. water and salts 2. proteins and carbohydrates 3. fats and oils 4. enzymes and hormones |   3.  A green plant is kept in a brightly lighted area for 48 hours. What will most likely occur if the light intensity is then reduced slightly during the next 48 hours?   1. Photosynthesis will stop completely. 2. The rate at which nitrogen is used by the plant will increase. 3. The rate at which oxygen is released from the plant will decrease. 4. Glucose production inside each plant cell will increase.   4. Which substance is an inorganic compound?   1. water 2. glucose 3. maltase 4. insulin | |  | | --- | | 6.  What is a direct result of aerobic respiration?   1. The potential energy of glucose is transferred to ATP molecules 2. The enzymes for anaerobic respiration are produced and stored in lysosomes 3. Lactic acid is produced in muscle tissue 4. Alcohol is produced by yeast and bacteria |   7.  Which term includes all the activities required to keep an organism alive?   1. growth 2. excretion 3. metabolism 4. nutrition   8.  An inorganic molecule required by green plants for the process of photosynthesis is   1. oxygen 2. starch 3. carbon dioxide 4. glucose   9.  The process of osmosis would explain the net movement of water into a cell if the percentage of   1. water was 90% inside the cell and 95% outside the cell 2. protein was 30% inside the cell and 35% outside the cell 3. water was 95% inside the cell and 90% outside the cell 4. water and protein was equal inside and outside the cell |

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| 5.  Which process requires cellular energy?   1. diffusion 2. passive transport 3. active transport 4. osmosis  |  | | --- | |  | | 10.  Which statement best describes the plasma membrane of a living plant cell?   1. It selectively regulates the passage of substances into and out of the cell. 2. It is composed of proteins and carbohydrates only. 3. It has the same permeability to all substances found inside or outside the cell. 4. It is a double protein layer with floating lipid molecules. |   11.  An organism was added to a test tube containing water, which was then sealed and placed in sunlight. The graph shows an increase in the oxygen content of the test tube over a period of time. Which type of organism was most probably added to the test tube?   1. http://www.castlelearning.com/review/Courses/le/bio153.gif?v=20010104034506fresh-water animal 2. green alga 3. ameba 4. virus |

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| 12.  Which statement best describes animals that are heterotrophs?   1. They are able to convert light energy into useful chemical bond energy. 2. They are able to synthesize organic nutrients from inorganic raw materials. 3. They are unable to consume preformed organic compounds. 4. They are unable to synthesize organic nutrients from inorganic raw materials.  |  | | --- | | 13.  The main result of aerobic respiration is the   1. conversion of radiant energy into chemical energy 2. production of lactic acid as an end product 3. storage of energy in a polysaccharide 4. production of ATP from the breakdown of glucose |   --------------   |  | | --- | | 14.  Which process is *not* included in heterotrophic nutrition?   1. ingestion 2. photosynthesis 3. egestion 4. digestion |   --------------   |  | | --- | | 15.  Most of the reactions of aerobic cellular respiration occur within the organelle known as the   1. lysosome 2. nucleus 3. mitochondrion 4. vacuole |   --------------   |  | | --- | | 16.  What is the basic unit of structure and function in all living things?   1. cell 2. tissue 3. organ 4. system |   -------------- | |  | | --- | | 17.  Which elements are present in all organic compounds?   1. hydrogen and oxygen 2. nitrogen and oxygen 3. nitrogen and carbon 4. hydrogen and carbon |   --------------   |  | | --- | | 18.  Photosynthesis is the process by which   1. the potential energy of simple sugars is transferred to ATP molecules 2. simple sugars are gradually broken down to form lactic acid or alcohol 3. two simple sugar molecules combine to form maltose and water 4. light energy is converted into the chemical energy of simple sugars |   --------------   |  | | --- | | 19.  Which substance is needed for aerobic cellular respiration to occur?   1. oxygen 2. carbon dioxide 3. nitrogen 4. methane |   -------------- |

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| |  |  | | --- | --- | | 20.   |  | | --- | | http://www.castlelearning.com/review/Courses/le/BIO303.gif?v=20010104034930  **Figure 3** |   The diagram represents a white blood cell engulfing some bacteria. The structure labeled *X* is most likely a   1. nucleus 2. centriole 3. ribosome 4. vacuole |   --------------   |  | | --- | | 21.  Which gas is excreted as a waste product of autotrophic nutrition in maple trees?   1. nitrogen 2. oxygen 3. carbon dioxide 4. methane |   --------------   |  | | --- | | 22.  Most of the oxygen gas present in the atmosphere is produced as a result of   1. photosynthesis 2. cellular respiration 3. dehydration synthesis 4. decomposition |   --------------   |  | | --- | | 23.  Which formula represents an organic compound?   1. Mg(OH)2 2. NaCl 3. C12H22O11 4. NH3 |   -------------- |

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| |  |  |  | | --- | --- | --- | | 24.  Which diagram represents an organelle that contains the enzymes needed to synthesize ATP in the presence of oxygen?   |  |  | | --- | --- | | 1. http://www.castlelearning.com/review/Courses/le/q760-1.gif?v=20070801012238 2. http://www.castlelearning.com/review/Courses/le/q760-2.gif?v=20070801012237 | 1. http://www.castlelearning.com/review/Courses/le/q760-3.gif?v=20070801012235 2. http://www.castlelearning.com/review/Courses/le/q760-4.gif?v=20070801012240 | |   -------------- |

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| |  |  | | --- | --- | | 25.   |  | | --- | | http://www.castlelearning.com/review/Courses/le/BIO385.gif?v=20010104035524  **Figure 4** |   Which cell structure is represented by the three-dimensional diagram?   1. chloroplast 2. mitochordrion 3. plasma membrane 4. replicated chromosome |   --------------   |  | | --- | | 26.  The transfer of energy from nutrients to ATP is accomplished most directly by the process of   1. cyclosis 2. diffusion 3. cellular respiration 4. glucose synthesis |   -------------- | |  |  | | --- | --- | | 27.   |  | | --- | | http://www.castlelearning.com/review/Courses/le/BIO406.gif?v=20010104035628  **Figure 5** |   The diagram shows a mitochondrian. All the arrows are associated with the process of   1. carbon fixation 2. photochemical reaction 3. synthesis 4. aerobic respiration |   --------------   |  |  | | --- | --- | | 28.   |  | | --- | | **[Refer to figure 5 in question 27]** |     The diagram shows a mitochondrian. Letter *X* most likely represents   1. ATP 2. maltose 3. lactic acid 4. PGAL |   -------------- |

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| |  |  | | --- | --- | | 29.   |  | | --- | | http://www.castlelearning.com/review/Courses/le/LE6002.gif?v=20010830012526  **Figure 6** |    A biologist observed a plant cell in a drop of water as shown in diagram *A*. The biologist added a 10% salt solution to the slide and observed the cell as shown in diagram *B*. The change in appearance of the cell resulted from   1. more salt moving out of the cell than into the cell 2. more salt moving into the cell than out of the cell 3. more water moving into the cell than out of the cell 4. more water moving out of the cell than into the cell |   --------------   |  | | --- | | 30.  The process of active transport requires the most direct use of   1. carbon dioxide 2. amino acids 3. ATP 4. glucose |   --------------   |  | | --- | | 31.  Which phrase best describes cellular respiration, a process that occurs continuously in the cells of organisms?   1. removal of oxygen from the cells of an organism 2. conversion of light energy into the chemical bond energy of organic molecules 3. transport of materials within cells and throughout the bodies of multicellular organisms 4. changing of stored chemical energy in food molecules to a form usable by organisms |   -------------- |  |

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| |  | | --- | | 32.  The energy an organism requires to transport materials and eliminate wastes is obtained directly from   1. DNA 2. starch 3. hormones 4. ATP |   --------------   |  |  | | --- | --- | | 33.   |  | | --- | | http://www.castlelearning.com/review/Courses/le/le1027.gif?v=20020724112754  **Figure 7** |   The diagram represents movement of a large molecule across a membrane.  Which process is best represented in this diagram?   1. active transport 2. diffusion 3. protein building 4. gene manipulation |   --------------   |  | | --- | | 34.  Both a deer and a tree react to changes in their external surroundings, helping them to maintain a constant internal environment. This statement describes   1. predation 2. homeostasis 3. antibiotic resistance 4. autotrophic nutrition |   -------------- |

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| |  | | --- | | 35.  In the diagram below, the dark dots indicate small molecules. These molecules are moving out of the cells, as indicated by the arrows. The number of dots inside and outside of the two cells represents the relative concentrations of the molecules inside and outside of the cells.  http://www.castlelearning.com/review/Courses/le/le010311.gif?v=20030528124400  ATP is being used to move the molecules out of the cell by   1. cell *A*, only 2. cell *B*, only 3. both cell *A* and cell *B* 4. neither cell *A* nor cell *B* |   --------------   |  | | --- | | 36.  Which letter indicates a cell structure that directly controls the movement of molecules into and out of the cell?  http://www.castlelearning.com/review/Courses/le/q1822-1.gif?v=20040206044510   1. *A* 2. *B* 3. *C* 4. *D* |   -------------- | |  | | --- | | 37.  Which sequence represents the correct order of levels of organization found in a complex organism?   1. cells → organelles → organs → organ systems → tissues 2. tissues → organs → organ systems → organelles → cells 3. organelles → cells → tissues → organs → organ systems 4. organs → organ systems → cells → tissues → organelles |   --------------   |  | | --- | | 38.  Which process is directly used by autotrophs to store energy in glucose?   1. diffusion 2. photosynthesis 3. respiration 4. active transport |   --------------   |  | | --- | | 39.  The diagram below represents two single-celled organisms.  http://www.castlelearning.com/review/Courses/le/q1913-1.gif?v=20040316092732  These organisms carry out the activities needed to maintain homeostasis by using specialized internal   1. tissues 2. organelles 3. systems 4. organs |   -------------- |

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