Name:_____
Date:_____

Biology Practice EOC

1.___ Which organelle is primarily responsible for producing ATP during cellular respiration?

A. Ribosome | B. Mitochondrion | C. Chloroplast | D. Endoplasmic reticulum

2.___ In pea plants, purple flowers (P) are dominant over white flowers (p). What is the probability of two heterozygous (Pp) parents having offspring with white flowers?

A. 0% | B. 25% | C. 50% | D. 75%

3.___ Which of the following provides the best evidence for evolution?

A. The number of offspring produced | B. Similar bone structures in different species | C. Differences in diet among species | D. Physical fitness of organisms

4.___ Which of the following human activities has the greatest potential to disrupt the carbon cycle?

A. Overfishing | B. Deforestation | C. Wind energy production | D. Recycling

5.___ Which equation correctly represents photosynthesis?

A. $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O +$ energy | B. $CO_2 + H_2O +$ sunlight $\rightarrow C_6H_{12}O_6 + O_2$ | C. $C_6H_{12}O_6 \rightarrow$ lactic acid + ATP | D. $O_2 + ATP \rightarrow CO_2 +$ glucose

6.___ A student wants to know if fertilizer affects plant growth. Which of the following is the best hypothesis?

A. Fertilizer is good for plants. | B. Plants are green and need sunlight. | C. If fertilizer is added to the soil, then plant height will increase. | D. Different plants grow in different ways.

7.___ What process moves water across a semi-permeable membrane from high to low concentration?

A. Active transport | B. Endocytosis | C. Osmosis | D. Exocytosis

8.___ During translation, the mRNA codon AUG codes for which amino acid?

A. Glycine | B. Serine | C. Methionine | D. Alanine

9.___ What is the function of enzymes in biological systems?

A. Provide structural support | B. Store genetic information | C. Speed up chemical reactions | D. Transport substances across membranes

10.___ Which of the following best describes the role of DNA in cells?

A. Produces energy | B. Carries genetic information | C. Digests old organelles | D. Packages proteins

11.___ What structure do plant cells have that animal cells do not?

A. Nucleus | B. Cell wall | C. Mitochondria | D. Ribosomes

12.___ Which statement best explains why cells divide?

A. To increase genetic variation | B. To allow multicellular organisms to grow | C. To produce energy | D. To absorb nutrients

13.___ In a food web, which organisms are typically the primary producers?

A. Herbivores | B. Carnivores | C. Plants | D. Decomposers

14.___ Which macromolecule contains the instructions for making proteins?

A. Carbohydrates | B. Lipids | C. Nucleic acids | D. Proteins

15.___ Which type of reproduction results in offspring that are genetically identical to the parent?

A. Sexual | B. Asexual | C. Pollination | D. Fertilization

16.___ Which process is responsible for genetic variation in sexually reproducing organisms?

A. Mitosis | B. Replication | C. Meiosis | D. Translation

17.___ What is the end product of meiosis?

A. Two identical cells | B. Four genetically identical cells | C. Four genetically different cells | D. One large cell

18.___ Which of the following is an example of a biotic factor in an ecosystem?

A. Temperature | B. Water | C. Grass | D. Soil

19.___ What does a Punnett square show?

A. Number of chromosomes | B. Possible genetic combinations of offspring | C. Sequence of DNA bases | D. Amount of protein produced

20.___ A change in the DNA sequence of a gene is called a:

A. Mutation | B. Translation | C. Transcription | D. Replication

21.___ Which organelle is responsible for packaging proteins for export?

A. Nucleus B. Golgi apparatus C. Ribosome D. Lysosome

22.___ What type of molecule is made up of amino acids?

A. Carbohydrates B. Lipids C. Nucleic acids D. Proteins

23.___ What is the main function of the circulatory system?

A. Break down food B. Pump blood and transport nutrients C. Control body functions D. Fight infections

24.___ In ecological succession, what is the first species to inhabit a barren environment called?

A. Climax community B. Primary consumer C. Pioneer species D. Invasive species

25.___ What is the primary function of the cell membrane?

A. Provide energy B. Control what enters and exits the cell C. Produce proteins D. Store nutrients

26.___ Which best describes natural selection?

A. Organisms adapt when they want to B. Traits acquired in life are inherited C. Organisms better suited to their environment survive and reproduce D. Evolution occurs by chance

27.___ Which of the following occurs during interphase?

A. Chromosomes align in the middle of the cell B. DNA is replicated C. The nucleus disappears D. The cell divides

28.___ What do all living organisms have in common?

A. They breathe oxygen B. They are made of cells C. They have a backbone D. They photosynthesize

29.___ Which part of the DNA molecule determines genetic traits?

A. The sugar B. The phosphate group C. The order of nitrogen bases D. The hydrogen bonds

30.___ What role do decomposers play in an ecosystem?

A. Capture energy from the sun B. Prey on other organisms C. Break down dead organisms D. Compete with producers

31.___ Which kingdom includes only multicellular autotrophs?

A. Animalia B. Fungi C. Plantae D. Protista

32.___ Which process forms gametes in humans?

A. Fertilization | B. Mitosis | C. Meiosis | D. Cloning

33.___ What is biodiversity?

A. A variety of cells in an organism | B. Different climates in a region | C. The variety of life in an ecosystem | D. An organism's DNA structure

34.___ What organelle is responsible for photosynthesis?

A. Mitochondrion | B. Chloroplast | C. Nucleus | D. Ribosome

35.___ Which type of RNA carries the genetic code from the DNA to the ribosome?

A. mRNA | B. tRNA | C. rRNA | D. dRNA

36.___ What is an example of homeostasis?

A. Cells dividing rapidly | B. Sweating to cool down | C. Breathing faster while exercising | D. Both B and C

37.___ Which term best describes an organism that feeds on both plants and animals?

A. Herbivore | B. Carnivore | C. Omnivore | D. Producer

38.___ Which of the following is the correct sequence of ecological organization from smallest to largest?

A. Community → Population → Organism → Ecosystem | B. Organism → Population → Community → Ecosystem | C. Population → Organism → Ecosystem → Community | D. Ecosystem → Community → Population → Organism

39.___ The ultimate source of energy for nearly all life on Earth is:

A. Water | B. Oxygen | C. The Sun | D. Glucose

40.___ What does the theory of endosymbiosis explain?

A. How chloroplasts and mitochondria originated as separate prokaryotic organisms that were engulfed by ancestral eukaryotes | B. How DNA is replicated in eukaryotic cells | C. Why some cells form tissues while others do not | D. How enzymes speed up cellular respiration