Science 9

Biology I-III Practice Quiz /20

Name: Key
Date:
Block:

This practice test is designed to help you determine what concepts you DO know and more importantly what concepts you DO NOT know!

Go through the practice test THREE times:
(1) On your own (2) With your notes (3) With another student

Each time, if you cannot answer a question, draw a circle around it to identify that you should review this concept when preparing for the test.

Multiple Choice. Choose the BEST answer *(1 mark each)*

B 1. Which structure controls what enters and leaves a cell?
- a. Nucleus
- b. Cell membrane
- c. Ribosome
- d. Mitochondria

A 2. Which base does thymine always pair with?
- a. Adenine
- b. Cytosine
- c. Guanine
- d. Thymine

D 3. Which of the following best describes binary fission?
- a. A form of asexual reproduction in which spores are created.
- b. The transfer of genetic material directly from one cell to another.
- c. The fusing together of two cells to form one.
- d. A form of asexual reproduction through cell elongation and then division.

C 4. Reproduction by vegetative propagation occurs when
- a. Amoebas divide in half
- b. Planaria are cut in half and grow back the missing parts
- c. A tree produces new green shoots in springtime
- d. Yeast cells produce new smaller cells that break off and float away

B 5. The stage of mitosis during which the nucleolus and nuclear membrane disappear is
- a. Anaphase
- b. Prophase
- c. Telophase
- d. Metaphase

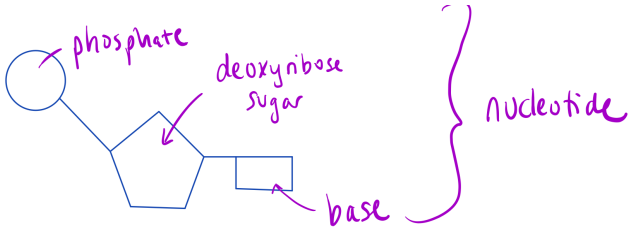
Short Answers.

1. Write out the complementary sequence of the following DNA strand *(1 mark)*

Strand 1: **C C A T G G T C A**

Strand 2: G G T A C C A G T

2. Draw and label the 3 parts of a nucleotide *(3 marks)*



3. What are 2 advantages and 1 disadvantage of asexual reproduction? *(3 marks)*

Advantage 1: Only one parent needed (no need to spend energy to find a mate)

Advantage 2: Reproduction occurs quickly

Disadvantage 1: Lack of genetic diversity

4. What method does a planarian (flatworm) use to reproduce asexually? Describe this method of reproduction *(2 marks)*

Method: Fragmentation

Description: Organisms break into two or more fragments that develop into a brand new individual

5. What stage does a cell spend most of its life cycle in? What is it doing during this time? *(2 marks)*

Interphase - the cell grows larger and doubles the number of organelles
- DNA in the nucleus is copied
- Creates a centrosome (aids during cell division by pulling the chromatids apart)

6. Describe what is happening to DNA during the 4 phases of mitosis *(4 marks)*

Prophase - DNA condenses into duplicated chromosomes

Metaphase - Chromosomes line up along the middle of the cell

Anaphase - Sister chromatids get pulled apart to each end of the cell

Telophase - Chromosomes decompress
- 2 nuclei form → each nucleus contains a complete copy of cell's DNA