Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cell Communication & Cell Cycle

Independent Questions 9-15

9. Which of the following describes the events of apoptosis?

A) The cell dies, it is lysed, its organelles are phagocytized, and its contents are recycled.

B) The cell's DNA and organelles become fragmented, the cell dies, and it is phagocytized.

C) The cell's DNA and organelles become fragmented, the cell shrinks and forms blebs, and the cell's parts are packaged in vesicles that are digested by specialized cells.

D) The cell's nucleus and organelles are lysed, then the cell enlarges and bursts.

Bloom's Taxonomy: Knowledge/Comprehension

Section: 11.5

10. Phosphorylation cascades involving a series of protein kinases are useful for cellular signal transduction because they \_\_\_\_\_.

A) are species specific

B) always lead to the same cellular response

C) amplify the original signal many times

D) counter the harmful effects of phosphatases

Bloom's Taxonomy: Knowledge/Comprehension

Section: 11.4

11. Protein phosphorylation is commonly involved with all of the following EXCEPT \_\_\_\_\_.

A) regulation of transcription by extracellular signaling molecules

B) enzyme activation

C) activation of G protein-coupled receptors

D) activation of protein kinase molecules

Bloom's Taxonomy: Application/Analysis

Section: 11.3

12. If there are 20 duplicated chromosomes in a cell, how many centromeres are there?

A) 10

B) 20

C) 30

D) 40

Bloom's Taxonomy: Application/Analysis

Section: 12.1

13. Some cells have several nuclei per cell. How could such multinucleated cells be explained?

A) The cell underwent repeated cytokinesis but no mitosis.

B) The cell underwent repeated mitosis with simultaneous cytokinesis.

C) The cell underwent repeated mitosis, but cytokinesis did not occur.

D) The cell had multiple S phases before it entered mitosis.

Bloom's Taxonomy: Application/Analysis

Section: 12.2

14. If there are 20 centromeres in a cell at anaphase, how many chromosomes are there in each daughter cell following cytokinesis?

A) 10

B) 20

C) 40

D) 80

Bloom's Taxonomy: Application/Analysis

Section: 12.2

15. Which of the following is a protein synthesized at specific times during the cell cycle that associates with a kinase to form a catalytically active complex?

A) PDGF

B) MPF

C) cyclin

D) Cdk

Bloom's Taxonomy: Application/Analysis

Section: 12.3