Principles of Human Anatomy 14th edition Tortora Test Bank

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Package Title: Testbank
Course Title: pha14
Chapter Number: 02

Question type: Multiple Choice

1) Extracellular fluid includes all of the following except:

a) interstitial fluid
b) plasma
c) cytosol
d) lymph

Answer: c

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

2) In passive processes, substances move across the plasma membrane
1. with the use of ATP
2. up (or against) a concentration gradient
3. down (or along) a pressure gradient
4. equally in all directions

a) 3 only
b) 2 only
c) 1, 2, 3
d) 2, 3, 4

Answer: a

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

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3) Which of the following is true regarding receptor-mediated endocytosis?

a) Vesicles transport receptors back to the plasma membrane.
b) A ligand binds specifically with a receptor on the extracellular surface of the plasma membrane.
c) Some transport vesicles fuse with a lysosome, which essentially breaks down the contents.
d) All of the choices are correct.

Answer: d

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

4) Which of the following structures is not bounded by a membrane?

a) ribosome
b) lysosome
c) nucleus
d) Golgi complex

Answer: a

Difficulty: Easy
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

5) Rough endoplasmic reticulum differs from smooth endoplasmic reticulum in that it has _____ associated with it; therefore rough endoplasmic reticulum assists in the production and temporary storage of _____.

a) inclusions, cytosol
b) lysosomes, lipids
c) ribosomes, lysosomes
d) ribosomes, proteins

Answer: d

Difficulty: Easy

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Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

6) Organelles that are similar to small lysosomes, contain enzymes, and are important in detoxification are called _____.

a) ribosomes
b) mitochondria
c) peroxisomes
d) centrosomes

Answer: c

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

7) A normal human body cell contains _____ chromosomes and a normal unfertilized human oocyte (egg) contains _____ chromosomes.

a) 46, 22
b) 44, 22
c) 46, 46
d) none of these choices is correct

Answer: d

Difficulty: Medium
Bloom's: Analysis
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.2 Discuss the stages, events, and significance of reproductive cell division.
Section Reference 1: Sec 2.5 Cell Division

8) Which of the following is not located in the nucleus?

a) histones
b) chromatin

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c) endosome
d) nucleolus

Answer: c

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.4 Describe the structure and functions of the nucleus.
Section Reference 1: Sec 2.4 Nucleus

9) What two processes must occur in order for a cell to divide to produce two new cells?

a) mitosis and meiosis
b) nuclear division and cytokinesis
c) anabolism and catabolism
d) autophagy and endocytosis

Answer: b

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

10) The stages of the cell cycle occur in the following order:

a) G1, S, G2, mitosis
b) S, G1, G2, interphase
c) G1, G2, S, mitosis
d) G1, G2, S, interphase

Answer: a

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

11) Which of the following events does not occur during prophase of mitosis?

a) The nucleolus and the nuclear membrane disintegrate.
b) Each chromosome replicates so that it becomes a double-stranded structure.
c) Centrosomes start to form the mitotic spindle.
d) Chromosomes become visible due to the shortening and condensation of chromatin.

Answer: b

Difficulty: Hard
Bloom's: Synthesis
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

12) Which of the following contributes to aging?

a) increased synthesis of protein
b) viral invasion of cells
c) free radical damage to protein and DNA
d) decreased autoimmune response

Answer: c

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.7 Describe the cellular changes that occur with aging.
Section Reference 1: Sec 2.7 Aging and Cells

13) Which of the following is not a function of the smooth endoplasmic reticulum in the liver?

a) It removes toxic wastes.
b) It contains calcium ions which are released to cause contraction.
c) It releases glucose into the blood.
d) All of these choices are functions of the smooth endoplasmic reticulum in the liver.

Answer: b

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

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14) Proteins that will be exported from the cell are produced by

a) ribosomes inside mitochondria
b) ribosomes found in lysosomes
c) ribosomes attached to rough endoplasmic reticulum
d) ribosomes attached to smooth endoplasmic reticulum

Answer: c

Difficulty: Medium
Bloom's: Analysis
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

15) The process that results in the destruction of the "webbing" found between the digits of the hand and foot in early human fetal development is called

a) necrosis
b) metaplasia
c) apoptosis
d) dysplasia

Answer: c

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

16) A cell is recognized as "self" or "non-self" by its

a) mitochondria
b) rough endoplasmic reticulum
c) glycocalyx
d) lysosomes

Answer: c

Difficulty: Medium
Bloom's: Application

Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.1 Describe the structure and functions of the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

17) When charged, medium-sized molecules like glucose and amino acids move across a membrane from high to low concentration, the following process has occurred.

a) simple diffusion
b) osmosis
c) active transport involving membrane proteins
d) facilitated diffusion

Answer: d

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

18) Which of the following is NOT characteristic of a cell's nucleus?

a) Assembly of amino acids into proteins occurs in the nucleus.
b) The nucleolus synthesizes ribosomal RNA.
c) A pair of chromatids constitute a chromosome during cell division.
d) Assembly of ribosomes occurs in the nucleus.

Answer: a

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.4 Describe the structure and functions of the nucleus.
Section Reference 1: Sec 2.4 Nucleus

Question type: True/False

19) Protein molecules form the basic framework of the plasma membrane.

Answer: False

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane
Study Objective 2: SO 2.2.1 Describe the structure and functions of the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

20) Cytosol is an example of intracellular fluid.

Answer: True

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

21) Active transport of molecules across cell membranes requires adenosine triphosphate (ATP) for energy.

Answer: True

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

22) Endocytosis is the reverse of exocytosis and pinocytosis is the reverse of phagocytosis.

Answer: False

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

23) Diffusion and osmosis are passive processes that occur primarily due to the kinetic energy of molecules.

Answer: True

Difficulty: Easy
Bloom's: Comprehension
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

24) All cells of the body have at least one nucleus.

Answer: False

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.4 Describe the structure and functions of the nucleus.
Section Reference 1: Sec 2.4 Nucleus

25) The Golgi complex packages and sorts proteins destined for export from a cell.

Answer: True

Difficulty: Easy
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

26) Lysosomes contain enzymes that digest the contents of phagocytic vesicles, pinocytic vesicles, and endosomes.

Answer: True

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

27) Microtubules form the structure of microvilli.

Answer: False

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

28) The mitotic spindle consists of microtubules.

Answer: True

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

29) When glucose bonds to proteins in tissues, it contributes to the stiffening and loss of elasticity that occur in aging tissues.

Answer: True

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.7 Describe the cellular changes that occur with aging.
Section Reference 1: Sec 2.7 Aging and Cells

30) A neoplasm can result from uncontrolled cell division.

Answer: True

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.7 Describe the cellular changes that occur with aging.
Section Reference 1: Sec 2.7 Aging and Cells

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31) The proteins found in the phospholipid bilayer permit the movement of most substances, including oxygen and carbon dioxide, across the membrane.

Answer: False

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.1 Describe the structure and functions of the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

32) Meiosis occurs in two stages and results in two daughter cells that are identical to the original cell.

Answer: False

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: 2.5.2 Describe the stages, events, and significance of reproductive cell division.
Section Reference 1: Sec 2.5 Cell Division

Question type: Essay

33) Draw and label a portion of a plasma membrane showing the molecular components of the membrane. Explain why "fluid mosaic" is a good description of the plasma membrane structure.

Answer:

Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.1 Describe the structure and functions of the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: See Figure 2.2. The molecular arrangement of the plasma membrane resembles an ever-moving sea of lipids that contains a "mosaic" of many different proteins. The proteins may float freely like icebergs or be bound in specific locations. The lipids prevent entry and exit of many substances while the proteins permit movement of specific water-soluble substances through the membrane.

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34) Explain how the rough endoplasmic reticulum, smooth endoplasmic reticulum, and Golgi complex interact. Use specific examples of materials produced by each.

Answer:

Difficulty: Hard
Bloom's: Synthesis
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: Ribosomes on the RER synthesize proteins destined for export from the cell, use by other organelles, or incorporation into the plasma membrane. Once these proteins are made on the ribosomes, they pass through the RER where sugars or lipids might be added. They then travel via vesicles to the Golgi where further processing, alterations, and packaging occurs. They are released within vesicles from the Golgi to travel to their final destination. The SER is found only in certain cells and has specialized functions. For instance, SER in the liver is involved with converting glucose to glycogen (and vice versa) and detoxifies drugs. SER in skeletal muscle stores calcium ions necessary for muscle contraction.

35) Integral membrane proteins play important roles in certain transport mechanisms. What roles do they play in osmosis, facilitated diffusion, and active transport?

Answer:

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: Integral membrane proteins act as gatekeepers in the plasma membrane and permit the movement of certain substances into and out of the cell. Some proteins have open channels through which water may pass passively through the plasma membrane (osmosis). Others bind specifically to substances and may change shape to transport those substances into or out of the cell. If input of energy is required, it is an active process (active transport). If input of energy is not involved, it is passive (facilitated diffusion).

36) List and define: A) three passive processes and B) three active processes that move substances across cell membranes. Give an example of a molecule that is moved by each process.

Answer:

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Difficulty: Hard
Bloom's: Evaluation
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: See Table 2.1 for specifics.

37) For each stage of mitosis, give a two- or three-sentence description of events. Your answer should include the names of the four stages and proper use of the following terms: chromatin, chromosome, chromatid, and centromere.

Answer:

Difficulty: Hard
Bloom's: Synthesis
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division..
Section Reference 1: Sec 2.5 Cell Division
Solution: See Figure 2.18 for explanation of the steps.

38) Describe the structure and function of a mitochondrion. What are the important components located within this organelle and where is each one located? What overall process occurs primarily in the mitochondrion?

Answer:

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: See Figure 2.14. The mitochondrion is an organelle with a double-layered membrane. It is considered the powerhouse of the cell because it is the location where most ATP is produced. The inner membrane folds into cristae and contains the proteins necessary for the electron transport chain. The cristae effectively increase the surface area upon which cellular respiration may occur. The matrix, found in the center of the mitochondrion, contains enzymes that enable chemical reactions to occur. The mitochondrion contains its own DNA and can, therefore, replicate on its own.

39) Explain the difference between an oncogene and a proto-oncogene.

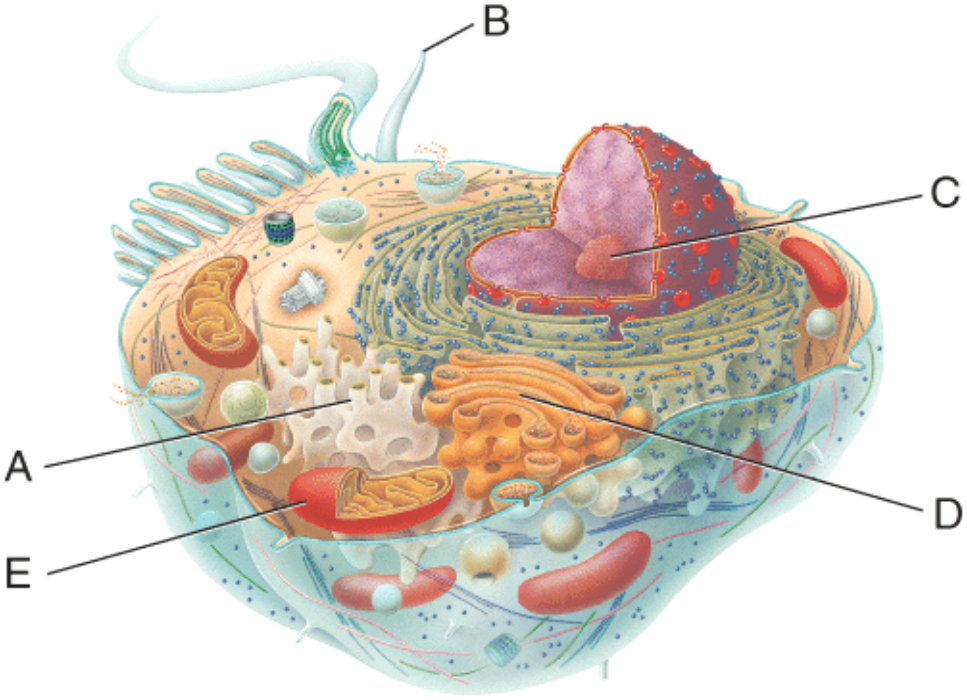
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Answer:

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.7 Describe the cellular changes that occur with aging.
Section Reference 1: Sec 2.7 Aging and Cells
Solution: Proto-oncogenes are normal genes that regulate growth and development. Through a series of mutations or changes the proto-oncogenes become cancer-causing genes called oncogenes that have the ability to transform a normal cell into a cancerous cell.

Question type: Text Entry

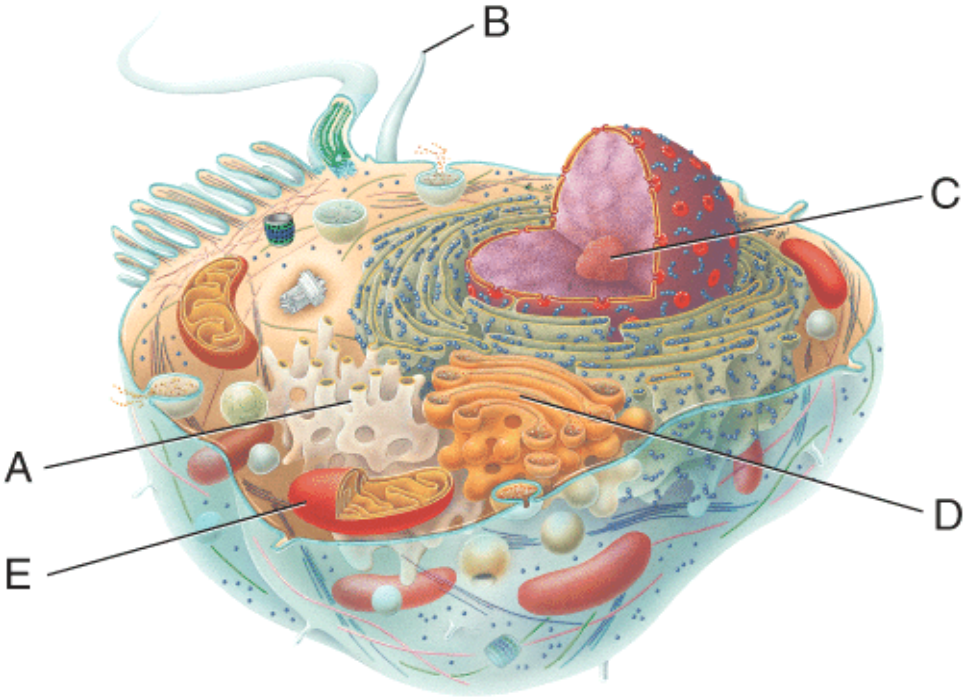
40) The letter A is pointing to the _____.



Answer: smooth endoplasmic reticulum

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: smooth endoplasmic reticulum

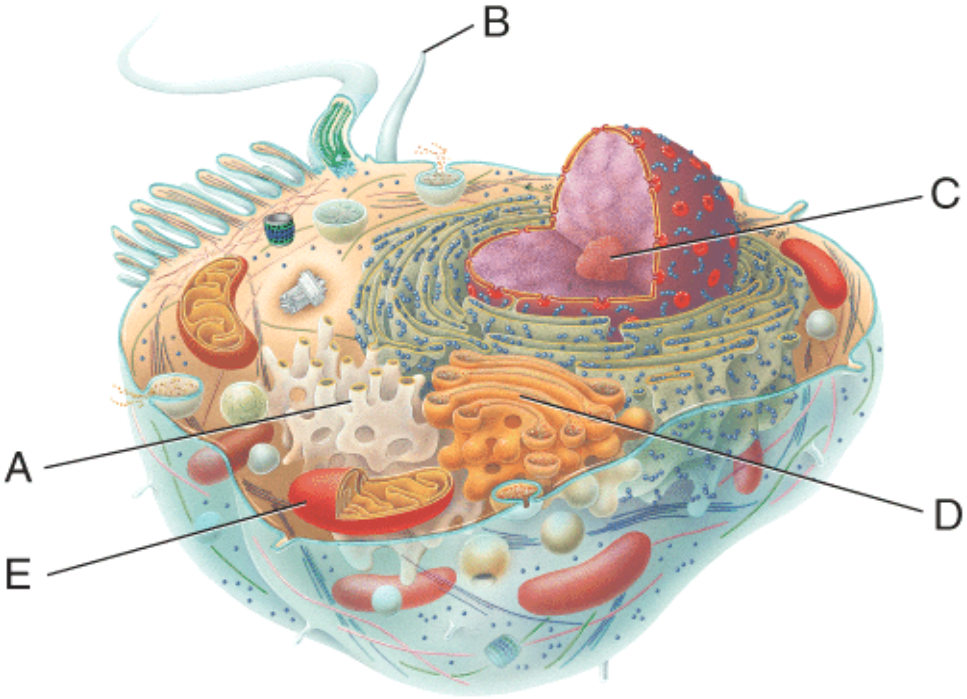
41) The letter B is pointing to a _____.



Answer: cilium

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: cilium

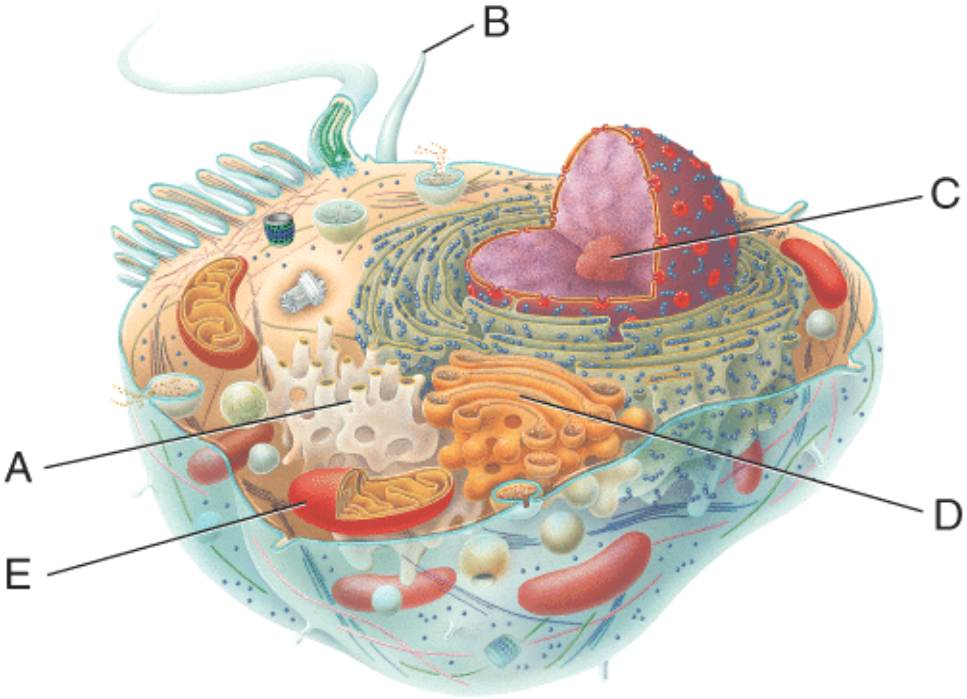
42) The letter C is pointing to the _____.



Answer: nucleolus

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.4 Describe the structure and functions of the nucleus
Section Reference 1: Sec 2.4 Nucleus
Solution: nucleolus

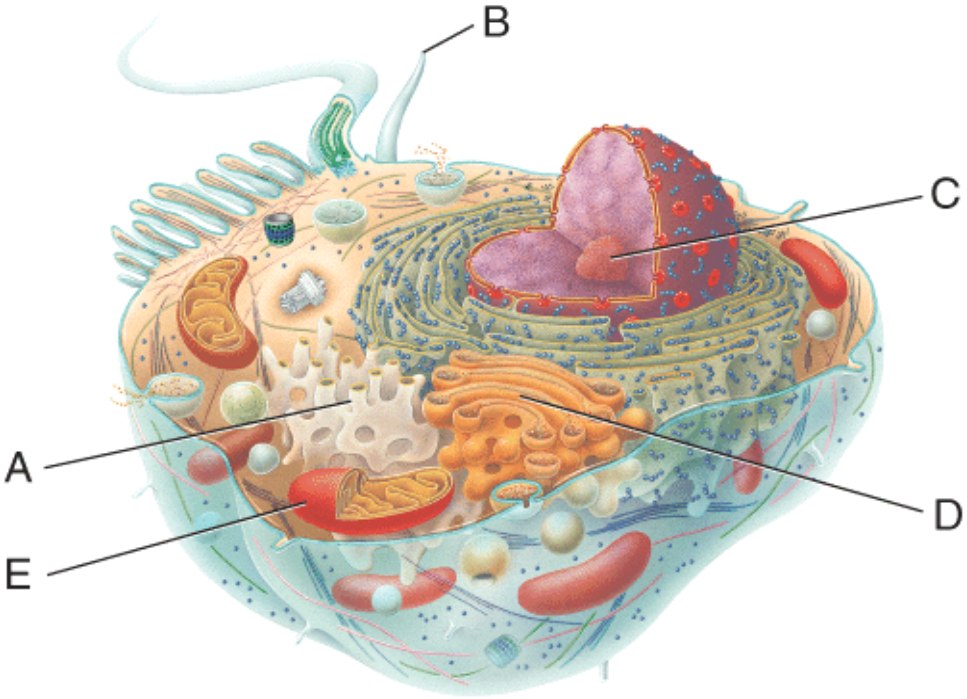
43) The letter D is pointing to the _____.



Answer: Golgi complex

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: Golgi complex

44) The letter E is pointing to a _____.



Answer: mitochondrion

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: mitochondrion

45) The plasma membrane is composed of two layers of _____ molecules with _____ molecules scattered throughout.

Answer: phospholipid, protein

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.1 Describe the structure and functions of the plasma membrane..
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: phospholipid, protein

46) Water travels continuously between interstitial fluid and intracellular fluid via the process of _____.

Answer: osmosis

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: osmosis

47) Smooth endoplasmic reticulum is the site of production of _____.

Answer: fatty acids and steroids

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: fatty acids and steroids

48) _____ is the process by which cell division results in two daughter cells that are identical to the original cell.

Answer: Mitosis

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division
Solution: Mitosis

49) The process in which lysosomes digest their host cell is called _____.

Answer: autolysis

Difficulty: Medium

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Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: autolysis

50) The contents in the innermost region of a mitochondrion is the _____.

Answer: matrix

Difficulty: Easy
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: matrix

51) The only human cell that has a flagellum is the _____ cell.

Answer: sperm

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: sperm

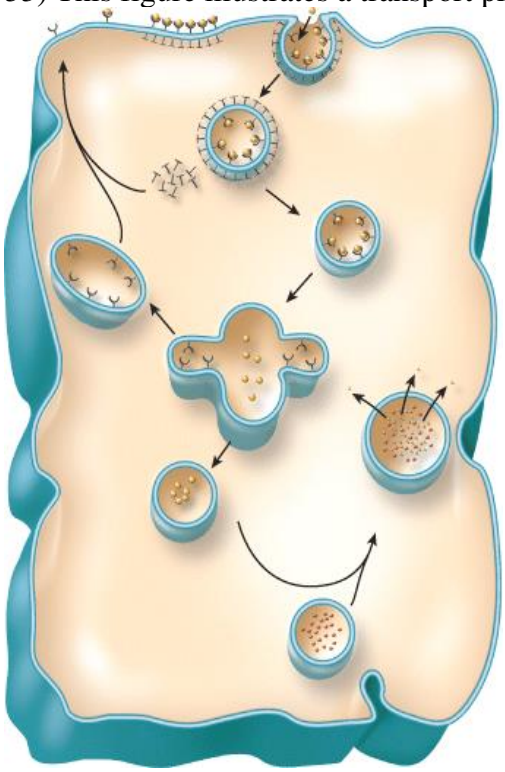
52) Somatic cell division involves the process of _____ and cytokinesis.

Answer: mitosis

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division
Solution: mitosis

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53) This figure illustrates a transport process known as _____.



Answer: receptor-mediated endocytosis

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: receptor-mediated endocytosis

54) The transport process that moves oxygen from the air sacs in the lungs into surrounding blood vessels is called _____.

Answer: diffusion

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane

Solution: diffusion

55) The process that allows digestive cells to secrete enzymes is called _____.

Answer: exocytosis

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: exocytosis

56) A mechanism that involves the formation of pseudopods in order to move solid particles into cells is called _____.

Answer: phagocytosis

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: phagocytosis

57) Most body cells can engulf small droplets of extracellular fluid through a process called _____.

Answer: pinocytosis

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: pinocytosis

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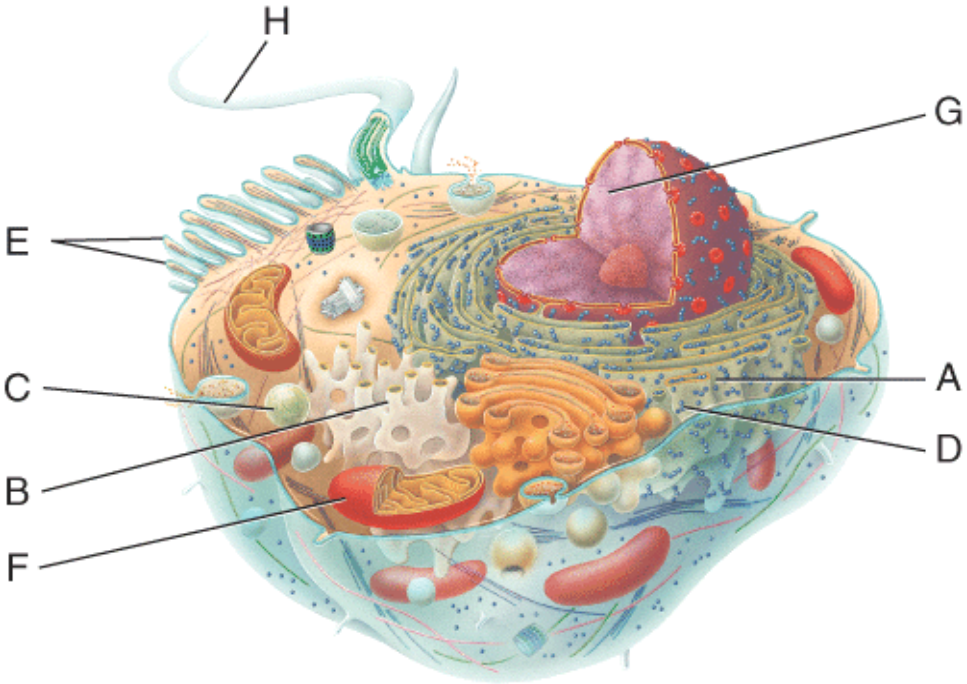
58) _____ maintains the unequal distribution of potassium and sodium ions across a nerve cell membrane.

Answer: Active transport

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.
Section Reference 1: Sec 2.2 The Plasma Membrane
Solution: Active transport

Question type: Multiple Choice

59) Which letter identifies the powerhouse of the cell?

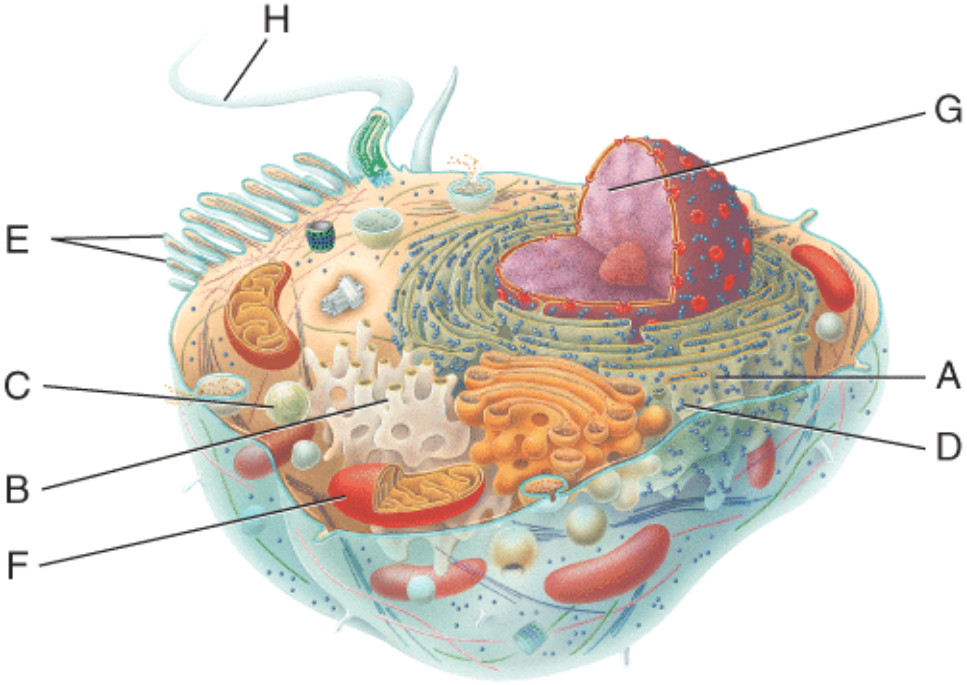


a) B
b) E
c) F
d) G

Answer: c

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

60) Which letter identifies the rough endoplasmic reticulum?



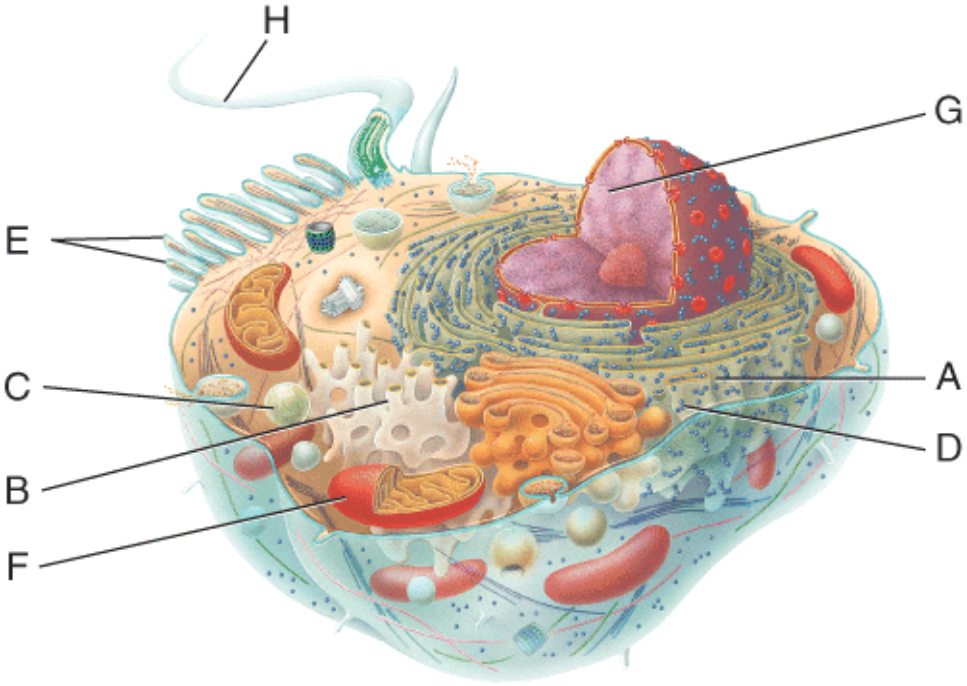
a) A
b) B
c) E
d) H

Answer: a

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

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61) Which letter identifies an organelle that may contain more than 40 digestive enzymes used to break down the contents of vesicles?

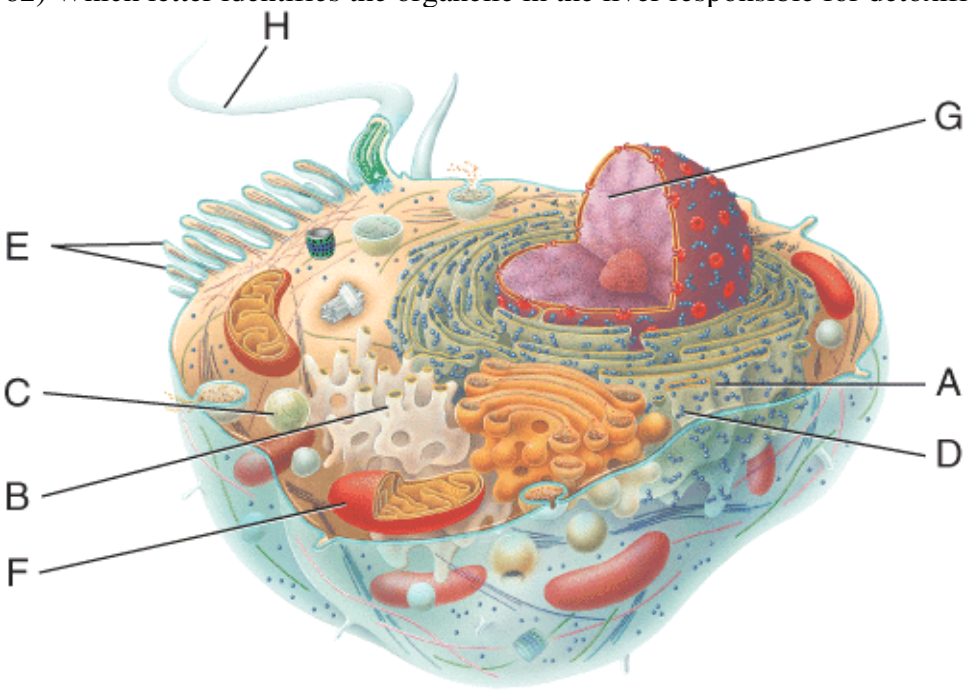


a) F
b) B
c) A
d) C

Answer: d

Difficulty: Hard
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

62) Which letter identifies the organelle in the liver responsible for detoxification?

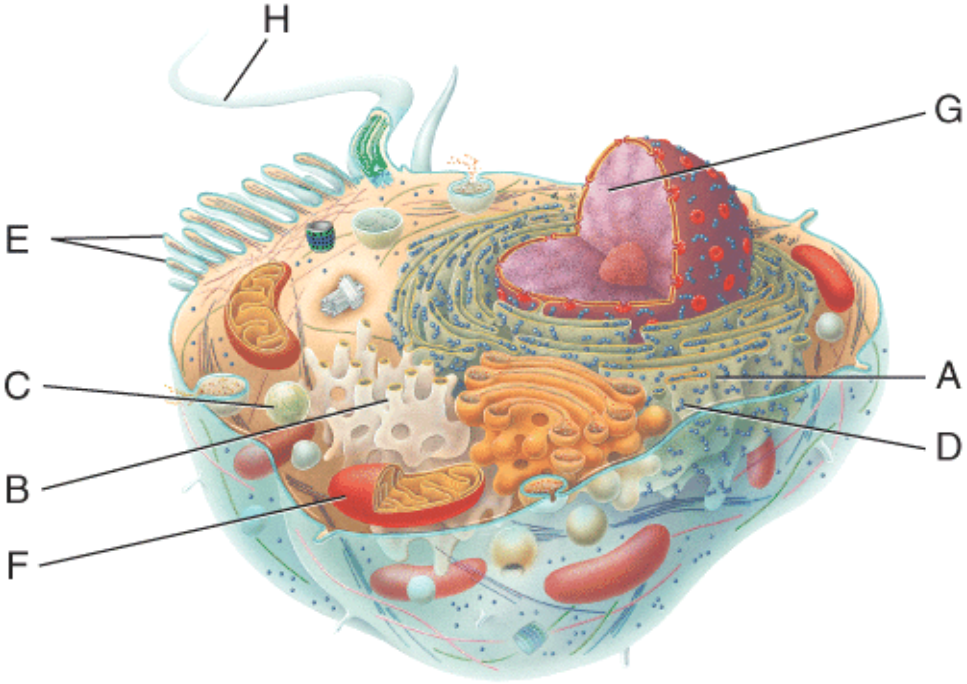


a) A
b) B
c) H
d) I

Answer: b

Difficulty: Hard
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

63) Which letter identifies microvilli?

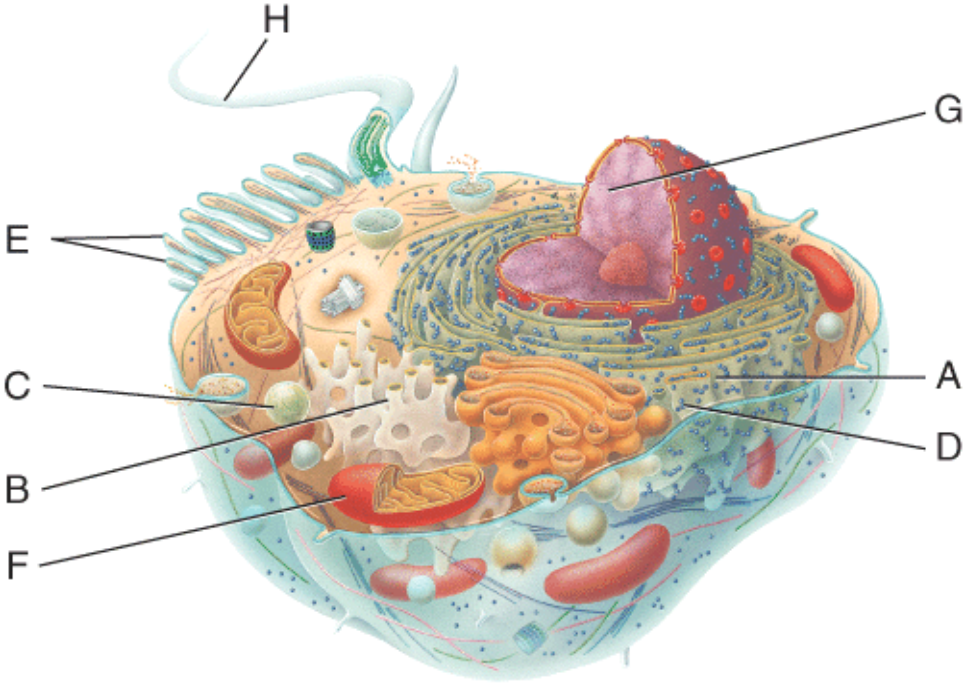


a) H
b) E
c) D
d) B

Answer: b

Difficulty: Easy
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

64) Which letter identifies the site of protein synthesis?



a) G
b) F
c) D
d) B

Answer: c

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

Question type: Essay

65) Higher and higher dosages of the drug are needed to achieve the original effect. This could result in an increased possibility of overdose and increased drug dependence." This described drug-tolerance is due to increasing amounts of cellular _____.

Answer:

Difficulty: Medium
Bloom's: Application

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: smooth endoplasmic reticulum

66) Meiosis I begins with a _____ (diploid/haploid) starting cell and ends with two cells, each with the _____ (diploid/haploid) number of chromosomes. During meiosis II, each of the two _____ (diploid/haploid) cells formed during meiosis I divides; the net result is four _____ (diploid/haploid) gametes that are genetically different from the original _____ (diploid/haploid) starting cell.

Answer:

Difficulty: Medium
Bloom's: Knowledge
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.2 Describe the stages, events, and significance of reproductive cell division.
Section Reference 1: Sec 2.5 Cell Division
Solution: diploid, haploid, haploid, haploid, diploid

67) Describe a function of microtubules.

Answer:

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: responsible for movement of chromosomes during cell division or structural and functional components of cilia and flagella

68) What is the function of microfilaments?

Answer:

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm

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Solution: they are formed from actin molecules and are involved in muscle contraction and cell locomotion or they provide mechanical support for microvilli

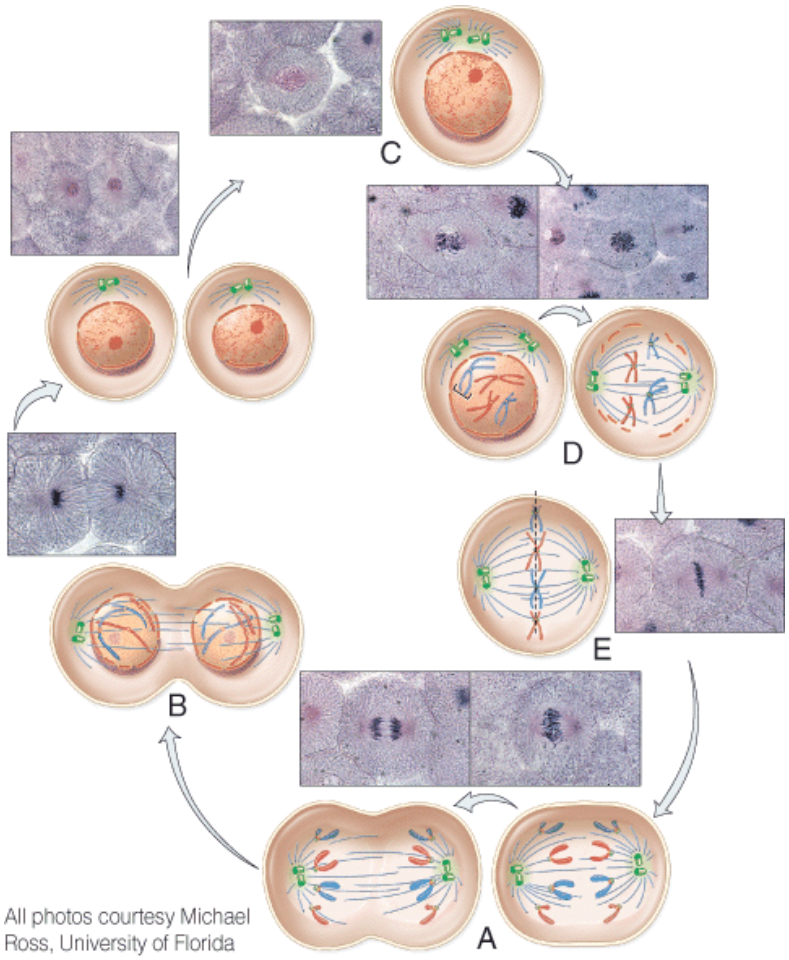
69) Name the organelle that acts as the site of protein synthesis. What two molecular components make up its structure?

Answer:

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: Sec 2.3 Cytoplasm
Solution: ribosomes; protein and rRNA

Question type: Multiple Choice

70) Which letter indicates interphase; the period during which DNA is replicated?

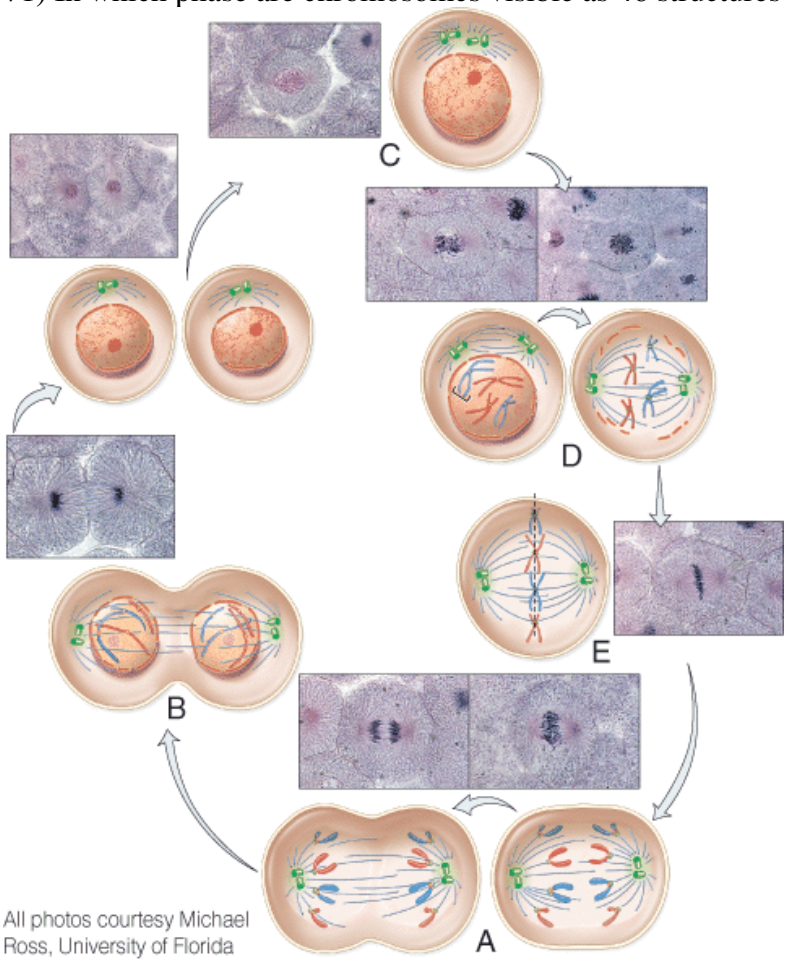


a) A
b) B
c) C
d) D
e) E

Answer: c

Difficulty: Medium
Bloom;s: Comprehension
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

71) In which phase are chromosomes visible as 46 structures that are not aligned?

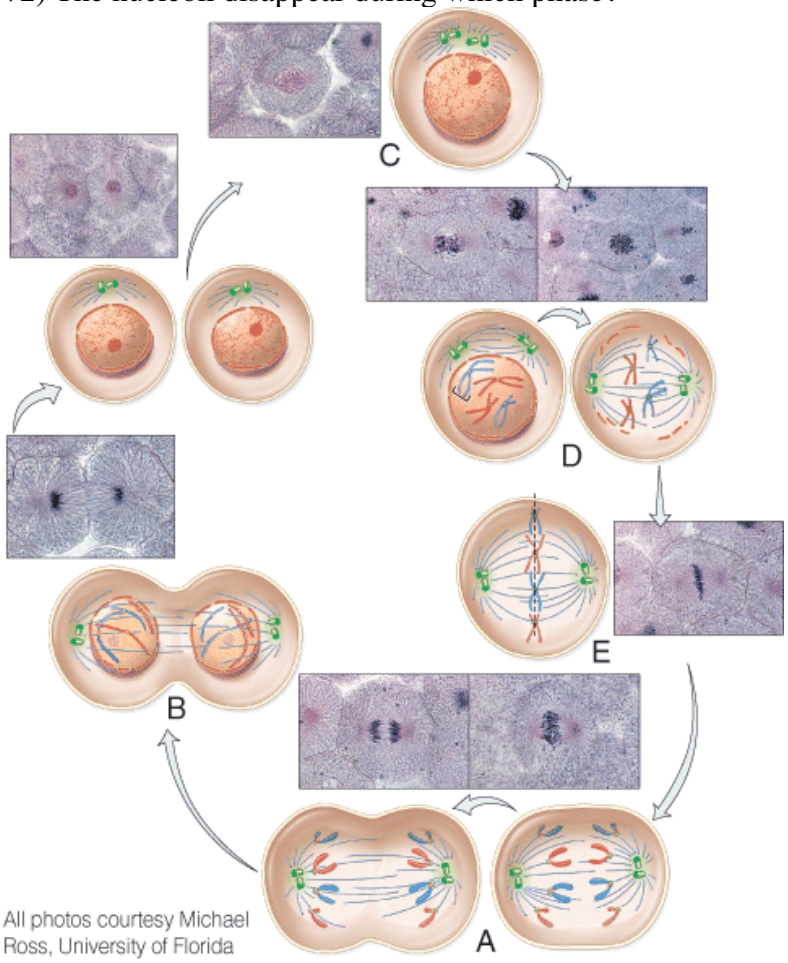


a) A
b) B
c) C
d) D
e) E

Answer: d

Difficulty: Easy
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

72) The nucleoli disappear during which phase?

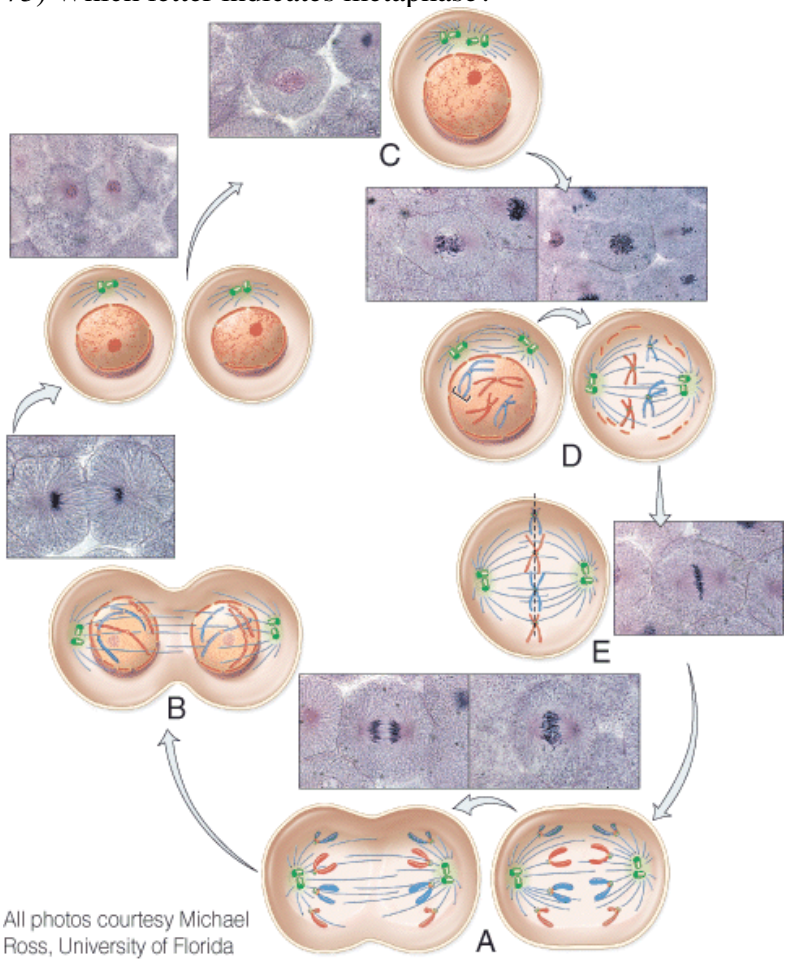


a) A
b) B
c) C
d) D
e) E

Answer: d

Difficulty: Medium
Bloom's: Comprehension
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

73) Which letter indicates metaphase?

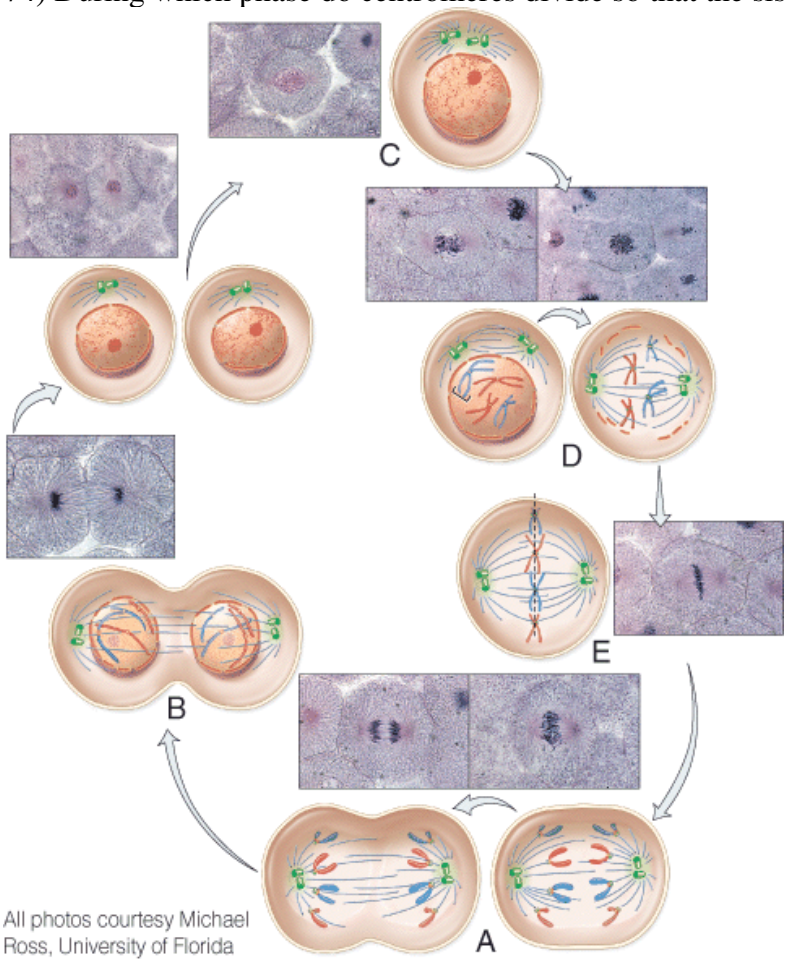


a) A
b) B
c) C
d) D
e) E

Answer: e

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

74) During which phase do centromeres divide so that the sister chromatids separate?



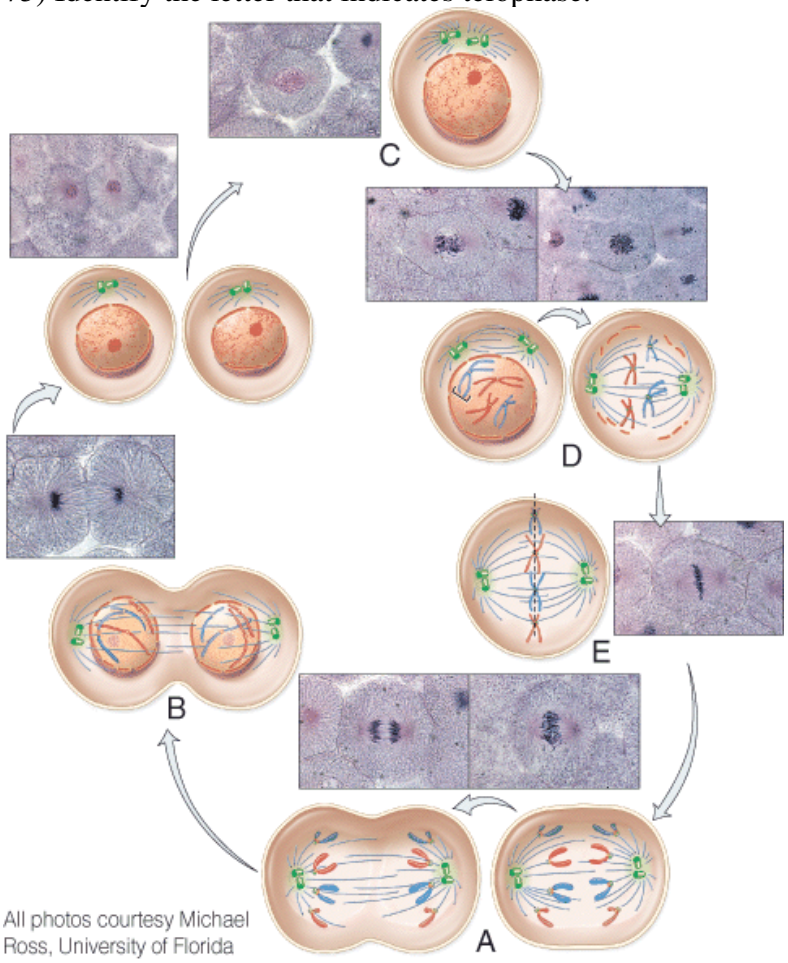
a) A
b) B
c) C
d) D
e) E

Answer: a

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division

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75) Identify the letter that indicates telophase.



a) A
b) B
c) C
d) D
e) E

Answer: b

Difficulty: Medium
Bloom's: Application
Study Objective 1: SO 2.5 Describe the stages, events and significance of somatic and reproductive cell division.
Study Objective 2: SO 2.5.1 Discuss the stages, events, and significance of somatic cell division.
Section Reference 1: Sec 2.5 Cell Division