Package Title: Testbank Course Title: pha13 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

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

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

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 these choices

Answer: d

Difficulty: Hard

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

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

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

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 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 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 c) endosome d) nucleolus
Answer: c
Difficulty: Medium 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

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

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

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

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 <u>liver</u>?
- 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

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

Section Reference 1: Sec 2.3 Cytoplasm

- 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

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

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

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

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

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

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

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

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

Answer: True

Difficulty: Easy

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

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

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

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

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

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

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

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

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

Study Objective 1: SO 2.7 Describe the cellular changes that occur with aging.

Section Reference 1: Sec 2.7 Aging and Cells

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

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

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

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.

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

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

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:

Difficulty: Hard

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

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

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

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.

### Answer:

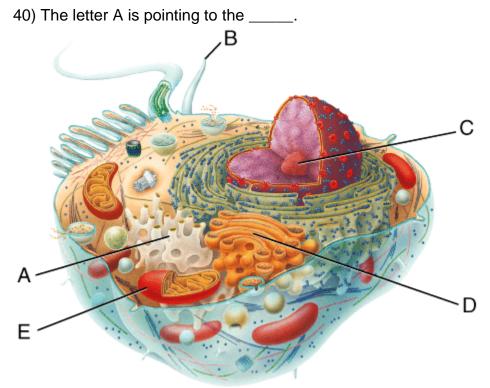
Difficulty: Medium

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



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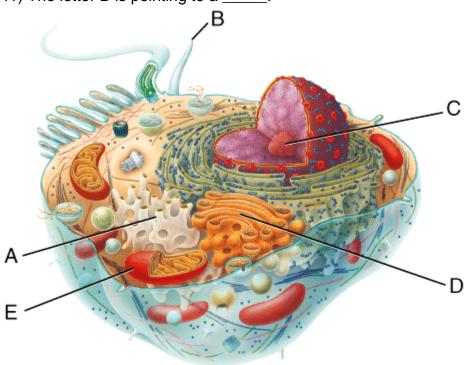
Difficulty: Easy

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 \_\_\_\_\_



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Answer: cilium

Difficulty: Easy

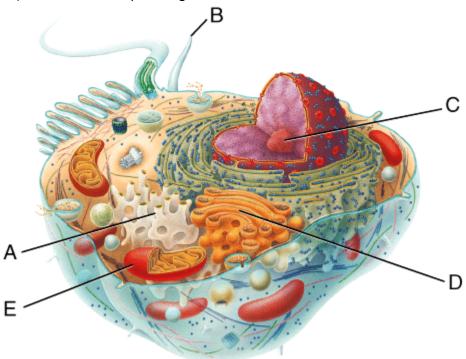
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

Section Reference 1: Sec 2.3 Cytoplasm

Solution: cilium

# 42) The letter C is pointing to the \_\_\_\_\_.



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Answer: nucleolus

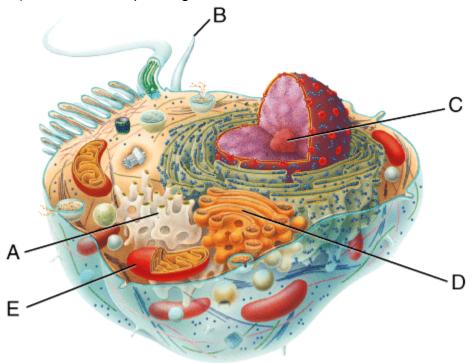
Difficulty: Easy

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 \_\_\_\_\_.



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Answer: Golgi complex

Difficulty: Easy

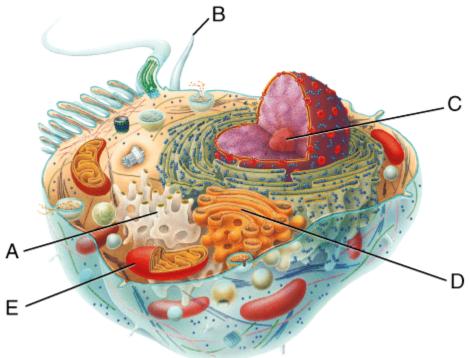
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

Section Reference 1: Sec 2.3 Cytoplasm

Solution: Golgi complex

44) The letter E is pointing to a \_\_\_\_\_.



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Answer: mitochondrion

Difficulty: Easy

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

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

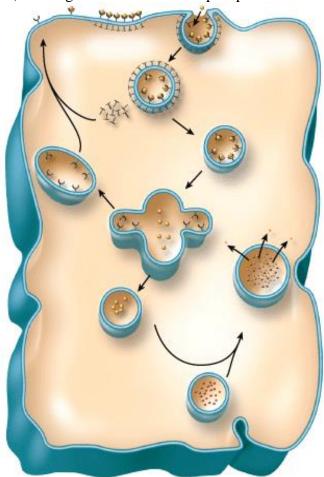
\_\_\_\_

Difficulty: Easy 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 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 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 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

Answer: osmosis

50) The contents in the innermost region of a mitochondrion is the
Answer: matrix
Difficulty: Easy 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 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 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

53) This figure illustrates a transport process known as \_\_\_\_\_.



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Answer: receptor-mediated endocytosis

Difficulty: Medium

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

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

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

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

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

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

Answer: Active transport

Difficulty: Medium

Study Objective 1: SO 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.

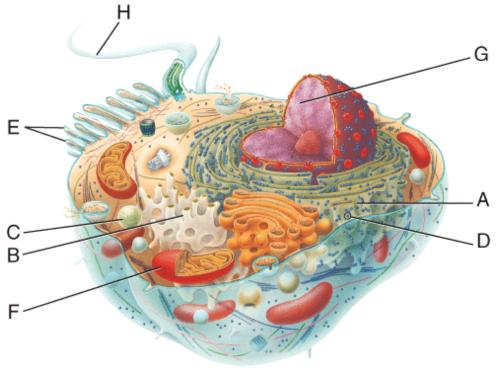
Study Objective 2: SO 2.2.2 Outline the processes that transport substances across the plasma membrane.

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?



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

## Answer: c

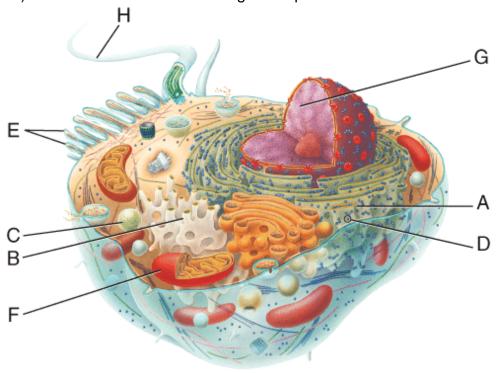
Difficulty: Medium

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?



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

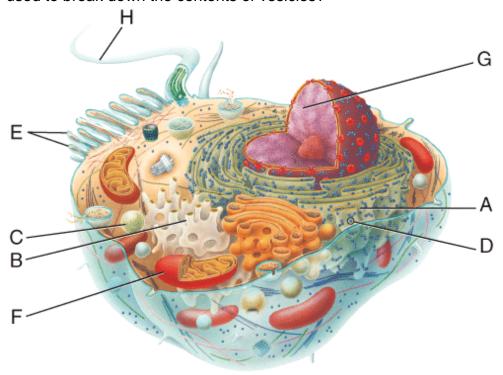
Answer: a

Difficulty: Easy

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

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



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

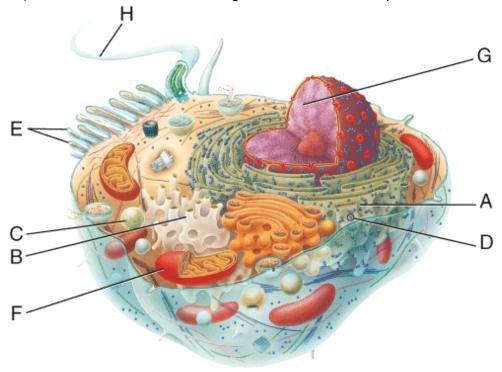
Answer: d

Difficulty: Hard

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

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



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

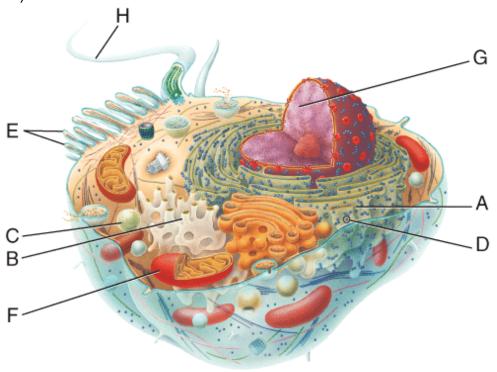
Answer: b

Difficulty: Hard

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

# 63) Which letter identifies microvilli?



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

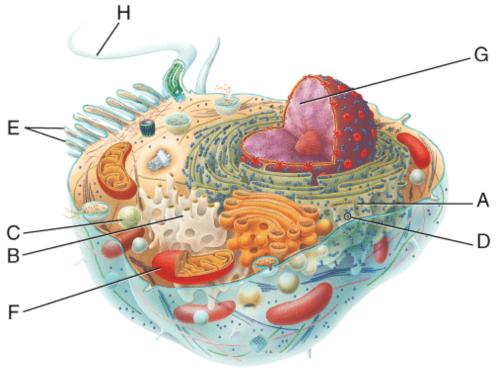
Answer: b

Difficulty: Easy

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

64) Which letter identifies the site of protein synthesis?



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

Answer: c

Difficulty: Medium

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 drugtolerance is due to increasing amounts of cellular \_\_\_\_\_.

Answer:

Difficulty: Medium

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	er of chromosomes. During meiosis II, each of the two
(diploid/haploid) cells formed duri	ing 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

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

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

Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

organelles.

Section Reference 1: Sec 2.3 Cytoplasm

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

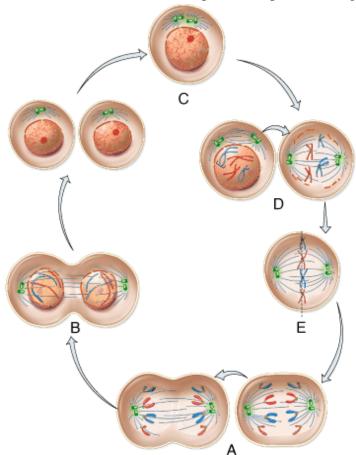
Study Objective 1: SO 2.3 Describe the structure and function of cytoplasm, cytosol, and

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?



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- a) A
- b) B
- c) C

- d) D
- e) E

## Answer: c

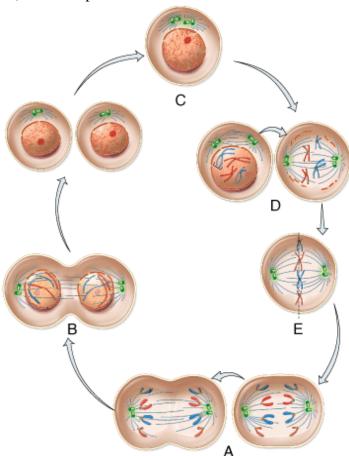
Difficulty: Medium

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?



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

Answer: d

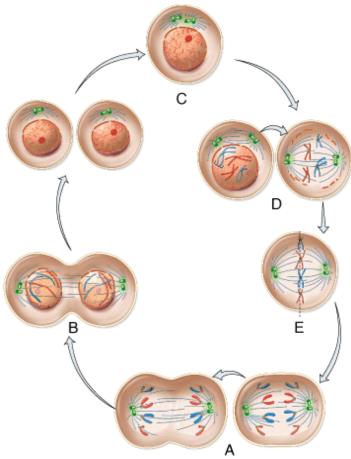
Difficulty: Easy

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?



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

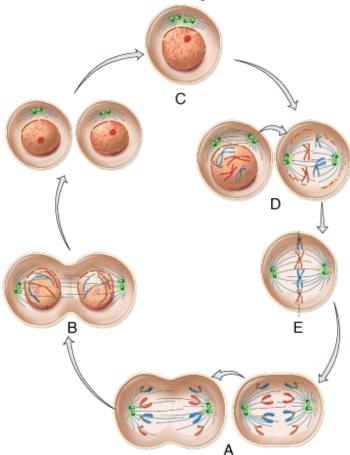
Answer: d

Difficulty: Medium

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?



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

## Answer: e

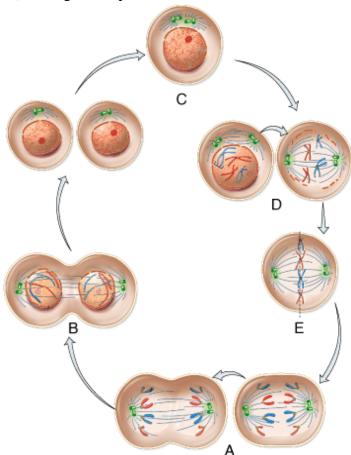
Difficulty: Medium

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?



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

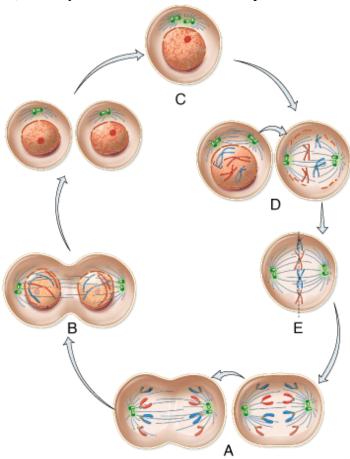
Answer: a

Difficulty: Medium

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

75) Identify the letter that indicates telophase.



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

Answer: b

Difficulty: Medium

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