

Package Title: Testbank
Course Title: pha12
Chapter Number: 02

Question type: Multiple Choice

1) Most plasma membranes contain:

- 1 sugars
- 2 microvilli
- 3 glycolipids
- 4 phospholipids
- 5 cholesterol
- 6 glycoproteins

- a) 1, 2, 3, 4, 5, 6
- b) 2, 4, 6
- c) 3, 4, 5, 6
- d) 2, 3, 4, 5

Answer: c

Difficulty: Medium

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

2) Which of the following is not true concerning peripheral proteins of the plasma membrane?

- a) some serve as cell identity markers
- b) some act as linking molecules between plasma membranes of adjacent cells
- c) some form diffusion pores in the plasma membranes
- d) some act as enzymes

Answer: c

Difficulty: Hard

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

3) The glycocalyx of a cell

- 1 acts as a cell identity marker to allow the body to differentiate between self and non-self cells
- 2 consists of the carbohydrate portions of glycolipids and glycoproteins in the plasma membrane
- 3 provides a defensive layer against extracellular enzymes
- 4 attracts water molecules in some cells which protects against desiccation and facilitates movement of some cells (such as red blood cells)
- 5. facilitates cell-to-cell adhesion in some tissues

a) 1, 2, 3, 4, 5

b) 1, 2, 3, 4

c) 2, 4, 5

d) 1, 3, 4

Answer: a

Difficulty: Medium

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

4) Extracellular fluid includes all of the following except:

a) interstitial fluid

b) plasma

c) cytosol

d) lymph

Answer: c

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

5) 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

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

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

Section Reference 1: 2.2 The Plasma Membrane

6) 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

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

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

Section Reference 1: 2.2 The Plasma Membrane

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

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

Answer: a

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

8) 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

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

9) Which structure in the plasma membrane could be used for attachment of neighboring cells, but not for transport of charged substances across the membrane?

- a) cholesterol
- b) transmembrane proteins
- c) peripheral proteins
- d) glycolipids

Answer: c

Difficulty: Hard

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

10) 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

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

11) A normal human body cell contains _____ chromosomes and a normal unfertilized human oocyte contains _____ chromosomes.

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

Answer: d

Difficulty: Easy

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

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

- a) histones
- b) chromatin
- c) endosome
- d) nucleolus

Answer: c

Difficulty: Medium

Learning Objective 1: 2.4 Describe the structure and functions of the nucleus.

Section Reference 1: 2.4 Nucleus

13) 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: Hard

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

14) 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

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

15) 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

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

16) 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

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

Section Reference 1: 2.7 Aging and Cells

17) Which of the following is not true concerning the development or treatment of a malignant tumor?

- a) Cancerous cells are vulnerable to radiation therapy because they divide more rapidly than normal cells.
- b) All of the cells that make up a tumor have an identical growth rate and resistance to drugs.
- c) Blood vessels can collapse in the center of a tumor and prevent drugs from reaching areas serviced by those blood vessels.
- d) Some cancers spread rapidly via blood and lymph and lead to growth of secondary tumors in various sites throughout the body.

Answer: b

Difficulty: Medium

Learning Objective 1: 2.6 Describe cellular differences in size and shape.

Section Reference 1: 2.6 Cellular Diversity.

18) 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: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

19) Cell division is not fully complete until

- a) the cytoplasm divides completely
- b) the cleave furrow is complete
- c) cytokinesis terminates
- d) all of these choices

Answer: d

Difficulty: Easy

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

20) 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

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

21) 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

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

22) 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

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

23) 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

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

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

Section Reference 1: 2.2 The Plasma Membrane

24) After binding to the CD4 receptor, the human immunodeficiency virus (HIV) enters the helper T cell via which mode of plasma membrane transport?

- a) phagocytosis
- b) receptor-mediated endocytosis
- c) diffusion
- d) bulk-phase endocytosis

Answer: b

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

25) From the following list, which is not synthesized under the control of mitochondrial genes?

- a) ribosomal RNAs

- b) transfer RNAs
- c) proteins
- d) messenger RNAs

Answer: d

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

26) In terms of cell size, which of the following is an unreasonable estimate?

- a) female reproductive cell (oocyte) = 140mm
- b) white blood cell = 20m
- c) hair = 100 mm in diameter
- d) red blood cell = 8mm

Answer: b

Difficulty: Easy

Learning Objective 1: 2.6 Describe cellular differences in size and shape.

Section Reference 1: 2.6 Cellular Diversity

27) 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 synthesises 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

Learning Objective 1: 2.4 Describe the structure and functions of the nucleus.

Section Reference 1: 2.4 Nucleus

Question type: True/False

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

Answer: False

Difficulty: Medium

Learning Objective 1: 2.2 Describe the structure, function and transport mechanisms of the plasma membrane

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

29) Plasma and lymph are two kinds of interstitial fluid.

Answer: False

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

30) Cytosol is an example of intracellular fluid.

Answer: True

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

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

Answer: True

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

32) Hormones, cholesterol, vitamins, and some viruses enter cells via phagocytosis.

Answer: False

Difficulty: Hard

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

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

Section Reference 1: 2.2 The Plasma Membrane

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

Answer: False

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

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

Answer: True

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

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

Answer: False

Difficulty: Medium

Learning Objective 1: 2.4 Describe the structure and functions of the nucleus.

Section Reference 1: 2.4 Nucleus

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

Answer: True

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: 2.3 Cytoplasm

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

Answer: True

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: 2.3 Cytoplasm

38) Microtubules form the structure of microvilli.

Answer: False

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: 2.3 Cytoplasm

39) The mitotic spindle consists of microtubules.

Answer: True

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.
Section Reference 1: 2.3 Cytoplasm

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

Answer: True

Difficulty: Medium

Learning Objective 1: 2.7 Describe the cellular changes that occur with aging.
Section Reference 1: 2.7 Aging and Cells

41) A neoplasm is an example of cell division gone wild.

Answer: True

Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

42) The cytosol of every body cell is mostly made up of various dissolved and suspended substances and a small percentage of water.

Answer: False

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

43) 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

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

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

Answer: False

Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.2 Describe the stages, events, and significance of reproductive cell division.

Section Reference 1: 2.5 Cell Division

45) There is a clear relationship between certain chronic inflammatory conditions and the transformation of inflamed tissue into a malignant tissue.

Answer: True

Difficulty: Easy

Learning Objective 1: 2.6 Describe cellular differences in size and shape.

Section Reference 1: 2.6 Cellular Diversity.

46) Gerontology is the scientific study of the process and problems associated with cancer.

Answer: False

Difficulty: Easy

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

Section Reference 1: 2.7 Aging and Cells

Question type: Essay

47) 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

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane.

Section Reference 1: 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.

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

Answer:

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 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.

49) 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

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

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

Section Reference 1: 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).

50) 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

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: See Table 2.1 for specifics.

51) 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

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division..

Section Reference 1: 2.5 Cell Division

Solution: See Figure 2.19 for explanation of the steps.

52) 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

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 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.

53) Define and differentiate among the following terms: anaplasia, dysplasia, hyperplasia, hypertrophy, and metaplasia.

Answer:

Difficulty: Medium

Solution: See end of the chapter (key medical terms associated with cells for clear definitions)

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

Answer:

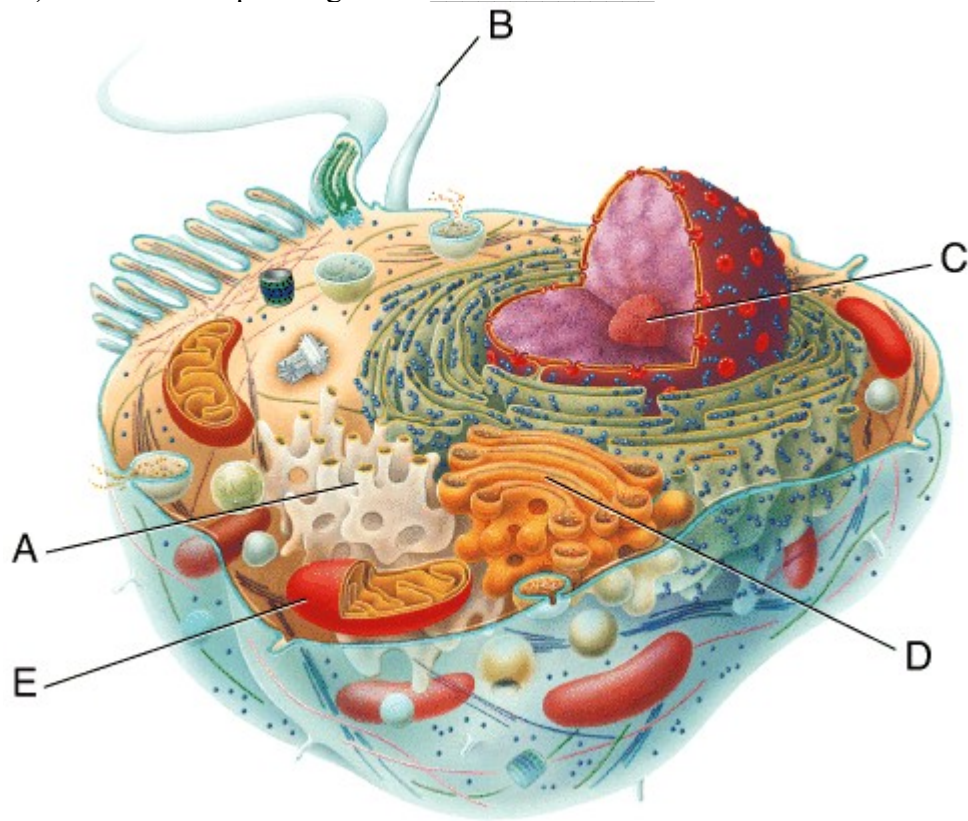
Difficulty: Medium

Learning Objective 1: 2.6 Describe cellular differences in size and shape.

Section Reference 1: 2.6 Cellular Diversity.

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.

55) The letter a is pointing to the _____.



Answer:

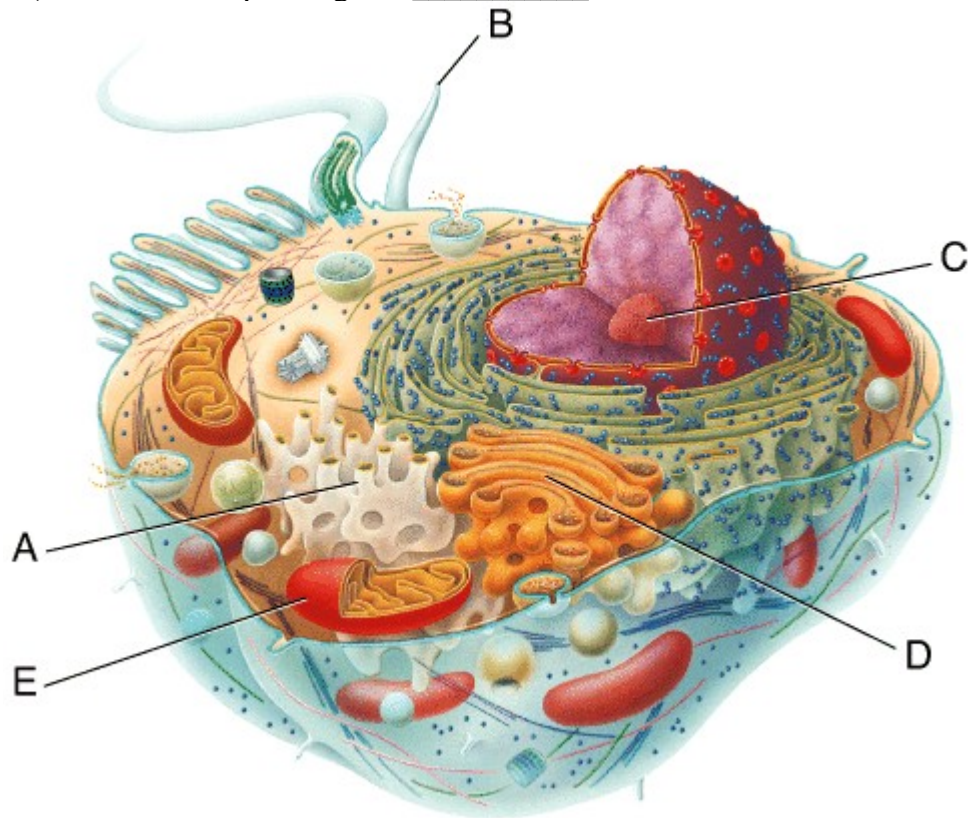
Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: smooth endoplasmic reticulum

56) The letter B is pointing to a _____.



Answer:

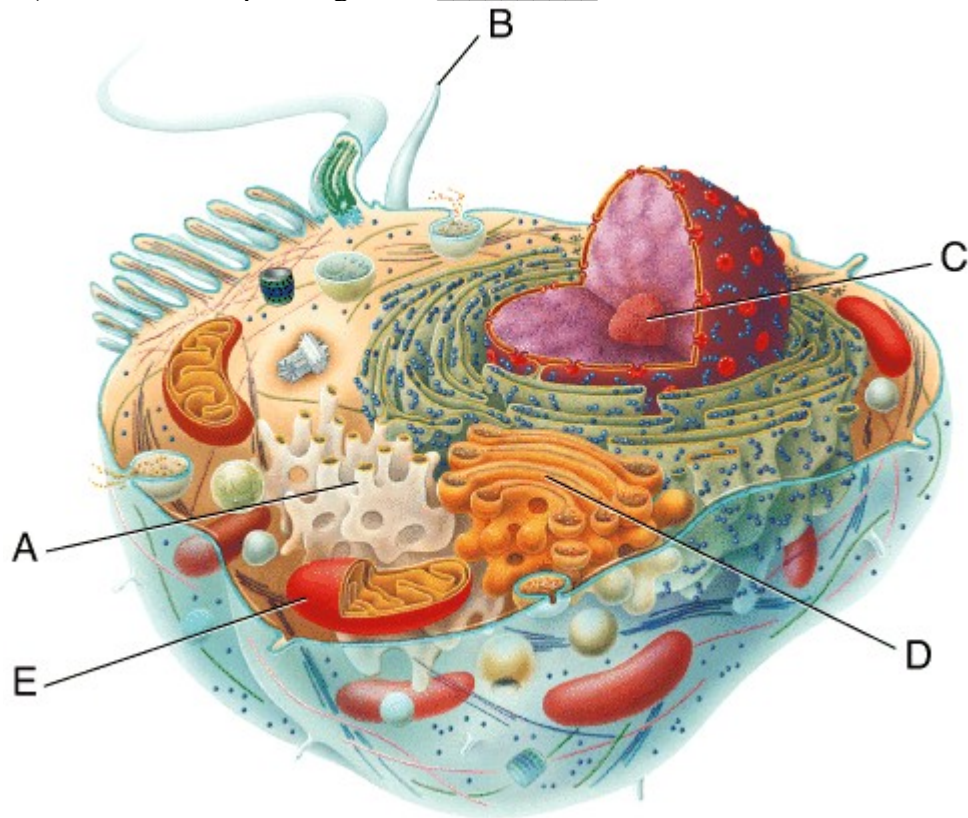
Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: cilium

57) The letter C is pointing to the _____.



Answer:

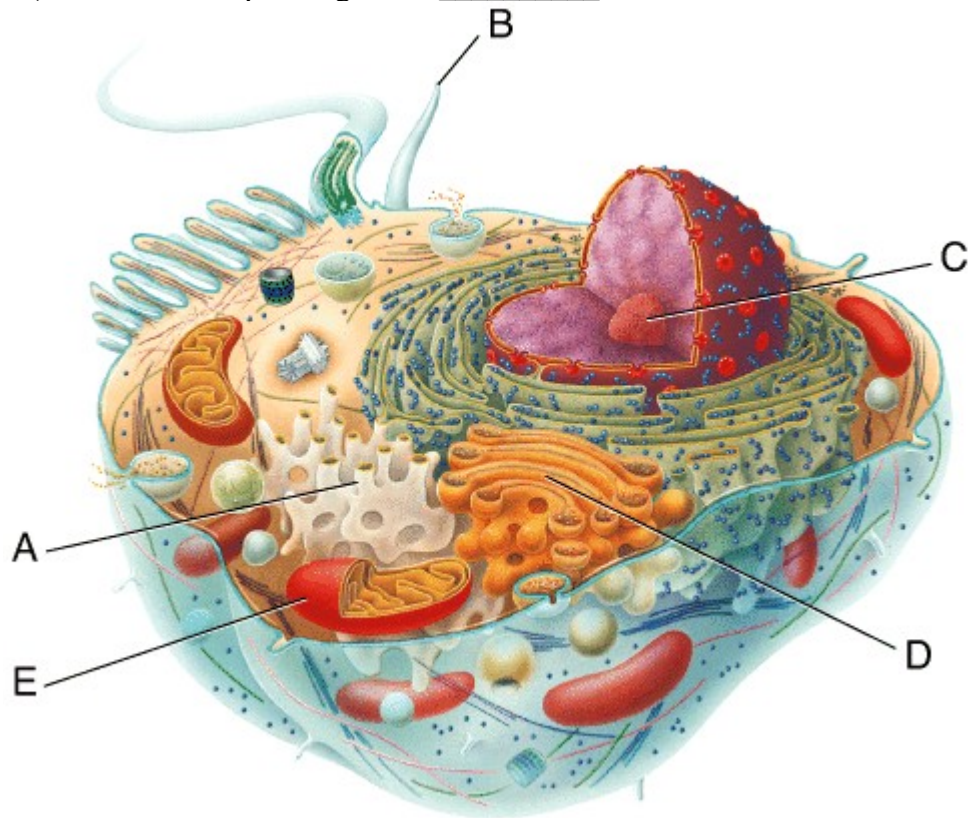
Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: nucleolus

58) The letter D is pointing to the _____.



Answer:

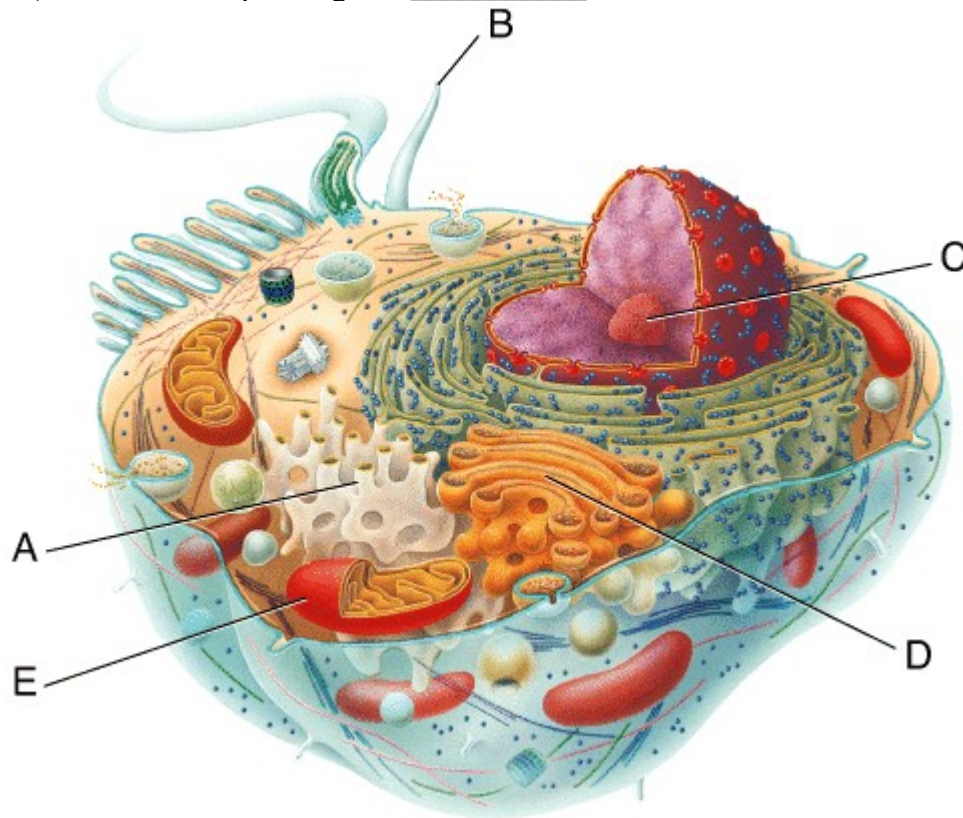
Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: Golgi complex

59) The letter E is pointing to a _____.



Answer:

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: mitochondrion

60) Microfilaments of the cytoskeleton often attach to _____ of the plasma membrane.

Answer:

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: integral proteins

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

Answer:

Difficulty: Medium

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

Learning Objective 2: 2.2.1 Describe the structure and functions of the plasma membrane..

Section Reference 1: 2.2 The Plasma Membrane

Solution: phospholipid, protein

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

Answer:

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: osmosis

63) Two organelles that are enclosed by a double-layered membrane are the _____ and the _____.

Answer:

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: nucleus, mitochondrion

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

Answer:

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: fatty acids, phospholipids, or steroids

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

Answer:

Difficulty: Easy

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

Solution: mitosis

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

Answer:

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: autolysis

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

Answer:

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: matrix

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

Answer:

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: sperm

69) _____ shorten and pull chromosomes during anaphase.

Answer:

Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

Solution: microtubules

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

Answer:

Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

Solution: mitosis

71) The growth of new blood vessels that is often associated with tumor development is called _____.

Answer:

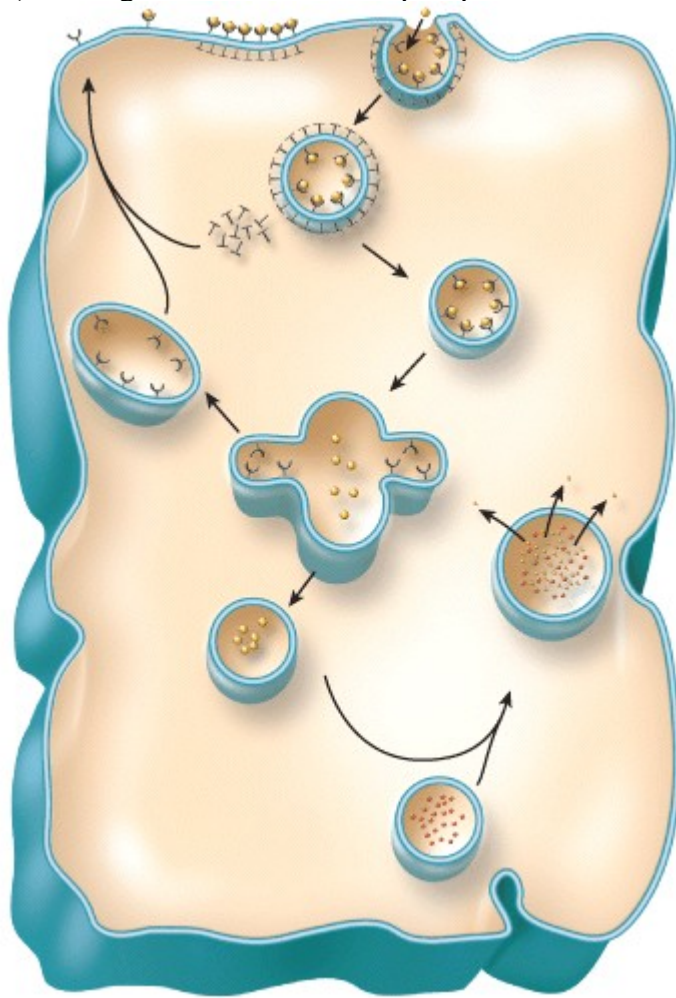
Difficulty: Medium

Learning Objective 1: 2.6 Describe cellular differences in size and shape.

Section Reference 1: 2.6 Cellular Diversity.

Solution: angiogenesis

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



Answer:

Difficulty: Medium

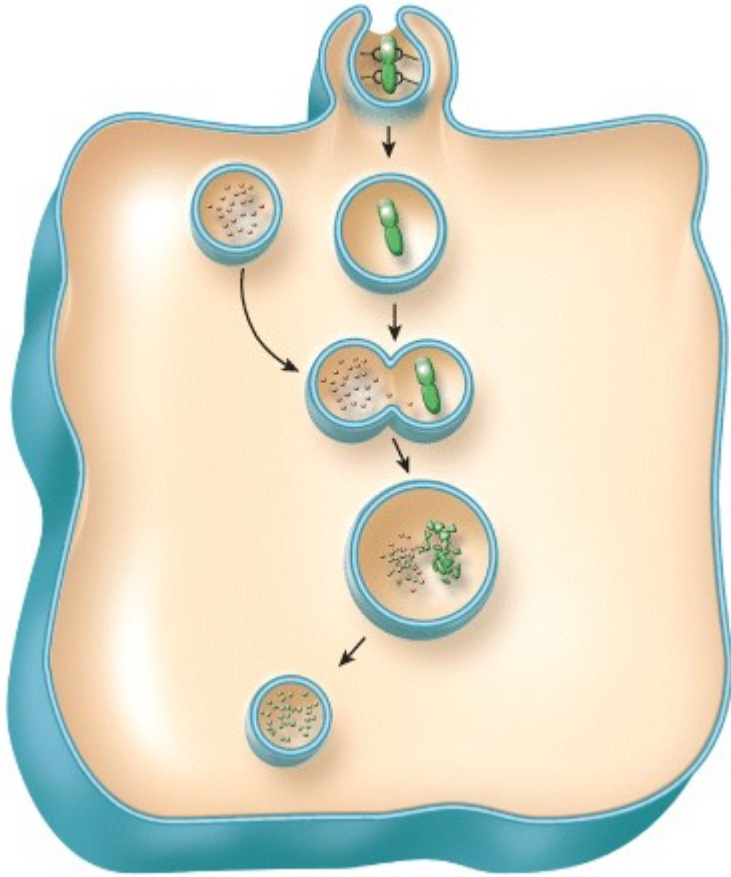
Learning Objective 1: 2.2 Describe the structure, function and transport mechanisms of the plasma membrane.

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: receptor-mediated endocytosis

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



Answer:

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: phagocytosis

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

Answer:

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: diffusion

75) Carbon dioxide moves from individual cells into the blood of nearby capillaries through _____.

Answer:

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: diffusion

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

Answer:

Difficulty: Medium

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: exocytosis

77) In _____, materials move into a cell in a vesicle formed from the plasma membrane.

Answer:

Difficulty: Hard

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: endocytosis

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

Answer:

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: phagocytosis

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

Answer:

Difficulty: Easy

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

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

Section Reference 1: 2.2 The Plasma Membrane

Solution: pinocytosis

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

Answer:

Difficulty: Easy

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

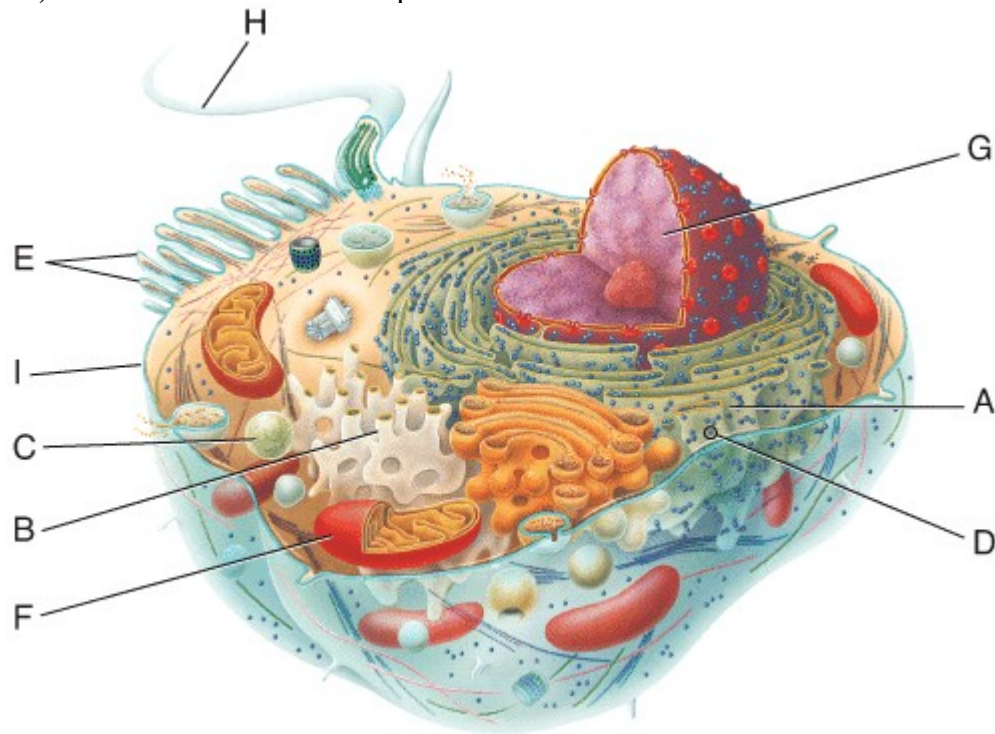
Learning Objective 2: 2.2.2 Outline the processes that transport substances across the plasma membrane.

Section Reference 1: 2.2 The Plasma Membrane

Solution: Active transport

Question type: Multiple Choice

81) Which letter identifies the powerhouse of the cell?



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

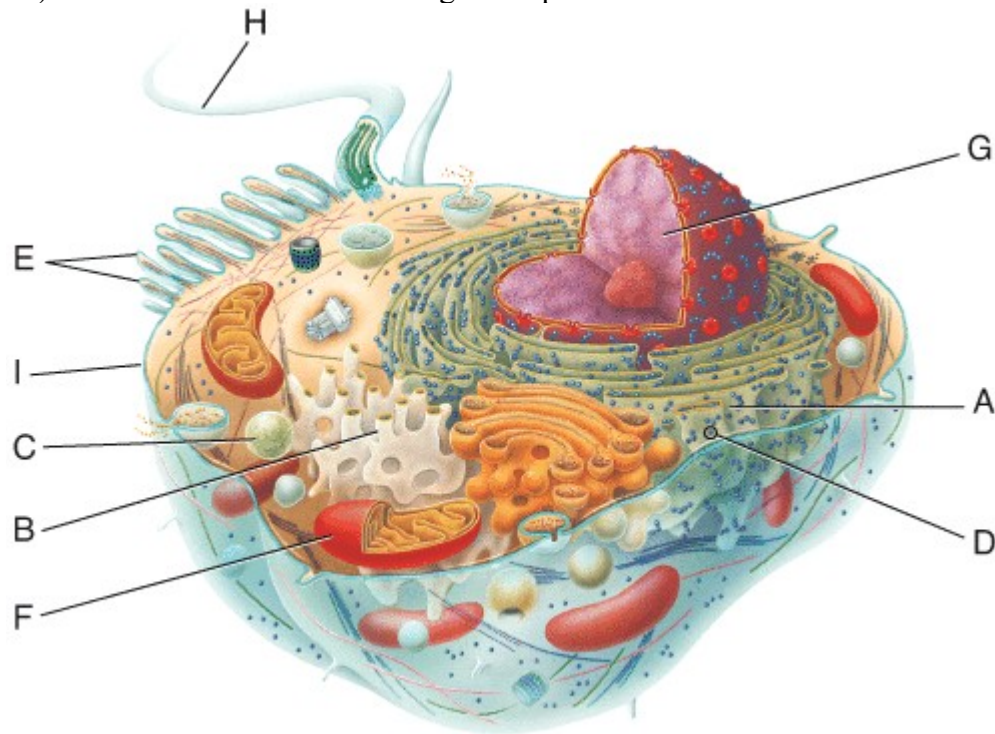
Answer: c

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

82) Which letter identifies the rough endoplasmic reticulum?



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

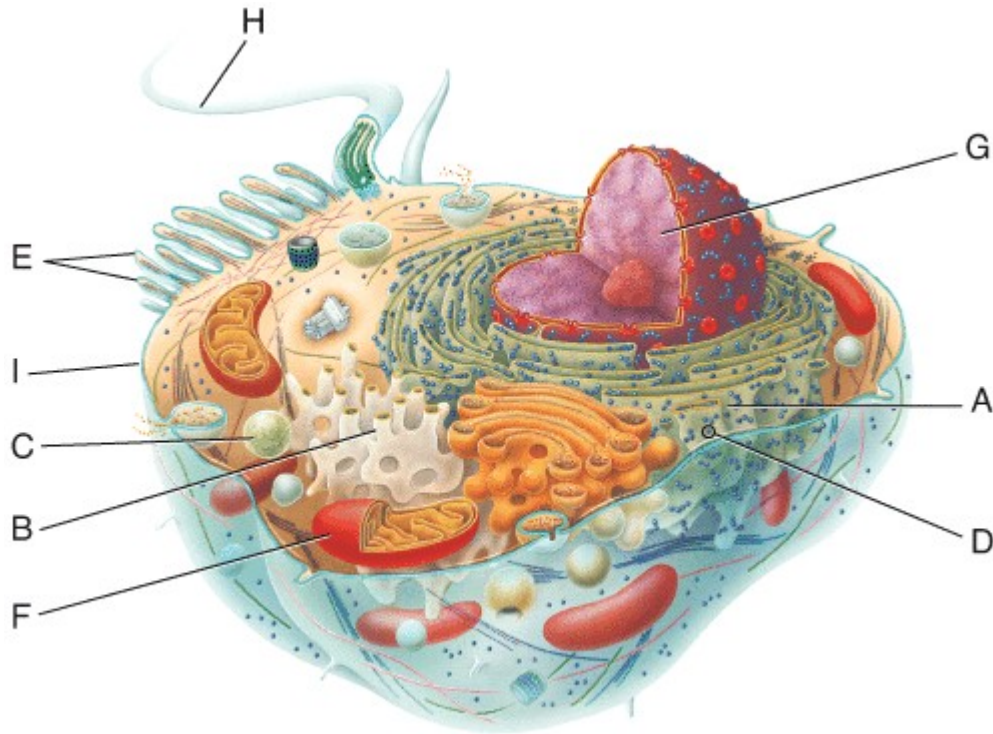
Answer: b

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

83) 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

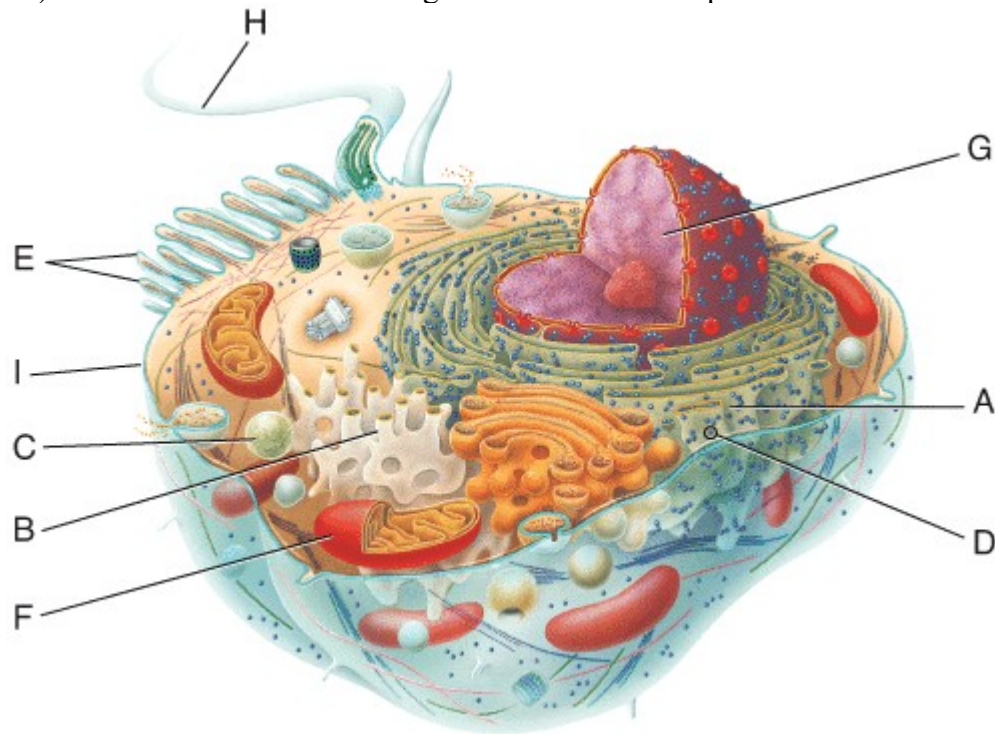
Answer: d

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

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



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

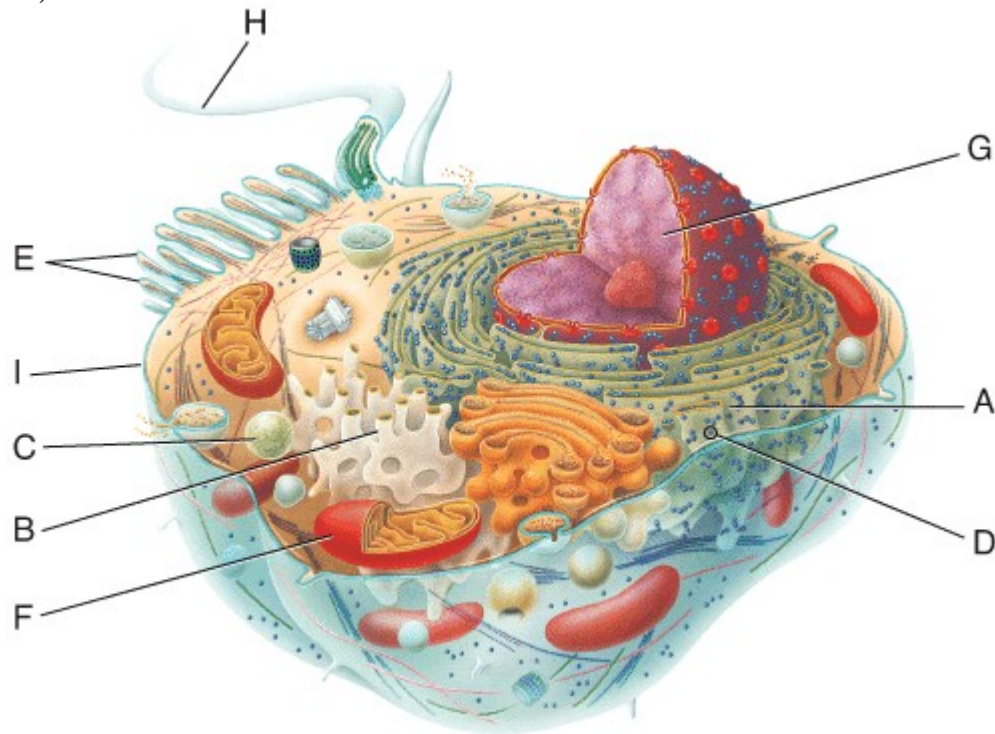
Answer: a

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

85) Which letter identifies microvilli?



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

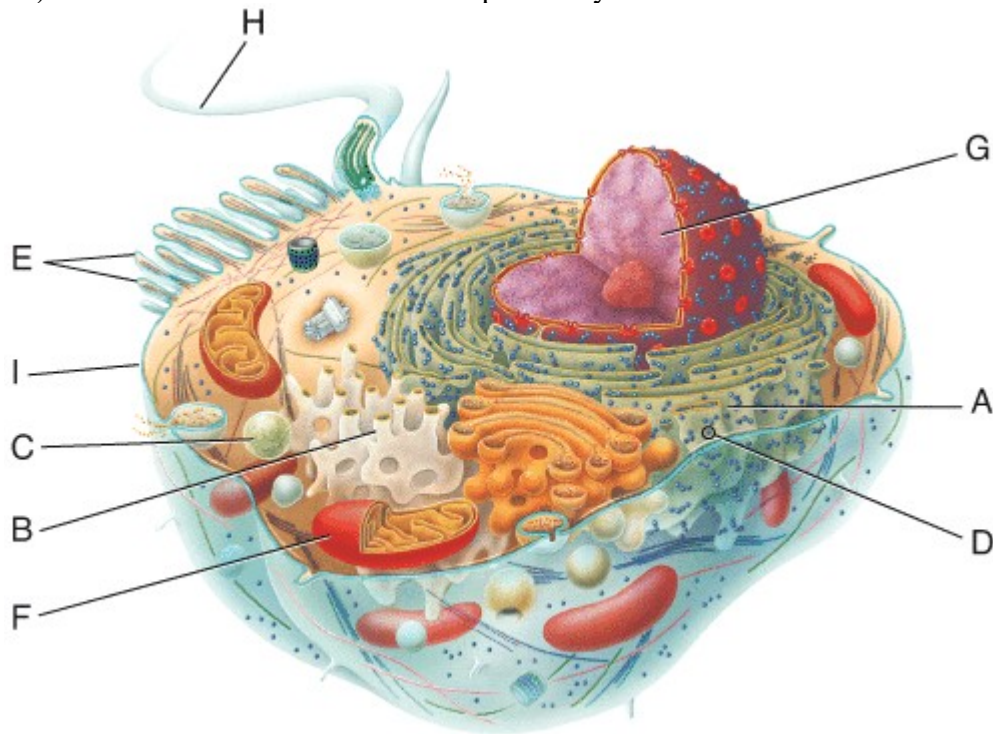
Answer: b

Difficulty: Easy

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

86) Which letter identifies the site of protein synthesis?



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

Answer: c

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Question type: Essay

87) 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

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: smooth endoplasmic reticulum

88) A specific chemical (cytochrome c) is harmless when it is in the mitochondria. However, in the cytosol, this chemical initiates a cascade of protein-digesting enzyme activation leading to _____.

Answer:

Difficulty: Hard

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: apoptosis

89) 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

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.2 Describe the stages, events, and significance of reproductive cell division.

Section Reference 1: 2.5 Cell Division

Solution: diploid, haploid, haploid, haploid, diploid

90) Describe a function of microtubules.

Answer:

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: responsible for movement of chromosomes during cell division or structural and functional components of cilia and flagella

91) What is the function of microfilaments?

Answer:

Difficulty: Medium

Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 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

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

Answer:

Difficulty: Medium

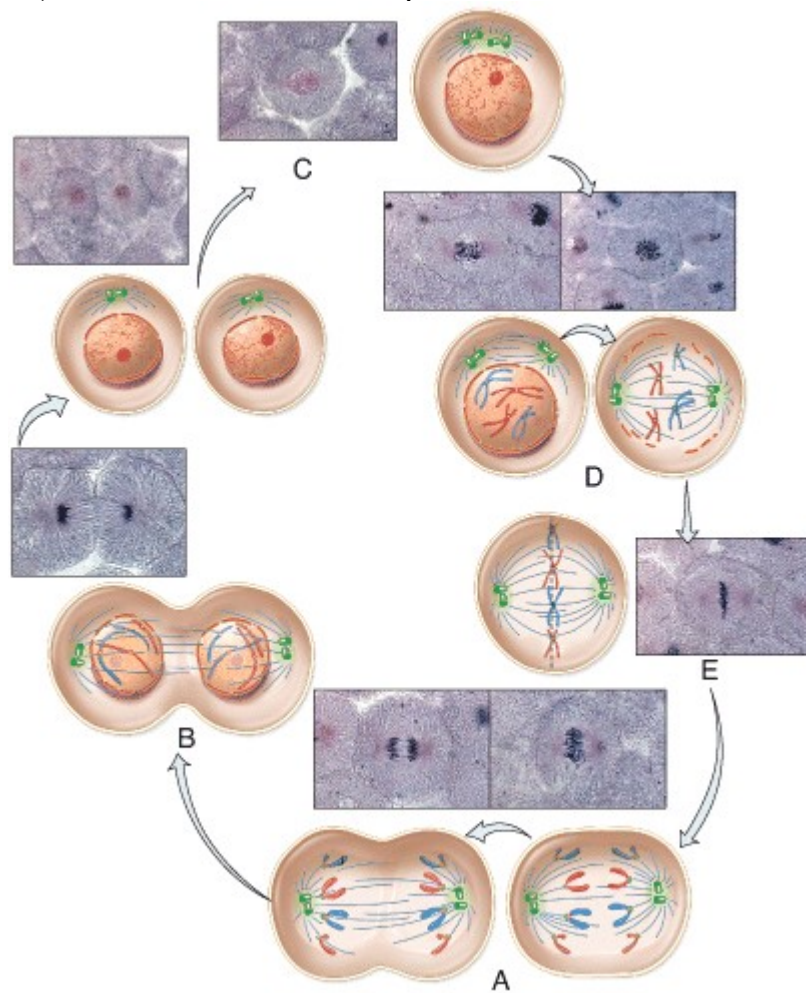
Learning Objective 1: 2.3 Describe the structure and function of cytoplasm, cytosol, and organelles.

Section Reference 1: 2.3 Cytoplasm

Solution: ribosomes; protein and rRNA

Question type: Multiple Choice

93) Which letter indicates interphase?



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

Answer: c

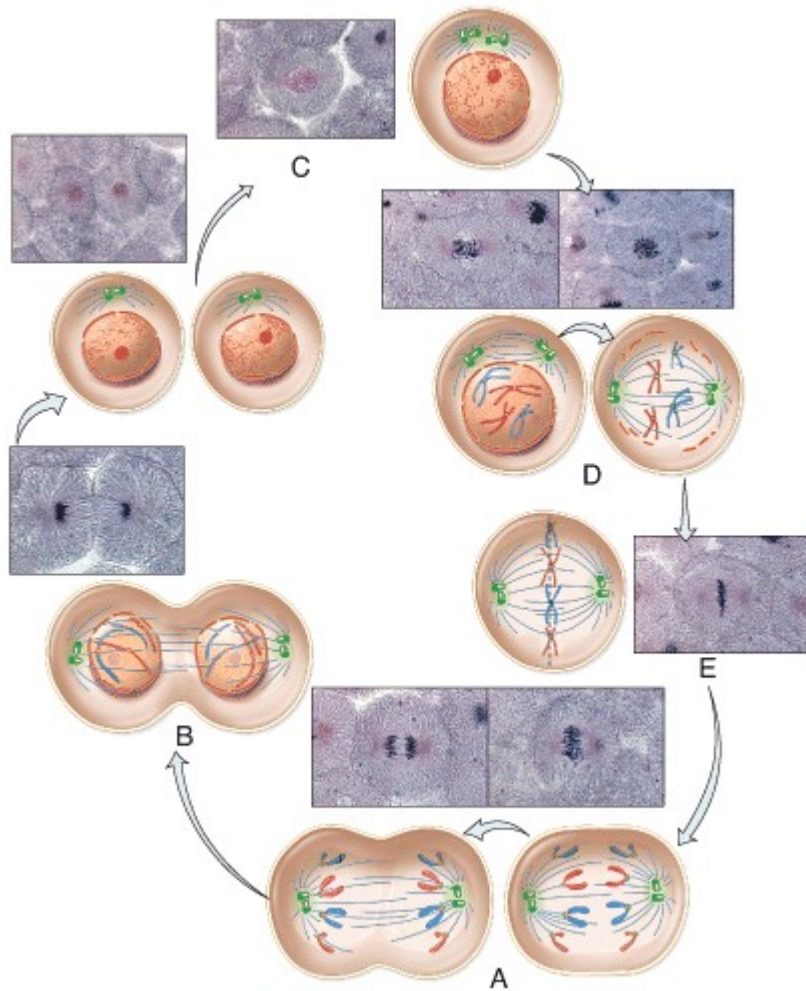
Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

94) Which letter indicates the phase during which DNA is replicated?



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

Answer: c

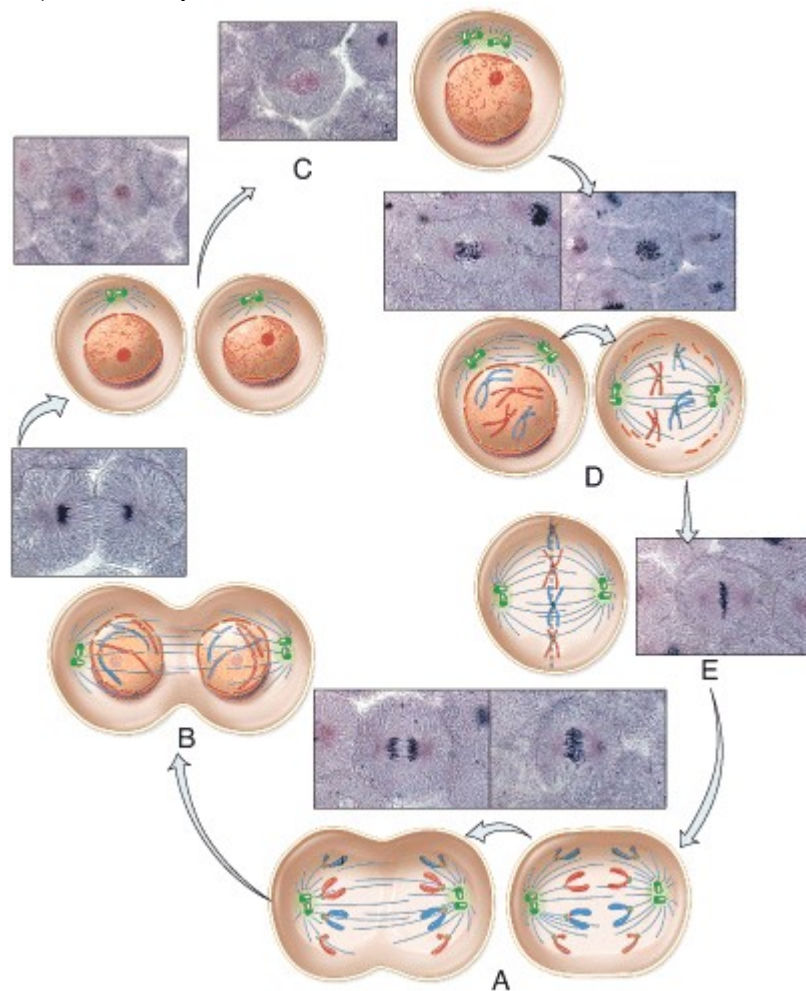
Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

95) 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

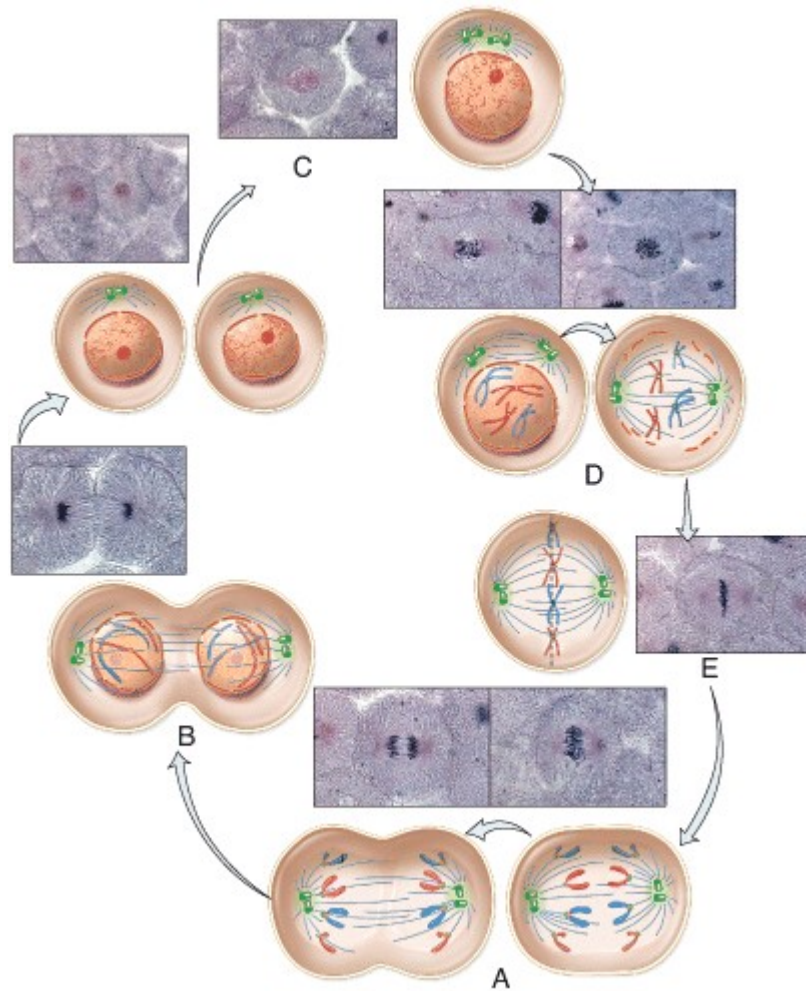
Difficulty: Easy

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

96) The nucleoli disappear during which phase?



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

Answer: d

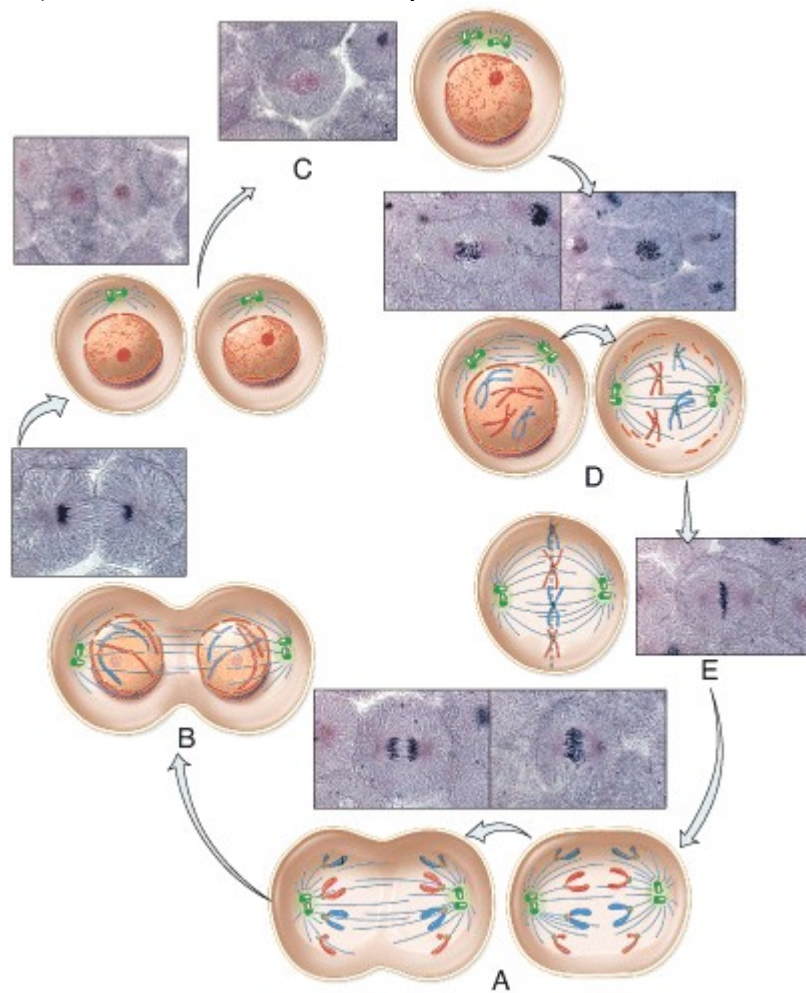
Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

97) Which letter indicates metaphase?



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

Answer: e

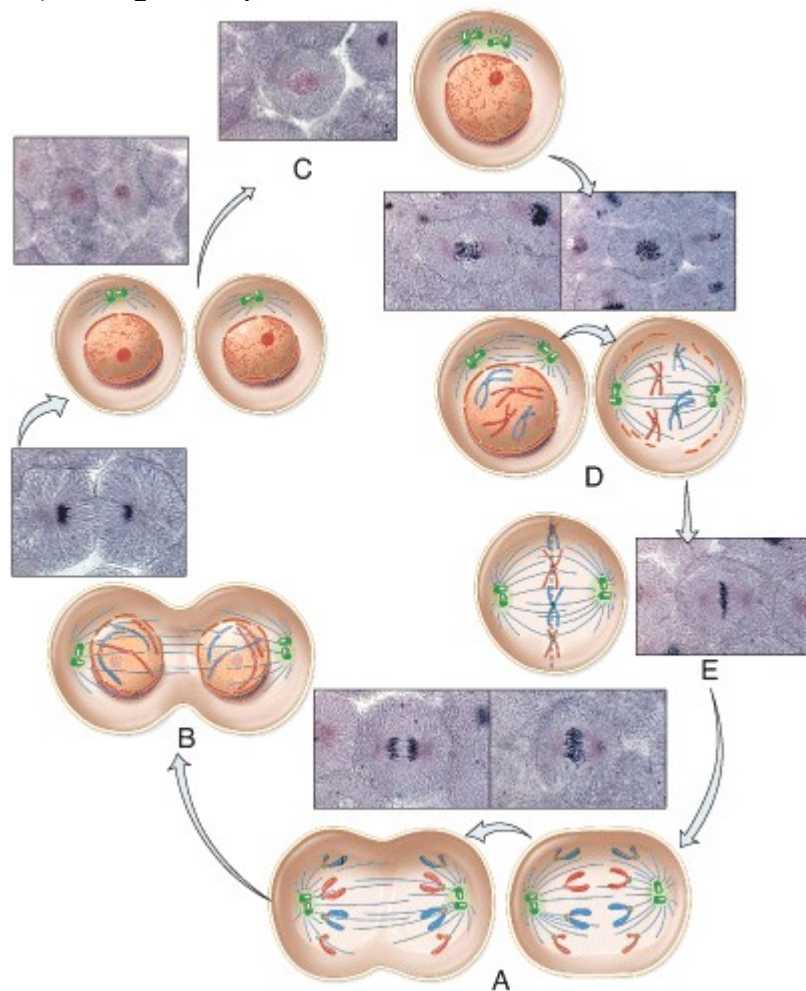
Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

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



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

Answer: a

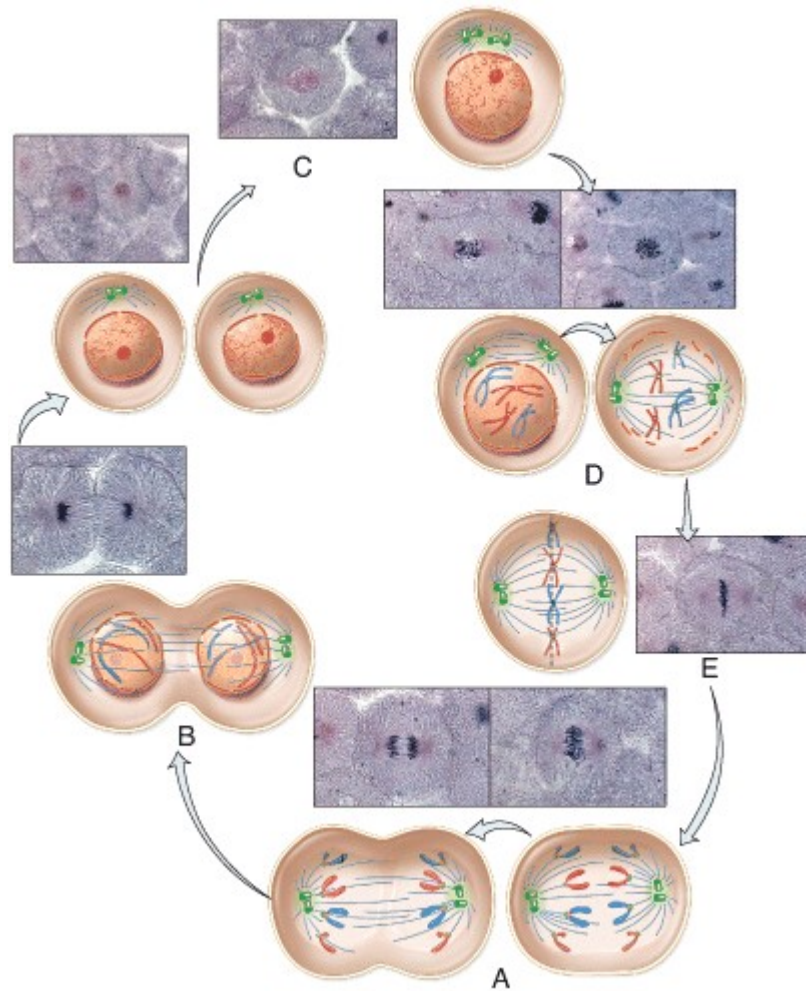
Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division

99) Identify the letter that indicates telophase.



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

Answer: b

Difficulty: Medium

Learning Objective 1: 2.5 Describe the stages, events and significance of both somatic and reproductive cell division.

Learning Objective 2: 2.5.1 Discuss the stages, events, and significance of somatic cell division.

Section Reference 1: 2.5 Cell Division