Plants and Society 8th edition Levetin Test Bank

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***Plants and Society, 8e* (Levetin)**
Chapter 2 The Plant Cell

1) The biological term, *"cell"* came about through the study of _____ cells.
A) tomato
B) wood
C) bone
D) cork
E) blood

Answer: D
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2) Which of the following is *not* a statement of the *Cell Theory*?
A) All cells arise from preexisting cells.
B) All cells contain the hereditary material, DNA.
C) All organisms are made up of cells.
D) The cell is the basic unit of life.
E) All of the above are correct statements about the *Cell Theory*.

Answer: B
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3) Who among the scientists listed below was *not* directly involved in the development of the *Cell Theory*?
A) Hooke
B) Schleiden
C) Schwann
D) Virchow
E) All of these men were involved in the development of the Cell Theory.

Answer: A
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4) The *Cell Theory* is categorized as which of the following?
A) an educated guess
B) a hypothesis that is in need of testing
C) a speculative idea
D) untested but quite probable
E) an explanation accepted as a major principle of biology

Answer: E
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5) The primary cell wall of a plant _____.
A) consists of cellulose and lignin
B) forms inside of the secondary cell wall
C) consists primarily of cellulose
D) gives wood its characteristic flexibility
E) is described by more than one of these characteristics

Answer: C
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6) Which of the following is found *only* in a plant cell?
A) Nucleus
B) Mitochondria
C) Endoplasmic reticulum
D) Chloroplasts
E) Ribosomes

Answer: D
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7) Which of the following statements about lignin is *not* correct?
A) Lignin is indigestible by all organisms.
B) In trees, lignin is more abundant in softwood species than hardwood species.
C) Lignin protects the plant from pathogens.
D) Lignin is found in secondary cell walls.
E) Lignin is not found in primary cell walls.

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8) Movement of materials from one plant cell to another is accomplished through which of the following?
A) the cytosol
B) the middle lamella
C) microtubules
D) plasmodesmata
E) the cytoskeleton

Answer: D
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9) Which of the following serves as the "cement" that glues plant cells together?
A) cytosol
B) lignin
C) cellulose
D) the cytoskeleton
E) pectin

Answer: E
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10) If you could travel from the *inside of one plant cell into an adjacent plant cell*, in what order would you find the following plant cell structures listed below?
A) cytoplasm, plasma membrane, cell wall, middle lamella
B) plasma membrane, cytoplasm, middle lamella, cell wall
C) cytoplasm, plasma membrane, middle lamella, cell wall
D) cytoplasm, middle lamella, plasma membrane, cell wall
E) None of the above are correct.

Answer: A
Accessibility: Keyboard Navigation
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11) Microtubules and microfilaments comprise the structure of which of the following?
A) cell wall
B) plasmodesmata
C) plasma membrane
D) middle lamella
E) cytoskeleton

Answer: E
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12) A plant *plasma membrane* is made up of _____ and _____.
A) cellulose; lignin
B) phospholipids; carbohydrates
C) phospholipids; proteins
D) cellulose; cholesterol
E) phospholipids; cholesterol

Answer: C
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13) Which of the following statements is correct?
A) The plasma membrane is selectively permeable (differentially permeable).
B) The movement of water across the membrane is called facilitated diffusion.
C) Osmosis is a form of dialysis.
D) Diffusion and dialysis are usually the same process.
E) None of the above are correct.

Answer: A
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14) If the proptoplast of plant cell A is hypertonic to the protoplast of adjacent plant cell B. Which way will water flow?
A) From A to B
B) From B to A
C) Equally from B to A and A to B
D) There will be no flow of water whatsoever
E) None of the above are correct.

Answer: B
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15) When a plant cell is placed in a *hypotonic solution*, the cell becomes _____.
A) hypertonic
B) plasmolyzed
C) turgid
D) osmotic
E) flaccid

Answer: C
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16) The free movement of water across a membrane is called _____.
A) active transport
B) simple diffusion
C) plasmolysis
D) osmosis
E) dialysis

Answer: D
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17) Of these three items - concentration gradient, energy, membrane proteins - which *two* are needed for active transport to take place?
A) only a concentration gradient
B) all three are needed for active transport to take place
C) a concentration gradient and energy
D) a concentration gradient and membrane proteins
E) energy and membrane proteins

Answer: E
Accessibility: Keyboard Navigation
Gradable: automatic

18) In drought conditions when soils are dry for long periods of time, plants cells become _____.
A) hypertonic
B) plasmolyzed
C) turgid
D) osmotic
E) hydrated

Answer: B
Accessibility: Keyboard Navigation
Gradable: automatic

19) _____ is(are) necessary for diffusion to take place.
A) A cell membrane
B) Membrane proteins
C) Energy
D) A concentration gradient
E) More than one of the above are required.

Answer: D
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20) Which of the following pigments is most abundant in chloroplasts?
A) carotene
B) xanthophyll
C) melanin
D) chlorophyll
E) tannins

Answer: D
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21) Which of the following statements is correct?
A) Chloroplasts, leucoplasts, and chromoplasts are collectively called *plastids*.
B) Amyloplasts are filled with plant oils.
C) Mitochondria provides a location for photosynthesis to take place.
D) Stroma holds adjacent plant cells together.
E) Neither chloroplasts nor mitochondria are viewed as endosymbionts.

Answer: A
Accessibility: Keyboard Navigation
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22) Plant pigments are specifically located within which of the following?
A) thylakoid membranes.
B) stroma
C) plasma membranes
D) nuclei
E) golgi apparatus

Answer: A
Accessibility: Keyboard Navigation
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23) Which of the following is *not* correct?
A) During cellular respiration, glucose is chemically broken down to carbon dioxide, water, and ATP.
B) The inner membrane of mitochondria has numerous infoldings called *cristae*.
C) The matrix of mitochondria contains enzymes used in cellular respiration.
D) In some cells, the central vacuole takes up 90 percent of the cell volume.
E) Microbodies include peroxisomes, glyoxysomes, and ribosomes.

Answer: E
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24) Which of the following is *not* found within the nucleus?
A) chromatin
B) nucleolus
C) DNA
D) ribosomes
E) RNA

Answer: D
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25) Which of the following terms is most closely associated with *grana*?
A) leucoplasts
B) stroma
C) thylakoids
D) vacuoles
E) plastids

Answer: C
Accessibility: Keyboard Navigation
Gradable: automatic

26) Carotenoids are found in which of the following?
A) leucoplasts
B) amyloplasts
C) chloroplasts
D) chromoplasts
E) More than one of the above are correct.

Answer: D
Accessibility: Keyboard Navigation
Gradable: automatic

27) Which of the following animals produces carotenoids?
A) pea aphids
B) flamingos
C) chickens
D) butterflies
E) None of the above are correct—carotenoids are only produced by plants.

Answer: A
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28) The mitochondrial equivalent to grana is(are) _____.
A) the matrix
B) cristae
C) stroma
D) plasma membranes
E) ribosomes

Answer: B
Accessibility: Keyboard Navigation
Gradable: automatic

29) What features in common with bacteria led scientists to conclude that chloroplasts and mitochondria evolved from bacteria?
A) Their DNA is similar to the DNA of bacteria.
B) Their ribosomes are similar to those of bacteria.
C) Cell division in both is like bacterial cell division.
D) The chemical composition of their inner membranes is similar to those of bacteria.
E) Chloroplasts and mitochondria share all of these bacteria-like features.

Answer: E
Accessibility: Keyboard Navigation
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30) Bacterial endosymbionts of sap-sucking insects provide needed _____ to their hosts.
A) DNA
B) sugars
C) amino acids
D) fats
E) oils

Answer: C
Accessibility: Keyboard Navigation
Gradable: automatic

31) Anthocyanin is found in which of the following organelles?
A) central vacuole
B) chromoplast
C) chloroplast
D) leucoplast
E) endoplasmic reticulum

Answer: A
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32) Regulating metabolism and controlling cellular reproduction by destruction of proteins is accomplished by which of the following?
A) peroxisomes
B) proteasomes
C) glyoxysomes
D) chromosomes
E) tannosomes

Answer: B
Accessibility: Keyboard Navigation
Gradable: automatic

33) The storage, modification, and packaging of proteins is accomplished by the _____.
A) endoplasmic reticulum
B) mitochondria
C) proteasomes
D) Golgi apparatus
E) central vacuole

Answer: D
Accessibility: Keyboard Navigation
Gradable: automatic

34) Most specifically, ribosomes are produced in the _____.
A) chloroplast
B) nucleus
C) nucleolus
D) central vacuole
E) rough endoplasmic reticulum

Answer: C
Accessibility: Keyboard Navigation
Gradable: automatic

35) Ribosomes are the sites of the synthesis of _____.
A) proteins
B) lipids
C) carbohydrates
D) nucleic acids
E) fats and oils

Answer: A
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36) The plastic ends of shoelaces that help prevent the shoelace from unraveling is called an aglet. What is the equivalent structure to an aglet on a chromosome?
A) centromere
B) chromatid
C) chromatin
D) nucleotide
E) telomere

Answer: E
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37) Which phase of mitosis appears to be the most opposite of prophase?
A) anaphase
B) metaphase
C) telophase
D) cytokinesis
E) None of the above are correct.

Answer: C
Accessibility: Keyboard Navigation
Gradable: automatic

38) Which of the following is correct?
A) Chromosomes are always duplicated during prophase.
B) All cells must go through interphase after telophase.
C) Cytokinesis is the division of duplicated chromosomes.
D) Mitosis is the same as cell division.
E) The *Cell Cycle* typically includes interphase, mitosis, and cytokinesis.

Answer: E
Accessibility: Keyboard Navigation
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39) In which phase of mitosis do chromatids separate?
A) metaphase
B) prophase
C) anaphase
D) telophase
E) interphase

Answer: C
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40) *Phragmoplasts* are most closely associated with which of the following?
A) prophase
B) metaphase
C) anaphase
D) telophase
E) cytokinesis

Answer: E
Accessibility: Keyboard Navigation
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41) The phragmoplast eventually becomes the _____.
A) nucleus
B) cell wall
C) plasma membrane
D) middle lamella
E) None of the above are correct.

Answer: B
Accessibility: Keyboard Navigation
Gradable: automatic

42) If a plant cell is placed in a *hypertonic solution*, so much water enters the protoplast that the cell becomes turgid.

Answer: FALSE
Accessibility: Keyboard Navigation
Gradable: automatic

43) The fluid mosaic model is the currently accepted explanation of membrane structure.

Answer: TRUE
Accessibility: Keyboard Navigation
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44) Proteins in the plasma membrane can reside on the outer or inner surface of the plasma membrane or extend completely through the plasma membrane.

Answer: TRUE
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45) Active transport of substances into a cell always requires the expenditure of energy by the cell, typically in the form of ATP.

Answer: TRUE
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Gradable: automatic

46) Spindle fibers—composed of microtubules—stretch from the poles to the kinetochore of each chromatid.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

47) The quantity of water entering a cell in an isotonic solution is equal to the amount of water exiting.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

48) The cells of a wilted plant have lost so much water that they become *plasmolyzed*.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

49) The *Endosymbiont Theory* postulates that some membrane-bound organelles of eukaryotic cells, such as chloroplasts and mitochondria, were once free-living bacteria.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

50) If *vincristine*—a drug that disrupts microtubules—is applied to dividing cells, chromosomes will not form.

Answer: FALSE
Accessibility: Keyboard Navigation
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51) According to the Cell Theory, DNA is the genetic material in all cells.

Answer: FALSE
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52) The cell is the basic unit of life.

Answer: TRUE
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Gradable: automatic

53) Cytokinesis—the division of the cytoplasm—separates the two identical daughter nuclei and their associated cytoplasm—into two cells.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

54) Cell division enables plants to grow, repair wounds, and regenerate lost cells. Cell division can even lead to the production of new, genetically identical individuals, or *clones*.

Answer: TRUE
Accessibility: Keyboard Navigation
Gradable: automatic

55) Most plant cells spend the majority of the time in prophase.

Answer: FALSE
Accessibility: Keyboard Navigation
Gradable: automatic

56) *Tannosomes* are newly discovered organelles containing tannins, common to woody plants such as oak trees.

Answer: TRUE
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