Plants and Society 9th edition Levetin Test Bank

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CORRECT ANSWERS ARE LOCATED IN THE 2ND HALF OF THIS DOC.

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

1) The early microscopist Robert Hooke coined the term *"cell"* after viewing tiny compartments resembling cubicles in a monastery in the outer bark or_____ of an oak tree.
   A) leaves
   B) acorns
   C) twigs
   D) cork
   E) roots

2) Which of the following is *not* a statement of 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 these are correct statements about Cell Theory.

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

4) What is the spontaneous movement of particles or molecules from an area of greater concertation to one of lesser concentration?
   A) active transport
   B) diffusion
   C) concentration gradient
   D) osmosis
   E) facilitated diffusion

5) Which of the following statements about the primary cell wall of a plant is correct?
   A) consists primarily of lignin
   B) forms inside of the secondary cell wall
   C) consists primarily of cellulose
   D) forms inside the plasma membrane
   E) is only produced in woody plants

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6) Which of the following organelles is the site of photosynthesis in a plant cell?
   A) Peroxisomes
   B) Mitochondria
   C) Endoplasmic reticulum
   D) Chloroplasts
   E) Ribosomes

7) What material imparts toughness and strength to the secondary cell walls of plant cells?
   A) Lignin
   B) Keratin
   C) Chromatin
   D) Pectin
   E) Condensin

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8) What are the cytoplasmic bridges between adjacent plants cells that allow the passage of materials?
   A) pits
   B) middle lamellae
   C) microtubules
   D) plasmodesmata
   E) cytoskeletons

9) In which stage of interphase is the DNA duplicated in preparation for mitosis?
   A) RNA
   B) G_2
   C) S
   D) rRNA
   E) G_1

10) Where is the middle lamella located in plant tissue?
   A) in the plasmodesmata
   B) between the walls of adjacent plant cells
   C) in the pits of cell walls
   D) between microtubules and microfilaments
   E) between primary and secondary cell walls

11) What structure made of microtubules, intermediate filaments, and microfilaments is the scaffolding of the cell?
   A) cell wall
   B) plasmodesmata
   C) plasma membrane
   D) middle lamella
   E) cytoskeleton

12) What makes up the double layer of the plasma membrane?
   A) carbohydrates
   B) nucleic acids
   C) phospholipids
   D) cellulose
   E) proteins

13) Which of the following statements is correct?
   A) The plasma membrane is differentially permeable.
   B) The movement of water across the plasma membrane is called facilitated diffusion.
   C) Osmosis is a form of active transport.
   D) Plasmolyzed is the normal state of well-watered plant cells.
   E) Integral proteins have channels for water transport.

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14) What protein acts in joining identical chromatids together and also arranges chromosomes in a specific pattern in the nucleus?
   A) kinetin
   B) condensin
   C) chromatin
   D) adhesin
   E) cohesion

15) When a plant cell is placed in a *hypotonic solution*, water will_____ the cell and the cell becomes_____.
   A) leave; plasmolyzed
   B) enter; plasmolyzed
   C) enter; turgid
   D) leave; turgid
   E) enter; flaccid

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16) What stage of the cell cycle does a cell spend most of its life?
A) interphase
B) metaphase
C) prophase
D) telophase
E) anaphase

17) When a plant cell is placed in a *hypertonic solution*, water will_____ the cell and the cell becomes_____.
A) leave; plasmolyzed
B) enter; plasmolyzed
C) enter; turgid
D) leave; turgid
E) enter; flaccid

18) When soils are dry for long periods of time during drought conditions, plant cells in roots become
A) hypertonic.
B) plasmolyzed.
C) turgid.
D) osmotic.
E) hydrated.

19) _____ is(are) necessary for diffusion to take place.
A) A cell membrane
B) Membrane proteins
C) Energy
D) A concentration gradient
E) Membrane phospholipids

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

21) Where would starch grains be stored in the cells of a potato?
A) the central vacuole
B) amyloplasts
C) proteasome
D) elaioplast
E) glyoxysomes

22) Where are carotenoid pigments in colors of red, orange, and yellow stored in the plant cell?
A) leucoplasts.
B) protoplasts
C) chromoplasts
D) amyloplasts
E) elaioplasts

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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) Glyxoyosoms disassemble defective proteins.

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

25) What are the folded membranes in the grana of a chloroplast called?
A) leucoplasts
B) stroma
C) thylakoids
D) vacuoles
E) cristae

26) The oil in an avocado is stored in organelles called
A) leucoplasts.
B) amyloplasts.
C) chloroplasts.
D) chromoplasts.
E) elaioplasts.

27) What group of pigments imparts the blue of blueberries and the deep red of beets?
A) carotenoids
B) xanthophylls
C) chlorophylls
D) anthocyanins
E) carotenes

28) What is the protein-rich interior of the chloroplast called?
A) the matrix
B) cristae
C) stroma
D) plasma membranes
E) ribosomes

29) What features in common with bacteria led scientists to conclude that chloroplasts and mitochondria evolved from bacteria?
A) Their DNA is similar to prokaryotic DNA.
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.

30) What is the protein component of microtubules?
A) keratin
B) tubulin
C) cohesin
D) chromatin
E) actin

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31) What organelle of plants stores anthocyanin pigments?
A) central vacuole
B) chromoplast
C) chloroplast
D) leucoplast
E) endoplasmic reticulum

32) Where are the lipids stored in seeds broken down to release nutrients to the growing seedling?
A) peroxisomes
B) proteasomes
C) glyoxysomes
D) chromosomes
E) tannosomes

33) What organelle stores, modifies, and packages materials?
A) endoplasmic reticulum
B) mitochondria
C) proteasomes
D) Golgi apparatus
E) central vacuole

34) Where can ribosomes be found in the cell?
A) chloroplasts
B) nucleus
C) nucleolus
D) central vacuole
E) rough endoplasmic reticulum

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

36) What structure covers and protects the ends of chromosomes from damage?
A) centromere
B) chromatid
C) chromatin
D) nucleotide
E) telomere

37) In which phase of mitosis do sister chromatids separate and move to the opposite poles of the cell?
A) anaphase
B) metaphase
C) telophase
D) cytokinesis
E) nucleotide

38) In which stage of mitosis do doubled chromosomes line up at the equator of the cell?
A) prophase.
B) telophase.
C) metaphase
D) interphase
E) anaphase

39) In which stage of the cell cycle do chromosomes duplicate?
A) metaphase
B) prophase
C) anaphase
D) telophase
E) interphase

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40) What is the process during cell division that splits the cytoplasm creating two identical daughter cells?
A) prophase
B) metaphase
C) anaphase
D) telophase
E) cytokinesis

41) What does the phragmoplast give rise to?
A) the nucleus
B) the wall
C) the plasma membrane
D) the middle lamella
E) the proteasome

42) The yellow of a sunflower is due to pigments contained in the
A) central vacuole.
B) cell wall.
C) grana.
D) chromoplast.
E) cytosol.

43) In which stage of mitosis do daughter nuclei form?
A) prophase
B) metaphase
C) anaphase
D) telophase
E) cytokinesis

44) Which of the following organelles is the site of lipid synthesis?
A) leucoplast
B) nucleolus
C) ribosome
D) smooth ER
E) Golgi body

45) Where in the cell are proteins synthesized?
A) ribosomes and the nucleolus
B) rough and smooth ER
C) nucleolus and smooth ER
D) Golgi body and the nucleolus
E) ribosomes and rough ER

46) According to the Cell Theory,
A) plant cells have cell walls.
B) cells reproduce.
C) all cells need oxygen for cellular respiration.
D) a gene is a segment of DNA.
E) eukaryotic cells evolved from prokaryotic cells.

47) What membrane surrounds the central vacuole in plants cells?
A) the proplastid
B) the tonoplast
C) the thylakoid
D) the cristae
E) the leucoplast

48) The organelle associated with cellular respiration and the production of energy within a cell is the
A) matrix
B) cristae
C) microbody
D) Golgi body
E) mitochondrion

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49) The oils in a peanut are stored in an organelle known as the
A) ribosome.
B) amyloplast.
C) peroxisome.
D) elaioplast.
E) glyoxisome.

50) Nectar accumulates in the tube of a honeysuckle flower. What organelle would secrete the sugary nectar into the floral tube?
A) Golgi body
B) nucleolus
C) mitochondrion
D) chloroplast
E) smooth ER

51) The control center that houses the genetic material of a eukaryotic cell is the
A) nucleoplasm.
B) nucleolus
C) chromatin.
D) nucleus.
E) microbody.

52) An organelle common in plant cells but lacking in animal cells is the
A) central vacuole.
B) plasma membrane.
C) nucleus.
D) mitochondrion.
E) cytoskeleton

53) The inner membrane of a mitochondrion is folded. The folds are
A) grana.
B) stroma.
C) cristae.
D) matrix
E) thylakoids.

54) What are the small organelles in plant cells in which specific enzymatic reactions take place?
A) nucleoli
B) microbodies
C) microtubules
D) ribosomes
E) microfilaments

55) What is the main constituent of secondary cell walls in plant cells?
A) cellulose
B) pectin
C) phospholipids
D) lignin
E) chromatin

56) What organelle is abundant in seeds and converts fats to sugars?
A) cytoskeleton
B) peroxisome
C) elaioplast
D) glyoxisome
E) smooth ER

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57) What is the role of the central vacuole in plants?
- A) water reservoir
- B) pigment storage
- C) converts toxic waste into inert crystals
- D) generates turgor pressure
- E) generates water

58) Which cytoskeletal element is composed of actin?
- A) thin filaments
- B) microtubules
- C) intermediate filaments
- D) microfilaments
- E) thick filaments

59) In what phase of interphase do the final preparations for mitosis take place?
- A) Gap_2
- B) Gap_1
- C) prophase
- D) S
- E) telophase

60) What organelle stores plant products used in turning animal skins into leather?
- A) amyloplasts
- B) glyoxysomes
- C) leucoplasts
- D) proteasomes
- E) tannosomes

61) What protein causes chromatin to become tightly coiled to form chromosomes?
- A) cyclin
- B) condensin
- C) chromatin
- D) adhesin
- E) cohesion

62) What organelle is the location for tagged proteins to be disassembled and the amino acid recycled?
- A) peroxisome
- B) ribosome
- C) proteasome
- D) tannosome
- E) glyoxysome

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Answer Key

Test name: Chapter 02

1) D
2) B
3) A
4) B
5) C
6) D
7) A
8) D
9) C
10) B
11) E
12) C
13) A
14) E
15) C
16) A
17) A
18) B
19) D
20) D
21) B
22) C
23) E
24) D
25) C
26) E
27) D
28) C
29) E
30) B
31) A
32) C
33) D
34) E
35) A
36) E
37) A
38) C
39) B
40) E
41) B
42) D
43) D
44) D
45) E
46) B
47) B
48) E
49) D
50) A
51) D
52) A
53) C
54) B
55) D
56) D
57) E
58) A
59) A
60) E
61) B
62) C

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