

Department: Zoology
Year: FOURTH Ch -Z
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Course code:
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Time Allowed: half & hour
Total points:
DR. Name(s): Mohamed El -Gerbed



Answer all questions: Pick up the correct answer.

1) The two main functions of the rough endoplasmic reticulum are the production of

- A) Mitochondria and proteins secreted by the cell.
- B) Hydrogen peroxide and steroid hormones secreted by the cell.
- C) Ribosomes and steroid hormones.
- D) Membrane and proteins secreted by the cell.
- E) Chromatin and mitochondria

2) The nucleus of a cell

- A) Is surrounded by a single layer of membrane.
- B) Is contained within the nucleolus.
- C) Is the region of the cell where ribosomes are degraded.
- D) Contains DNA.
- E) Is the primary location of protein synthesis.

3) Phagocytosis is to eating as pinocytosis is to

- A) Osmosis.
- B) Drinking.
- C) Chewing.
- D) Hydrolysis.
- E) lyses.

4) You are adrift in the Atlantic Ocean, and, being thirsty, drink the surrounding seawater. As a result,

- A) You quench your thirst.
- B) Your cells lyse, due to the excessive intake of salt.
- C) Your cells become turgid.
- D) You dehydrate yourself.
- E) Your cells lyse from excessive water intake.

5) The molecules responsible for membrane transport are

- A) Steroids.
- B) ATP.
- C) Phospholipids.
- D) Carbohydrates.
- E) Proteins.

6) A cell that neither gains nor loses water when it is immersed in a solution is

- A) Isotonic to its environment.
- B) Hypertonic to its environment.
- C) Hypotonic to its environment.
- D) Metabolically inactive.
- E) Dead.

7) Osmosis can be defined as

- A) The diffusion of water.
- B) The diffusion of nonpolar molecules.
- C) Active transport.
- D) The diffusion of a solute.
- E) endocytosis

8) Oxygen crosses a plasma membrane by

- A) Osmosis.
- B) phagocytosis.
- C) Active transport.
- D) pinocytosis.
- E) Passive transport

9) The fluid mosaic model describes the plasma membrane as consisting of

- A) A phospholipid bilayer with embedded carbohydrates.
- B) Two layers of phospholipids with protein sandwiched between them.
- C) A protein bilayer with embedded phospholipids.
- D) Carbohydrates, proteins, and phospholipids that can drift in the membrane.
- E) Individual proteins and phospholipids that can drift in a phospholipid bilayer.

10) A child dies following a series of chronic bacterial infections. At the autopsy, the physicians are startled to see that the child's white blood cells are loaded with vacuoles containing intact bacteria. Which of the following explanations could account for this finding?

- A) A defect in the Golgi apparatus prevented the cells from processing and excreting the bacteria.
- B) A defect in the rough endoplasmic reticulum prevented the synthesis of the antibodies (defensive proteins) that would have inactivated the bacteria.
- C) A defect in the cell walls of the white blood cells permitted bacteria to enter the cells.
- D) A defect in the lysosomes of the white blood cells prevented the cells from destroying engulfed bacteria.
- E) A defect in the surface receptors of the white blood cells permitted bacteria to enter the cells.

11) Most animal cells are

- A) Surrounded by a cell wall.
- B) Attached to each other via plasmodesmata.
- C) Embedded in an endomembrane system.
- D) Embedded in an extracellular matrix.
- E) Embedded in a lipid matrix.

12) The function of mitochondria is

- A) Cellular respiration.
- B) Intracellular transport of proteins.
- C) Lipid synthesis.
- D) Photosynthesis.
- E) Intracellular digestion

13 Cyanide inhibits mitochondrial function; as a result, the rate of

- A) ATP synthesis increases.
- B) ATP synthesis decreases.
- C) Photosynthesis increases.
- D) Lipid synthesis increases.
- E) Protein synthesis increases

14 The _____ of a mitochondrion is/are an adaptation that increases the surface area and enhances a mitochondrion's ability to produce ATP.

- A) Stroma
- B) Grana
- C) intermembrane space
- D) cristae
- E) Matrix

15) Which of the following statements about lysosomes is false?

- A) Lysosomes help to digest worn-out or damaged organelles.
- B) Lysosomes synthesize proteins from the recycled amino acids.
- C) Lysosomes fuse with food vacuoles to expose nutrients to lysosomal enzymes.
- D) Lysosomes destroy harmful bacteria engulfed by white blood cells.
- E) Lysosomes recycle materials within the cell.

16) The Golgi apparatus

- A) Is composed of stacks of membranous vesicles that are continuous with one another.
- B) Stores, modifies, and packages proteins.
- C) Strings together amino acids to produce proteins.
- D) Forms fats from glycerols and fatty acids.
- E) Is the site of carbohydrate breakdown

17) The endomembrane system includes all of the following organelles except the

- A) Plasma membrane.
- B) Endoplasmic reticulum.
- C) peroxisome.
- D) Golgi apparatus.

18) Plasma membranes are permeable to

- A) Large molecules such as starch.
- B) Large molecules such as proteins.
- C) Small ions such as Na⁺.
- D) Nonpolar molecules such as CO₂.
- E) Hydrophilic molecules such as glucose.

19) The nucleus of a cell

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- B) Is contained within the nucleolus.
- C) Is the region of the cell where ribosomes are degraded.
- D) Contains DNA.
- E) Is the primary location of protein synthesis.

20) DNA differs from RNA because DNA

- A) Contains thymine in place of uracil.
- B) Consists of a single rather than a double polynucleotide strand.
- C) Contains the sugar ribose rather than the sugar deoxyribose.
- D) Contains phosphate groups not found in RNA.
- E) Is always double-stranded, while RNA is never double-stranded.

21) Genetic information is encoded in the

- A) Quaternary structure of a protein.
- B) Sequence of nucleotides in DNA.
- C) Degree of saturation of fatty acids.
- D) Length of glycogen.
- E) Linear sequence of amino acids in a polypeptide

22) Which of the following statements about cells is true?

- A) All cells have cell walls.
- B) All cells have internal structures that move.
- C) All cells are attached to other cells.
- D) All cells are motile.
- E) All cells have static organelles.

23) A major type of lipid found in cell membranes is

- A) Cellulose.
- B) Triglycerides.
- C) Phospholipids.
- D) Glycerol.
- E) Waxes

24) Your instructor asks you to look into your microscope to see a prokaryotic cell. You will be looking for a cell that

- A) Has a nucleus.
- B) Has a membrane.
- C) Makes up most of the tissues of your body.
- D) Is much larger than most cells in your body.
- E) Does not use DNA to code genetic information.

25) A solution with a pH of 7 is

- A) Strongly acidic.
- B) Weakly acidic.
- C) Neutral.
- D) Weakly basic.
- E) Strongly basic.