

1-Which of the following type of microscope is used to study the internal structure of the cell?

- a) Light Microscope
- b) Scanning electron microscope
- c) Transmission electron microscopes
- d) None of the above

2-Which one of the following is found in animal cells?

- a) Central vacuole
- b) cell wall
- c) Lysosome
- d) Chloroplast

3-Ribosomes are synthesized in

- a) Nucleolus
- b) Nucleus
- c) endoplasmic reticulum (ER)
- d) Golgi apparatus

4-Which one of the following organelles can digest macromolecules such as proteins, and use enzymes to recycle the damaged organelles?

- a) Lysosome
- b) Ribosome
- c) Nucleus
- d) Mitochondria

5- Which one of the following are Energy-Converting Organelles?

- a) Mitochondria& Ribosome
- b) Ribosome& Chloroplasts
- c) Mitochondria & Chloroplasts
- d) Ribosome& Mitochondria

6- Extracellular matrix (ECM) is made up of

- a) Cellulose
- b) collagen fibers

c) fats

d) Glucose

7- Which one of the following organelles is not a part of the endo-membrane system?

- a) Lysosome
- b) Ribosome
- c) Chloroplast
- d) Golgi apparatus

8-----is one of the Smooth ER functions

- a) lipids synthesis
- b) Distribution of manufactured proteins
- c) protein synthesis
- d) None of the above

9-The cells of Pancreas that secrete digestive enzymes have an abundance of....., which receive & pack these enzymes into transport vesicles to release their contents outside the cells.

- a) Ribosome
- b) Chloroplast
- c) Golgi apparatus
- d) Mitochondria

10-are the sites of protein synthesis.

- a) Mitochondria
- b) Lysosomes
- c) Ribosomes
- d) Golgi apparatus

11- The Cell membrane phospholipids have a..... head and twotails.

- a) Hydrophilic& hydrophobic
- b) Hydrophobic& hydrophilic
- c) Hydrophilic& hydrophilic
- d) Hydrophobic& hydrophobic

12- The cell membrane allows some substances such as to cross more easily than others.

- a) Oxygen
- b) Carbon dioxide
- c) Water
- d) All of the above

13- Which one of the following mechanisms is used to export bulky molecules, such as proteins or polysaccharides?

- a) Endocytosis
- b) Exocytosis
- c) Diffusion
- d) Osmosis

14-..... is a biological process, which uses ATP to pump molecules AGAINST/UP the concentration gradient (molecules move from a low concentration of solute to high concentration of solute).

- a) Passive Transport
- b) Active Transport
- c) Osmosis
- d) Endocytosis

15- is the net movement of molecules from a region of higher concentration to a region of lower concentration.

- a) Passive transport
- b) Osmosis
- c) Active transport
- d) Pinocytosis

16- Which statement is CORRECT about osmosis?

- a) It occurs only across a semi-permeable membrane
- b) Water travels from a solution of lower solute concentration to a solution of higher solute concentration
- c) A+b
- d) None of the above

17-Which one of the following statement is TRUE about diffusion?

- a) It involves movement of solvent molecules
- b) It occurs when particles move from a region of lower concentration to a region of higher concentration
- c) It does not require a semi-permeable membrane
- d) All of the above

18- To block the enzyme action, the enzyme's active site interacts with

- a) the enzyme's substrate
- b) competitive inhibitors
- c) non-competitive inhibitor
- d) All of them

19- The study of energy relationships and their transformation is called

- a) Photosynthesis
- b) Metabolism
- c) Thermodynamics
- d) Oxidation

20- ATP is composed of adenine (a nitrogenous base), ribose (a five-carbon sugar), and

- a) three phosphate groups
- b) two phosphate groups
- c) one phosphate groups
- d) none of the above

21. Which of the following statements is FALSE?

- a. Krebs cycle is also called citric acid cycle
- b. Krebs cycle occurs in the cytoplasm
- c. Krebs cycle produces 2 ATP
- d. Krebs cycle supplies the third of cellular respiration with electrons

22. The energy currency of the cell is _____.

- a. Glucose
- b. ATP
- c. Protein
- d. lipid

23. Glycolysis begins respiration by breaking _____.
- ATP
 - Pyruvate
 - Glucose
 - Protein
24. Cellular respiration can produce up to _____ATP molecules for each glucose molecule.
- 23
 - 13
 - 32
 - 20
25. Cramps التقلصات during exercise are caused by:
- Alcohol fermentation
 - Lactic acid fermentation
 - Glucose
 - Glycolysis
26. The average adult human needs -----of energy per day.
- 2200 kj
 - 2200 km
 - 2200 kcal
 - 2200 kg
27. Which of the following is necessary for oxidative phosphorylation to occur?
- ATP
 - Oxygen
 - Carbon dioxide
 - Water
28. During cellular respiration, glycolysis occurs in:
- Cytoplasm
 - Thylakoids
 - Chloroplast
 - mitochondria
29. Fats are excellent sources of energy because they

- a. Contain many hydrogen atoms
- b. yield more than twice as much ATP per gram than a gram of carbohydrate
- c. Yield more than twice as much ATP per gram than a gram of protein.
- d. All of the above

30. Which one of the following are the products of the Krebs cycle?

- a. ATP
- b. NADH
- c. FADH
- d. All of the above

31. In eukaryotic cells, the ATP is produced by

- a. Mitochondria
- b. Nucleus
- c. Cytoplasm
- d. Chloroplast

32. Single-celled microorganisms that not only can use respiration for energy but can ferment under anaerobic conditions are called :

- a. Yeasts
- b. molds
- c. Bacteria
- d. Protists

33. The final electron acceptor in aerobic respiration is:

- a. CO₂
- b. O₂
- c. NAD⁺
- d. ATP

34. Which one of the following processes produces the most ATP?

- a. Glycolysis
- b. Oxidative phosphorylation
- c. Fermentation
- d. Krebs cycle

35. ATP can be generated from _____.

- a. Lipids
- b. Carbohydrates
- c. Proteins

d. All of them

36. The role of cellular respiration is
- Breaking down glucose to make ATP
 - Forming glucose from carbon dioxide and water
 - Forming water from glucose
 - consuming ATP to form oxygen
37. The first stage of photosynthesis takes place in the.....
- Thylakoids
 - Grana
 - Stomata
 - Stroma
38. Which of the following is not required during photosynthesis
- Water
 - Carbon dioxide
 - Oxygen
 - Light.
39. During what stage of photosynthesis is O₂ produced?
- Carbon fixation
 - Light – dependent reactions
 - Light – independent reactions
 - Calvin cycle
40. In the process photosynthesis
- Carbon dioxide and water are oxidised
 - Carbon dioxide is reduced and water is oxidized
 - Carbon dioxide and water are reduced
 - Carbon dioxide is oxidized and water is reduced
41. Both carotenoids and chlorophyll are _____.
- Coenzymes
 - Organelles
 - Pigments
 - Cofactors
42. ATP is
- required for the Calvin cycle

- b. a product of the Calvin cycle
- c. required for the light reactions
- d. not required during photosynthesis

43. In the light reactions, solar energy is converted to chemical energy stored in both ATP and _____.

- a. AMP
- b. ADP
- c. NADPH
- d. NADH

44. The Calvin cycle occurs in the _____ of the chloroplast.

- a. Stroma
- b. Stoma
- c. Thylakoid
- d. The inner mitochondrial membrane

45. Photosynthesis is an _____ reaction.

- a. Exergonic
- b. Endergonic
- c. a & b
- d. None of the above

46. In the leaf, chloroplasts are concentrated in the _____.

- a. Epidermis
- b. Veins
- c. Mesophyll
- d. Thylakoids

47. In the leaf, the CO₂ enters and the oxygen released through _____.

- a. Stroma
- b. Stoma
- c. Granum
- d. Epidermis

48. Plants are _____.

- a. Autotrophs
- b. Prototrophs
- c. Heterotrophs
- d. Auxotrophs

49. The oxygen released during photosynthesis comes from:
- a. Carbon dioxide
 - b. Carbon dioxide and water
 - c. Water
 - d. Glucose
50. What energy-rich organic compound is produced by the Calvin cycle?
- a. ATP
 - b. Sugar
 - c. NADPH
 - d. O₂
51. The chloroplast is the site of photosynthesis in a plant cell. It is enclosed by _____ membranes.
- a. One
 - b. Two
 - c. Three
 - d. Four