

Name _____
HS) _____

Cell Biology Test (John Jay

1. List the items to bring to the event:

- a. _____
- b. _____
- c. _____

2. What are 3 types of endocytosis?

- a. _____
- b. _____
- c. _____

3. What are vesicles and why are they important?

4. Which of the following enzymes adds nucleotides in the process of DNA replication?

- a. Ligase
- b. Polymerase III
- c. Polymerase I
- d. Helicase

5. What is osmosis?

6. What causes proteins to denature?

7. Based on the Endosymbiotic Theory, which of the following organelles is believed to have originated from a type of bacteria?

- a. golgi apparatus
- b. mitochondria
- c. ribosome
- d. endoplasmic reticulum

8. What are leucoplasts?

9. Name the liquid found in chloroplasts: _____

10. Why are many organelles inclosed in their own membranes?

11. Which of the following describes a plant cell in a hypotonic solution?

- a. turgid
- b. lysed
- c. flaccid
- d. shriveled

12. What are the three types of protein filaments that make up the cytoskeleton? List in order of increasing diameter.

- a. _____
- b. _____
- c. _____

13. The Golgi apparatus performs which of the following functions?

- a. oxidative phosphorylation
- b. intracellular degradation
- c. modification of proteins
- d. packaging of lipids

14. Microtubule functions include

- a. movement of organelles
- b. photosynthesis
- c. mobility of the cell
- d. DNA replication

15. ATP is required when transporting molecules against a gradient. What is this process called? _____

16. Phospholipids are _____, meaning that they have a hydrophilic head and two hydrophobic tails.

17. What is the protein coat that surrounds the genetic information in a virus called?

- a. vesicle

- b. capsid
- c. histone
- d. ribosome

18. What is the importance of cholesterol in the cell membrane?

19. List the 4 main processes in aerobic cellular respiration

- a. _____
- b. _____
- c. _____
- d. _____

20. Write the balanced chemical equation for cellular respiration

21. Write the balanced chemical equation for photosynthesis

22. Describe the process of chemiosmosis.

23. The folds in the mitochondrial membrane are called:

- a. thylakoids
- b. intermembrane space
- c. cristae
- d. extracellular matrix

24. The end products of the ETC are:

- a. CO_2 and O_2
- b. water and alcohol
- c. ATP and water
- d. ATP and CO_2

25. What is the name of the enzyme involved in the first major step of carbon fixation?

26. What is the name of the reaction-center molecule in photosystem II?

- a. P640
 - b. P660
 - c. P680
 - d. P700
27. Which of the following organelles has its own DNA?
- a. peroxisome
 - b. vacuole
 - c. mitochondria
 - d. golgi apparatus
28. What are the three types of frameshift mutation?
- a. _____
 - b. _____
 - c. _____
29. What is the ratio of sodium to potassium in a sodium potassium pump?
- a. 1:1
 - b. 1:2
 - c. 2:3
 - d. 3:2
30. Which scientist(s) experimented with bacteriophages?
- a. Griffith
 - b. Hershey and Chase
 - c. Watson and Crick
 - d. Hooke
31. Put the following lipoproteins in order of molecular size (1 = smallest; 5 = largest)
- a. LDL ____
 - b. IDL ____
 - c. HDL ____
 - d. chylomicrons ____
 - e. VLDL ____
32. What is the purpose of lipoproteins?
-
-
33. What is the difference between eukaryotic DNA and prokaryotic DNA?

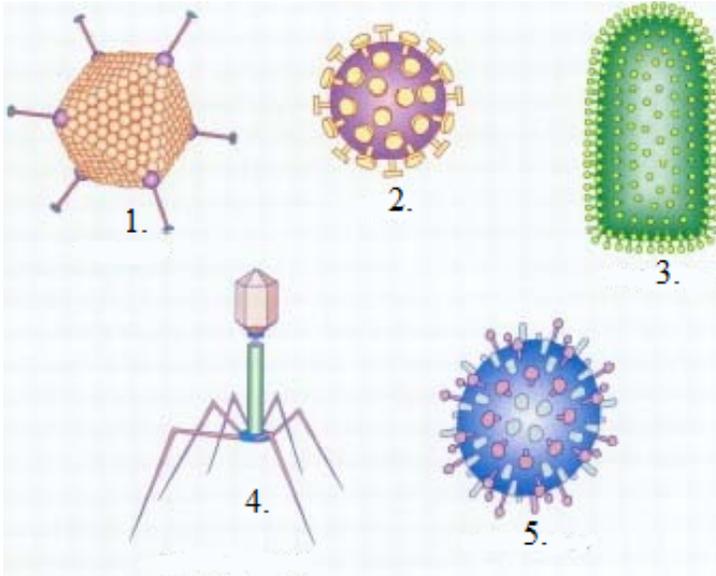
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34. What do eukaryotic cells and prokaryotic cells have in common?
- a nucleoid
 - flagella
 - membrane receptors
 - cytoskeleton
35. ATP is an energy-coupling agent rather than a fuel. What does this mean?
-
-
36. A surplus of ATP directly inhibits which compound in cellular respiration?
- Fructose-6-phosphate
 - Phosphofructokinase
 - Fructose-1,6-biphosphate
 - Pyruvate
37. Name two processes that occur in prophase of mitosis:
- _____
 - _____
38. What occurs in the S phase of interphase?
- cytoplasm grows
 - DNA replicates
 - organelles replicate
 - the cell divides
39. In what phase are chromosomes the largest?
- prophase
 - metaphase
 - anaphase
 - telophase
40. What is the cytoplasmic division of a cell that immediately follows mitosis or meiosis called? _____
41. Describe what occurs at each step of the bacteriophage lytic cycle:
- Attachment/adsorption _____
 - Penetration _____
-

c. Replication

d. Assembly

e. Release

42. Match each virus with its corresponding shape:



a. Influenza virus _____

b. Bacteriophage T2 _____

c. HIV _____

d. Adenovirus _____

e. Rabies virus _____

43. During what step of cellular respiration does fermentation occur? _____

44. What are the two pyruvates broken down into in alcohol fermentation?

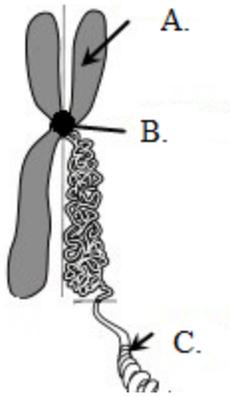
- a. 2 acetaldehyde
- b. 2 glyceraldehyde 3-phosphate
- c. 2 citrate
- d. 2 succinate dehydrogenase

45. What are the two waste products of alcohol fermentation?

- a. _____
- b. _____

46. What is the purpose of histones in chromosomes:

47. Name the chromosome structures:



- a. _____
- b. _____
- c. _____

Questions 48-50 are based on the following experiment:

Diana creates an experiment to measure the rate of cellular respiration using three respirometers. In the first respirometer she puts twenty-five germinating peas. In the second respirometer she puts twenty-five dormant peas and enough beads to equal the volume of the first respirometer. In the third respirometer she puts enough beads to equal the volume of both the first and second respirometer. Every five minutes for thirty minutes she checks and records the amount of oxygen consumed.

- 48. What is the dependent variable? _____
- 49. What is the independent variable? _____
- 50. What are two controlling variables? _____