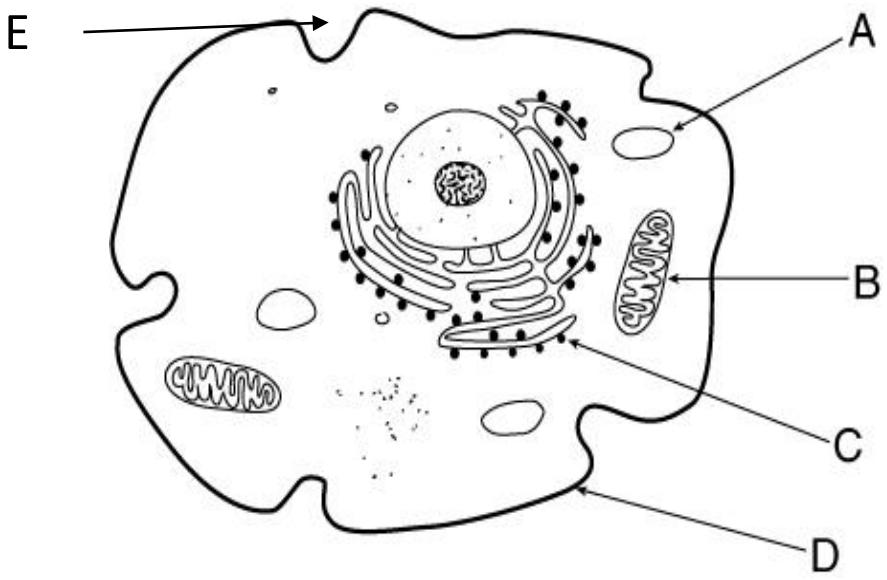
Questions 1-8 refer to the diagram, which represents a single cell of an organism:



Choose one of the choices on the diagram; you can use the letter more than once:

1. All of the labelled parts above are organelles EXCEPT (____)
2. Location of cellular respiration in eukaryotic cell (____)
3. Which of the following functions as the site of protein synthesis (____)
4. Which organelle can be found in prokaryotic cells as well as this cell (____)
5. Which of the following organelles would be present and larger in size in plant cells (____)
6. The movement of ions into and out of the cell is controlled by structure(____)
7. Which of the following is believed to function in intracellular transport(____)
8. If this cell is placed in dilute solute solution which organelle would be affected (____)

Questions 9-12: Match the correct letter with each statement of the following.

A- Oxygen
B- Carbon dioxide
C- Water
D- Chlorophyll
E- Glucose

9. Which compound captures light energy in plants? (____)
10. Which molecule activates enzymes? (___)
11. Which compounds ARE NOT needed for photosynthesis? (__)
12. Cellular respiration needs (___)

Questions 13-17: Match by writing the letter beside the correct number:

___13. Stage of meiosis during which recombination of genetic material occurs — A- Anaphase 2

___14. Stage of meiosis during which pairs of homologous chromosomes align at the centre of the cell — B-Telophase 2

___15. Stage of meiosis during which sister chromatids are separated — C- Cytokinesis

___16. Stage of meiosis during which nuclear envelope is formed — D- Metaphase

___17. Stage of cell division where cytoplasm and organelles are divided — E- Prophase 1

Questions 18-26: Complete using one of these terms:

A. Enzyme	G. Sucrose
B. Allosteric site	H. Starch
C. Peptide	I. Amino acids
D. Activation energy	J. Lactose
E. Temperature	K. Lipids
F. PH	L. Fatty acids

18. Catalyst is a term to describe ……...

19. --------- is the monomer of proteins.

20. ----------bond is formed to join monomers in protein.

21. Enzymes are used to decrease …….

22. ---------- is a disaccharide carbohydrate found in the milk.

23. ---------- is a factor affecting the enzyme activity by changing the acidity.

24. The increase in .....increase the enzyme activity.

25. ---------- is made from glucose and fructose.

26. ---------- are made from fatty acids and glycerol.

Questions 27– 29: Match the correct letter with each statement of the following.

A- 28 B- 56 C- 112 D- 54

27. A somatic cell of octopus (Octopus vulgaris) has 56 chromosomes. What number of chromosomes will the octopus gamete contain (___)?

28. What will be their autosomal chromosomes (___)

29. The number of their chromatids will be (___)

Questions 30–33: Match the correct letter with each statement of the following.

A- Diffusion B- Osmosis C- Facilitated diffusion D- Active transport

30. Where water will pass down concentration gradient (___)

31. Needs channel or carrier protein with no need of mitochondria to take place (___)

32. Substances move against gradient using it with the help of energy (___)

33. Macromolecules pass by this process from a region of its high concentration to region of its low concentration across a cell membrane. (___)

Questions 34–37: Circle the letter of the correct choice

34. Which stage DNA replication takes place at

a. G1 phase
b. S phase
c. G2 phase
d. M phase

35. What happens during mitosis

a. The nucleus of the cell divides.
b. The cytoplasm of the cell divides.
c. The cell divides.
d. The DNA replicates.

36. Chromosomes consists from.

a. Two sister chromatids.
b. Two sister chromatins.
c. Two sister DNA.
d. Four sister chromatids.

37. Longest Stage of the cell cycle

a. Mitosis.
b. Meiosis.
c. Interphase.
d. Cytokinesis

Questions 38–40: Write T if the statement is true and F is the statement is false:

_____38. Interphase consists of mitosis and cytokinesis.

_____39. DNA replication results in identical Chromosomes.

_____40. Organelles are made during growth phase 2.

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Bio12-Q1W1-Test

Modified True/False
Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

_F___ 1. The great northern coniferous forests are part of the tundra biome. _____

_F___ 2. A pioneer community is usually the stable result of succession. _____

___F_ 3. Optimal factors restrict the numbers of organisms that can exist. _____

_T___ 4. Age, physical condition, and stage in its life cycle may all influence an organism's limits of tolerance. _____

___F_ 5. The portion of the shoreline that is affected by high and low tides is the aphotic zone. _____

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 6. Water is lost to the abiotic parts of the biosphere from the biotic parts by the process of ___C__.
a. precipitation
b. photosynthesis
c. transpiration
d. infiltration

____ 7. Sea stars live in saltwater ecosystems. Some species live in shallow tidal pools, while others live in the deepest parts of the oceans. This is a description of the ___A__ of sea stars.
a. habitat
b. community
c. niche
d. none of these

____ 8. Cougars are predators that often eat weakened or diseased animals. This is a description of the __C___ of cougars.
a. habitat
b. community
c. niche
d. none of these

____ 9. An ecologist who studies how several species in an area interact among each other and with the abiotic parts of the environment is interested in the biological organization level called a(n) __D___.
a. organism
b. population
c. community
d. ecosystem

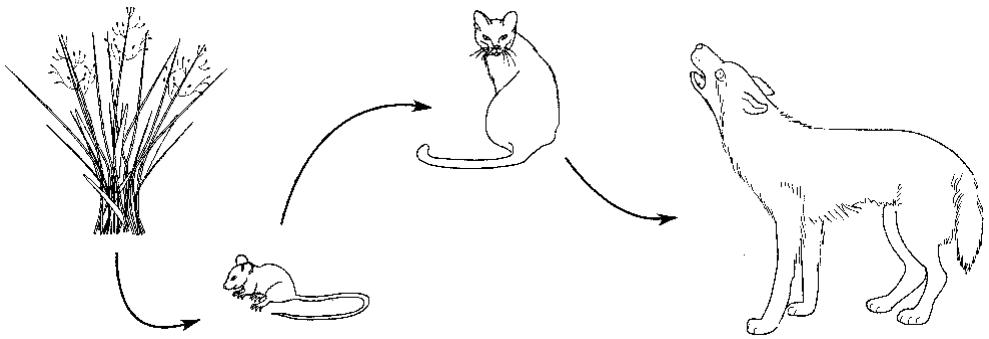

Figure 2-1

____ 10. Referring to Figure 2-1, suppose 10 000 units of energy are available at the level of the grasses. What is the total number of energy units lost by the time energy reaches the coyote? D

a. 90 units
b. 990 units
c. 9900 units
d. 9990 units

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Limiting factors whose effects increase as the size of the population increases are B
a. abiotic factors.
b. density-dependent factors.
c. exponential in nature.
d. density-independent factors.

____ 2. The movement of individuals from a population is D
a. immigration.
b. a reproductive pattern.
c. a life-history pattern.
d. emigration.

____ 3. Unrestricted populations of organisms experience A
a. exponential growth.
b. linear growth.
c. infertility.
d. biotic growth.

____ 4. For a particular species, the carrying capacity is the maximum number of individual organisms that
a. the species could reach in a given time period if all the offspring survive and reproduce. B
b. can be supported by a given environment.
c. are in their post-reproductive years.
d. can be supported if there are no limiting factors.

____ 5. Initially, population growth can be illustrated as a J-shaped curve. What is this type of growth called?C
a. Sinusoidal
b. Linear
c. Exponential
d. None of the above

____ 6. A new species of mouse is introduced into an environment. These mice reproduce and the population grows. As the population grows, food resources diminish and predation by hawks increases. Eventually, the number of mice in the environment levels off so that the rate of birth equals the rate of death. What is this nearly constant number of organisms called?
a. Carrying capacity
b. Exponential growth
c. Linear growth
d. None of the above

____ 7. You are studying organisms in an artificial environment. The environment is constantly changing and is unpredictable. What life-history pattern would you expect to be most common in this environment?
A
a. Rapid reproduction and short life span
b. Rapid reproduction and long life span
c. Slow reproduction and short life span
d. Slow reproduction and long life span

____ 8. Which of the following limiting factors is NOT density-dependent? B
a. Disease
b. Drought
c. Competition
d. Food supply

____ 9. Which of the following is NOT studied by demographers? D
a. Growth rate
b. Age structure
c. Geographic distribution
d. None of the above

____ 10. In analyzing the age structure of a population, you discover that an extraordinarily high percentage of the population is younger than the age of reproductive maturity. What kind of growth will the population probably experience in the future? C
a. Growth rate will remain the same.
b. Slow, steady growth increase
c. Rapid growth
d. None of the above

Modified True/False
Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

____ 26. The number of species in an area is a measure of biodiversity. _____T_____

____ 27. Temperate deciduous forests have more biodiversity than any other terrestrial biome. _____F_____

____ 28. Habitat fragmentation is the biggest threat to biodiversity. _____F_____

____ 29. A plot of protected land may have different conditions at the edges than in the middle. This is known as corridor effect. _____F_____

____ 30. A species that is brought to a place where it never lived is considered a(n) native species. _____F_____

____ 11. What would be the best way to estimate the size of C in Figure 7-3? B

a. increase magnification
b. decrease magnification
c. estimate by what you can see
d. assume it is 2000 μm

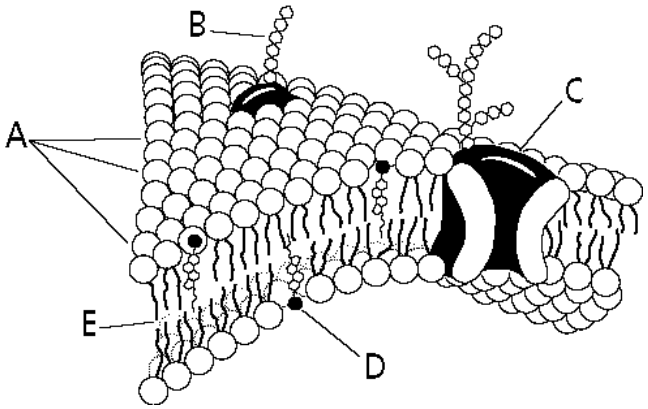

Figure 7-4

____ 12. What would happen to the structure in Figure 7-4 if part D is completely removed? D

a. it would become solid
b. it would disintegrate
c. it would have holes in it
d. it would collapse in on itself

____ 13. Where are you least likely to find water in the structure shown in Figure 7-4 D

a. A
b. B
c. C
d. E

____ 14. Which of the following pictures in Figure 7-5 most likely approximate the motion phospholipids make in a plasma membrane? C

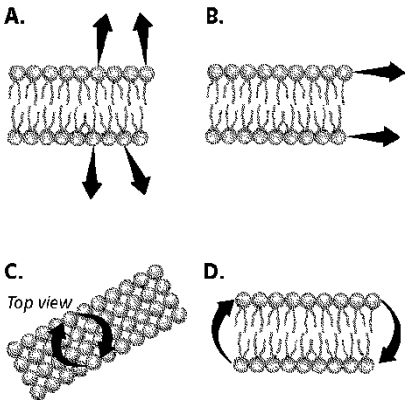

Figure 7-5

a. A
b. B
c. C
d. D

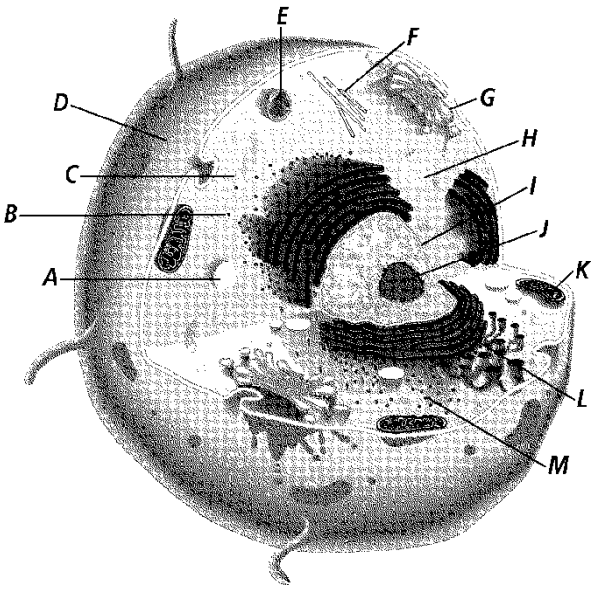

Figure 7-6

____ 15. Which structure in Figure 7-6 is the cell control center? C
a. A
b. G
c. I
d. M

____ 16. Which structure in Figure 7-6 maintains homeostasis? B
a. B
b. D
c. H
d. L

____ 17. Which structure in Figure 7-6 transforms energy? C
a. C
b. G
c. J
d. K

____ 18. Which parts of Figure 7-6 are in a prokaryotic cell? A
a. D and M
b. A and K
c. C and J
d. G and L

____ 19. Water moves into a cell placed in a(n) _____ solution. C
a. osmotic
b. hypertonic
c. hypotonic
d. isotonic

____ 20. If cells are placed in a strong sugar solution, water will _____. B
a. pass from the sugar solution to the cells
b. pass from the cells to the sugar solution
c. stay in the cell
d. pass back and forth

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Q1W5- Bio12-Test1

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. When materials pass into and out of a cell at equal rates, there is no net change in concentration inside the cell. The cell is in a state of B
a. inertia.
b. dynamic equilibrium.
c. metabolism.
d. imbalance.

____ 2. Which of the following compounds may be polymers? D
a. carbohydrates
b. nucleic acids
c. proteins
d. all of these

____ 3. When a few drops of colored corn syrup are added to a beaker of pure corn syrup, the color will
a. remain on the bottom of the beaker. B
b. start to diffuse.
c. move from low concentration to high concentration.
d. form a polar bond.

____ 4. Which of the following does NOT describe a polymer? B
a. Polymers usually form by covalent bonding.
b. Polymers are broken down by the process of hydrogenation.
c. Polymers are made of monomers.
d. Polymers are large molecules.

____ 5. The nucleus of an atom contains _____. D
a. protons, neutrons, and electrons
b. protons and electrons
c. neutrons and electrons
d. protons and neutrons

____ 6. The various enzymes in our bodies are _____. C
a. carbohydrates
b. lipids
c. proteins
d. nucleotides

____ 7. Diffusion can be accelerated by C
a. increasing the dynamic equilibrium.
b. decreasing the pressure.
c. increasing the temperature.
d. decreasing the movement of particles.

____ 8. Diffusion occurs because of A
a. random movement of particles.
b. chemical energy.
c. a chemical reaction between particles.
d. nonrandom movement of particles.

____ 9. Which of the images in Figure 6-4 depicts dynamic equilibrium? C

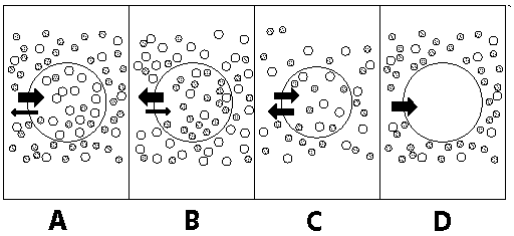

Figure 6-4

a. B
b. D
c. C
d. A

____ 10. Glucose and fructose, with the formula $C_6H_{12}O_6$, differ in _____. C
a. kinds of atoms
b. arrangement of electrons
c. arrangement of atoms
d. numbers of atoms


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Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. ATP stores energy for use in several cellular functions. Which of the following does NOT require the breakdown of ATP? B
a. Enzyme production
b. Diffusion
c. Bioluminescence
d. Flagella movement

____ 2. Chlorophyll is the primary pigment in plant chloroplasts. It absorbs all wavelengths of light, EXCEPT —B
a. red.
b. green.
c. yellow.
d. All of the above

____ 3. In respiration, the final electron acceptor in the electron transport chain is __B___.
a. hydrogen ions
b. oxygen
c. H_2O
d. ATP

____ 4. In glycolysis, _____ molecules of ATP are used in the first step, and _____ molecules of ATP are produced in the second step. D
a. four, two
b. two, two
c. four, four
d. two, four

____ 5. The Calvin cycle produces a molecule that is able to reenter the cycle as a reactant. Which of the following molecules is used as a reactant in the beginning of the Calvin cycle and is then produced at the end?D
a. ATP
b. Phosphoglyceric acid
c. Carbon dioxide
d. Ribulose biphosphate

____ 6. Which sugar is a part of adenosine diphosphate? C
a. adenine
b. ribose
c. glucose
d. glycogen

____ 7. Where is the electron transport chain located in the light-dependent reactions? C
a. Cytoplasm
b. Nucleus
c. Thylakoid membrane
d. Mitochondria

____ 8. Energy is released from ATP when the bond is broken between ___D__.
a. adenine and ribose
b. ribose and a phosphate group
c. adenine and a phosphate group
d. two phosphate groups

____ 9. Leaves appear green because the green portion of the light that strikes them is __D___.
a. destroyed
b. changed to heat
c. absorbed
d. reflected

____ 10. Organisms need a way of storing energy because __B___.
a. a cell cannot create energy and must get it from elsewhere in the organism
b. a cell can't always immediately use all the energy it gets
c. an organism often has times when no energy is used
d. a cell can release only stored energy