Midterm Review Practice Q's

1. 1
2. 4
3. 4
4. 4
5. 4
6. 2
7. 2

8. 3
9. 3
10. 1
11. 1

12. 1
13. 4
14. 2
15. 4

16. 1
17. 2
18. 4
19. 3
20. 1
21. 4
22. 1

23. 1
24. 4
25. 1
26. 4
27. 3

28. 2
29. 2
30. 3
31. 1
32. 3
33. 4

34. 3
35. 1
36. 3
37. 3

38. 2
39. 1

40. 4

Midterm Practice Short Answer
Answer Key

ist like complex organisms, cells are able to survive by coordinating various activities. Complex organisms have a riety of systems, and cells have a variety of organelles that work together for survival. Describe the roles of two organelles. In your answer be sure to include:

a the names of two organelles and the function of each
b an explanation of how these two organelles work together
c the name of an organelle and the name of a system in the human body that have similar functions

a) mitochondria - site of cellular respiration
ribosome - site of protein synthesis

b) mitochondria provides the ATP needed by the ribosomes to make proteins.

c) cell membrane - excretory system
nucleus - nervous system

A television advertisement claims that a certain brand of cough drop reduces coughing for 8 hours. Describe an investigation that could be used to determine if this claim is valid. In your answer, include at least a description of:

- the treatment to be given to the experimental group
- the treatment to be given to the control group
- the data to be collected
- when the data should be collected
- *one* observation that would lead to the conclusion that the claim is valid

- experimental group gets the cough drop
- control group does not get a cough drop/or placebo.
- # of coughs over the 8 hours.
- the experimental group had less coughing as compared to the control group.

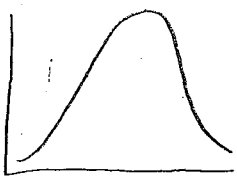
Describe what will happen to red onion cells in a wet-mount slide when a saltwater solution is added to them.

Cells will shrink/shrivel/lose water due to osmosis.

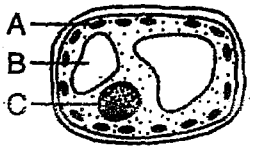
Some internal environmental factors may interfere with the ability of the enzyme responsible for converting starch into glucose to function efficiently.

Identify *two* internal environmental factors that directly influence the rate of this enzymes action.

Temperature & pH



The diagram below represents a cell viewed using a compound light microscope.

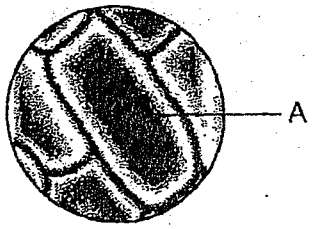


Select *one* of the lettered parts from the diagram. Record the letter of the part chosen in the space *provided on your answer paper* and, using one or more complete sentences, state the function of the part.

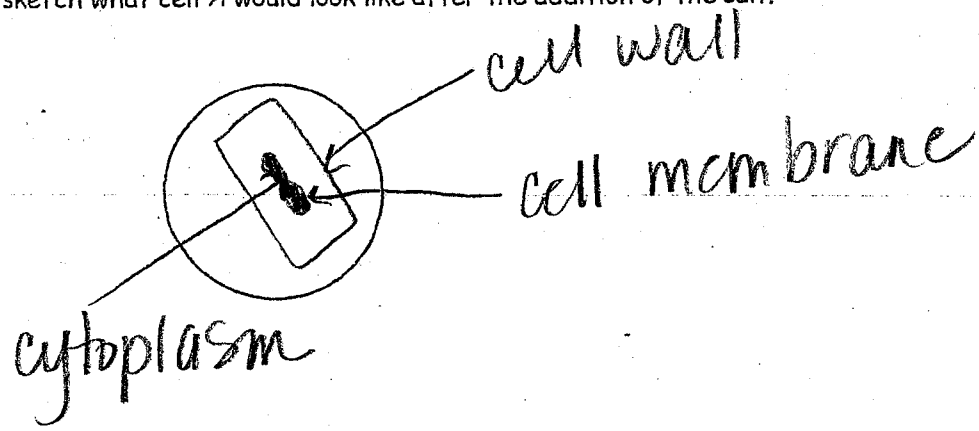
A - chloroplast: site of photosynthesis
B - vacuole: storage of water
C - nucleus: directs cellular activity/ contains DNA.

22. Base your answer to the following question on the information and diagram below and on your knowledge of biology.

A wet mount of red onion cells as seen with a compound light microscope is shown below.



In the space below, sketch what cell *A* would look like after the addition of the salt.



AIDS is an infectious disease that has reached epidemic proportions. Describe the nature of this disease and identify *two* ways to prevent or control the spread of infectious diseases, such as AIDS. In your response be sure to include:

- the type of pathogen that causes AIDS
- the system of the body that is attacked by that pathogen
- ~~the effect on the body when this system is~~ weakened by AIDS
- *two* ways to prevent or control the spread of infectious diseases, such as AIDS

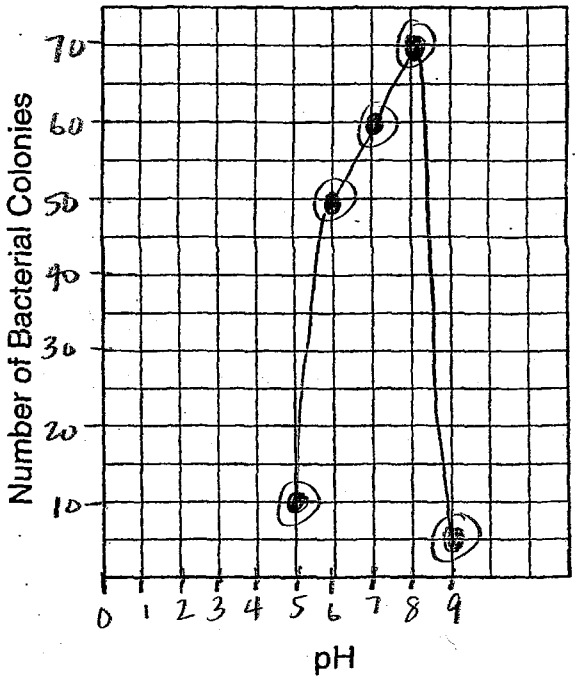
- HIV (virus)
- immune
- body is unable to fight off pathogens
- use condoms, don't share needles

Base your answer to the following question on the information and data table below.

One milliliter of a solution containing an even distribution of a species of bacterium was spread on the surface of a nutrient medium in each of five culture dishes. The nutrient medium in each dish was the same, except for pH. The dishes were then incubated at 37°C for 24 hours. The number of bacterial colonies in each dish was then counted, and the results are represented in the data table below.

Data Table

pH of Nutrient Medium	Number of Bacterial Colonies on Nutrient Medium
5	10
6	50
7	60
8	70
9	5



a. Plot the data for the number of bacterial colonies on the grid.

b. Surround each point with a small circle and connect the points.

c. Select and label appropriate axis's for your graph.

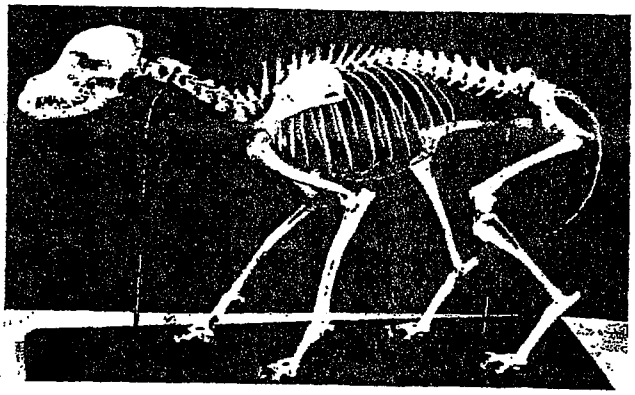
d. Write an appropriate title.

Digestive - breaks food down into nutrients small enough to be used by the cells.

Immune - defends the body against pathogens.

Circulatory - transports oxygen, nutrients, hormones throughout the body.

The skeletal system of an animal is shown in the photograph below.



List *three* systems, other than the skeletal system, the animal had when alive that helped it to survive. Describe how each of these three systems contributed to maintaining homeostasis.

Living Environment - Midterm Practice Questions

1) SAMPLE ANSWERS:
   (a) digestion and transport OR respiration and photosynthesis;
   (b) Digestion breaks food down into smaller molecules which can pass across the lining of the intestine and enter the blood and be transported to cells for energy release. OR Photosynthesis produces food that is broken down by respiration to make energy available.

2) SAMPLE ANSWERS: (1) small intestine OR digestive system; (2) sugar OR amino acid OR digested food; (3) sugar diffuses from the inside of the small intestine into the blood.

3) SAMPLE ANSWERS:
   A — cell/plasma membrane, regulates what enters and leaves the cell. OR
   B — nucleus, controls cell activities or contains the genetic codes. (Do not accept "brain" or "control center" without further explanation.) OR
   C — mitochondrion, respiration or energy release or production of ATP (Do not accept "power house" without further explanation.)

4) SAMPLE ANSWERS: Food must be digested before it can enter a cell since... certain food molecules are too large to pass through the cell membrane. OR ...only small molecules can pass through membrane pores.

5) SAMPLE ANSWERS:
   (a) temperature OR pH OR concentration of enzyme OR substrate;
   (b) If the shape changes, it will not fit with the same substrate. OR The enzyme no longer fits with the molecules with which it interacted before. OR Shape determines function.

6) SAMPLE ANSWERS: The blood absorbs nutrients. OR Food is added to the blood as it flows through the digestive system. OR Sugar is added. OR Amino acids are added. OR decrease in oxygen

7) SAMPLE ANSWERS:
   Photosynthesis: (2) chloroplast; (3) CO_2 and H_2O; (4) glucose; (5) to produce ATP OR to produce starch; (6) The gas... is used for respiration OR provides O_2 for respiration;
   Respiration: (2) mitochondrion; (3) organic molecules and O_2 OR sugar and oxygen; (4) ATP; (5) to provide energy for metabolism; (6) Respiration provides CO_2 for photosynthesis. OR The gas is used for photosynthesis.

8) SAMPLE ANSWERS:
   (1) a garlic bulb grown in (distilled) water;
   (2) Each experimental group would have a different concentration of salt solution.;
   (3) the length of the leaf in each group OR the length of the roots in each group OR the number of roots in each group;
   (4) There is an increase in the length of the leaves as the salt concentration increases. OR There is an increase in the length of the roots as the salt concentration increases. OR More salt results in more roots.

1) 3	2) 4	3) 2	4) 4	5) 3
6) 1	7) 3	8) 2	9) 4	10) 1
11) 2	12) 3	13) 4	14) 3	15) 1
16) 2	17) 4	18) 2	19) 4	20) 2