

**Towheed Iranian School**  
(International Section)  
Second Term, Final Exams, 2015-2016

Mark
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<b>50</b>

Subject: BIOLOGY

Date: 28/05/2016

Name: \_\_\_\_\_ Grade: Nine Section: A, D

Exam time: 90 min

**A) Choose the best answer and write the option in the space provided. /14**

\_\_\_\_ 1. Which of the following characteristics do cuticles and seeds share?

- a. Both are parts of the vascular system.
- b. Both use stomata for air movement.
- c. Both involve a type of protective coating.
- d. Both help support the plant's weight.

\_\_\_\_ 2. One major benefit of farming is

- a. being able to gather food.
- b. improved hunting prospects.
- c. a more reliable food supply.
- d. not being tied to one area.

\_\_\_\_ 3. A \_\_\_\_\_ causes a chemical, cellular, or behavioral change in an organism.

- a. stimulus
- b. response
- c. homeostasis
- d. endocrine

\_\_\_\_ 4. Which statement is true about the rates of cell division in eukaryotes?

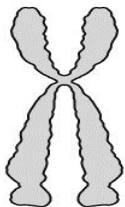
- a. They remain the same for the life of the organism.
- b. They are faster than that of prokaryotes.
- c. They increase with the age of the organism.
- d. They vary greatly within an organism

\_\_\_\_ 5. What does the pressure-flow model explain?

- a. how pressure is kept the same throughout a plant
- b. how water moves through a plant
- c. how sugars are produced by photosynthesis
- d. how sugars move through a plant

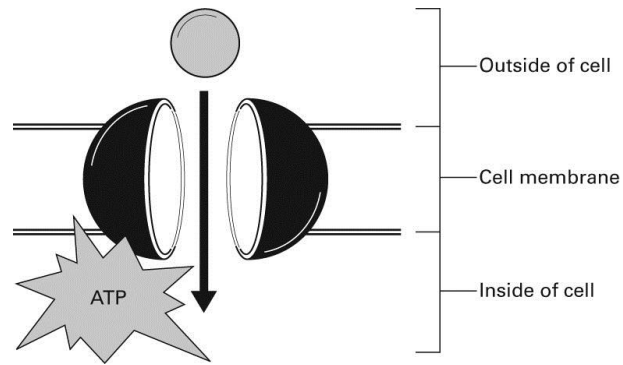
- \_\_\_6. Substances known to produce or promote cancer are called
- carcinogens.
  - kinases.
  - cyclins.
  - malignancies.
- \_\_\_7. The function of guard cells is to
- keep carbon dioxide out.
  - produce potassium ions
  - carry out photosynthesis
  - open and close the stomata.
- \_\_\_8. The process of organizing and condensing DNA into its compact form takes place at the start of
- interphase.
  - metaphase.
  - mitosis.
  - cytokinesis
- \_\_\_9. Dead parenchyma cells that make up bark form a type of
- collenchymal tissue.
  - vascular tissue.
  - dermal tissue.
  - ground tissue
- \_\_\_10. The process of selecting plants with the best traits, saving their seed, and planting them the next year is called \_\_\_\_\_.
- gathering
  - harvesting
  - selecting
  - artificial selection
- \_\_\_11. Which of the following are infectious RNA particles that cause disease in plants?
- viroids
  - prions
  - viruses
  - bacteria

\_\_\_12. Which statement describes the chromosome shown in the diagram below ?



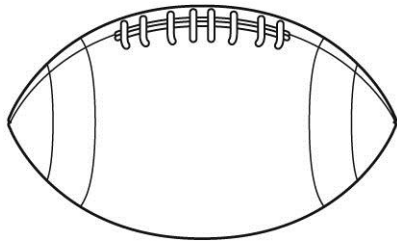
- It is made up of two histones.
- It is made up of two chromatids.
- It is made up of two centromeres.
- It is made up of two telomeres.

\_\_\_ 13. What process is shown in the figure below?



- a. diffusion
- b. passive transport
- c. facilitated diffusion
- d. active transport

\_\_\_ 14. Suppose you want to find the surface area of the football in Figure below. Which of the following do you need to measure?



- a. the weight of the football
- b. the quantity of leather used
- c. the pressure of the air inside
- d. the amount of air it can hold

**B) Write the full forms of the following abbreviations. ( / 4)**

AIDS: \_\_\_\_\_

SARS: \_\_\_\_\_

MRI: \_\_\_\_\_

CT: \_\_\_\_\_

**C) Fill up the blanks ( /5)**

Botany	tolerance	chemical imbalance	ligand
Histones	ethnobotany	neurotransmitter	petiole Nervous
Stem	2 weeks	endocrine	Alkaloids drugs 6 weeks

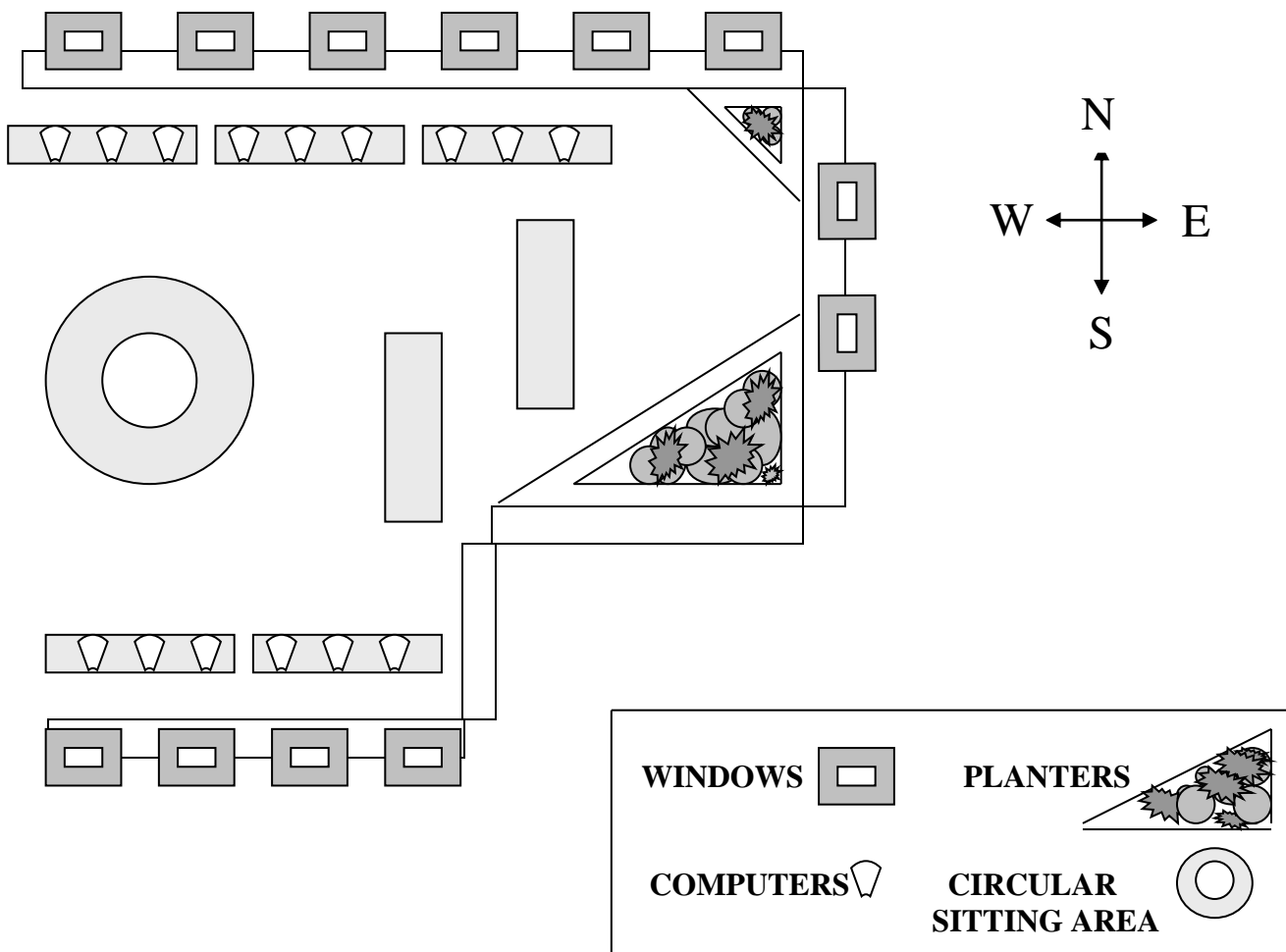
1. Desensitization can lead to \_\_\_\_\_, which means that larger and larger amounts of a drug are needed to achieve the same effect.
2. The blade connects to the stem by thin stalk called \_\_\_\_\_
3. DNA wraps around organizing proteins called \_\_\_\_\_.
4. The \_\_\_\_\_ system works slowly and controls processes that occur over long periods of time
5. \_\_\_\_\_ is the study of exploring how people in different culture use plants
6. Approximant life span of a skin cell is \_\_\_\_\_
7. Depression and Alzheimer’s disease are examples of mental illness linked to \_\_\_\_\_ in the brain.
8. Plants are the source of most of the \_\_\_\_\_ used in medicine today.
9. \_\_\_\_\_ is the programmed cell death.
10. \_\_\_\_\_ are potent plant chemicals that contain nitrogen and can sometimes be used as medicines.

**D) Graph the following data. (line graph) ( /3)**

A farmer has been keeping records of the water temperature and the number of clams developing from fertilized eggs. the data is given below.

Water temperature in °C	Number of developing clams
15	75
20	90
25	125
30	140
35	75
40	40
45	15
50	5

E) Study the diagram below then answer the following questions. (/2)



1) Each window for the new lab takes about 7 minutes to clean. About how long will it take to clean all the windows on the north and south walls of the building?

- A. 50 minutes
- B. 1 hour and 10 minutes
- C. 60 minutes
- D. 1 and ½ hours

2) What fractional part of the windows is located on the south side of the building?

- A. 4/6
- B. 1/3
- C. 2/3
- D. 4/10

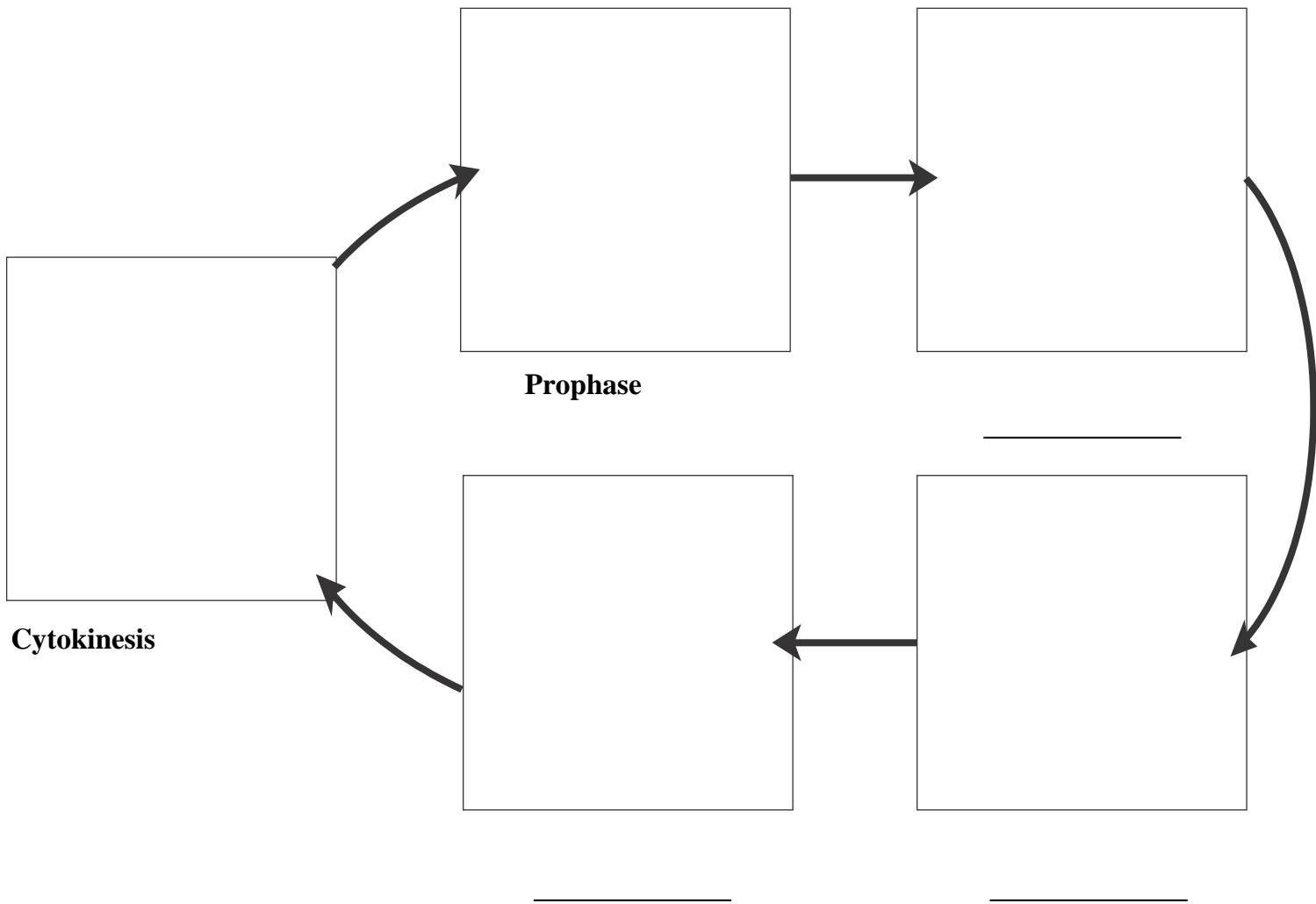
3) The largest planter is located on what wall of the room?

- A. North
- B. Northwest
- C. South
- D. Southeast

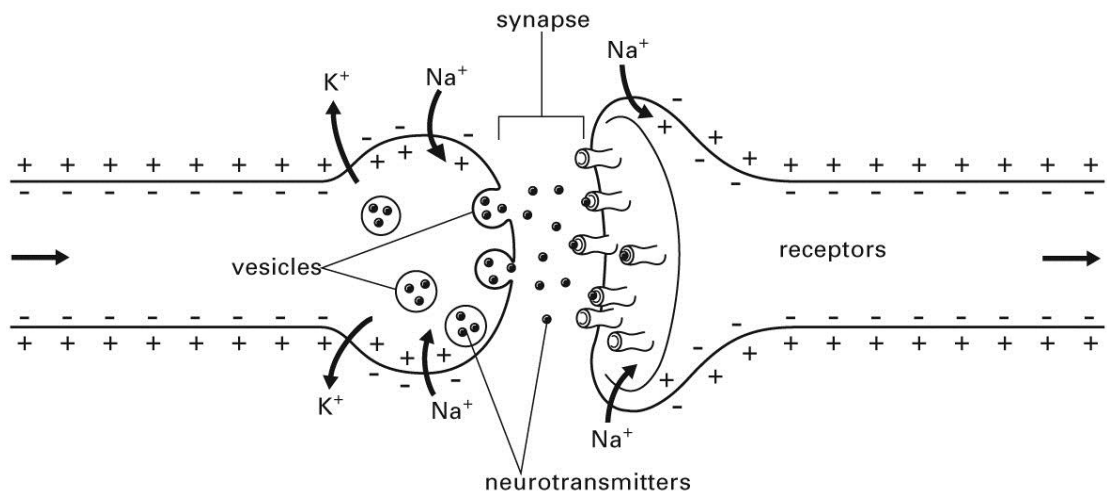
4) Most of the computers are located on which wall of the room?

- A. North
- B. South
- C. West
- D. East

F) Complete the diagram illustrating the four phases of mitosis and one phase of cytokinesis (/5)



**G) Short Answer Use the diagram below to answer items 1-3. ( /3 )**



1. What two types of signals are shown in the figure above?  
\_\_\_\_\_
2. How does an action potential that is moving down an axon affect the charge of the neuron's inner membrane?  
\_\_\_\_\_
3. What happens when an action potential reaches the terminal of the axon?  
\_\_\_\_\_  
\_\_\_\_\_

**H) Explain in detail ANY ONE ( /3 )**

1) The cohesion –tension theory with the help of a diagram.

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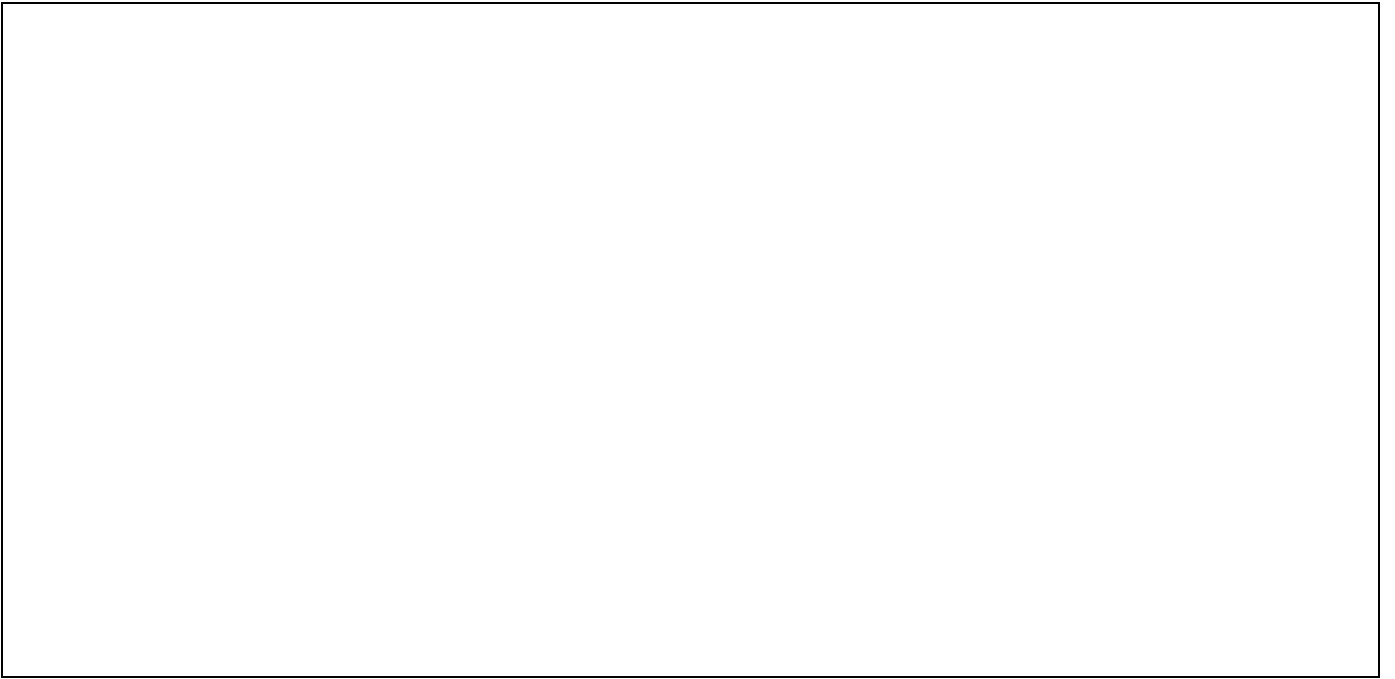


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**OR**

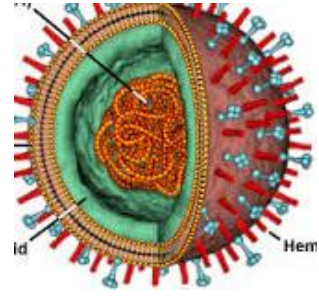
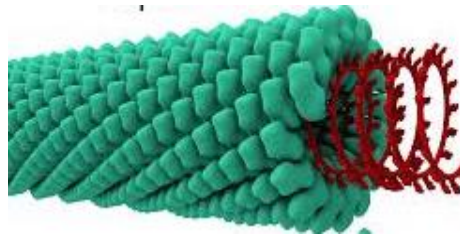
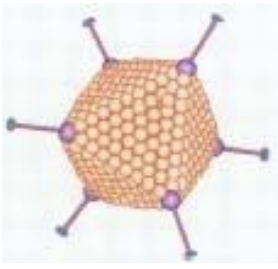
2) The lytic infection and lysogenic infection with the help of a diagram.

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I) Name types of viruses and name one disease caused by each of them. ( /3)



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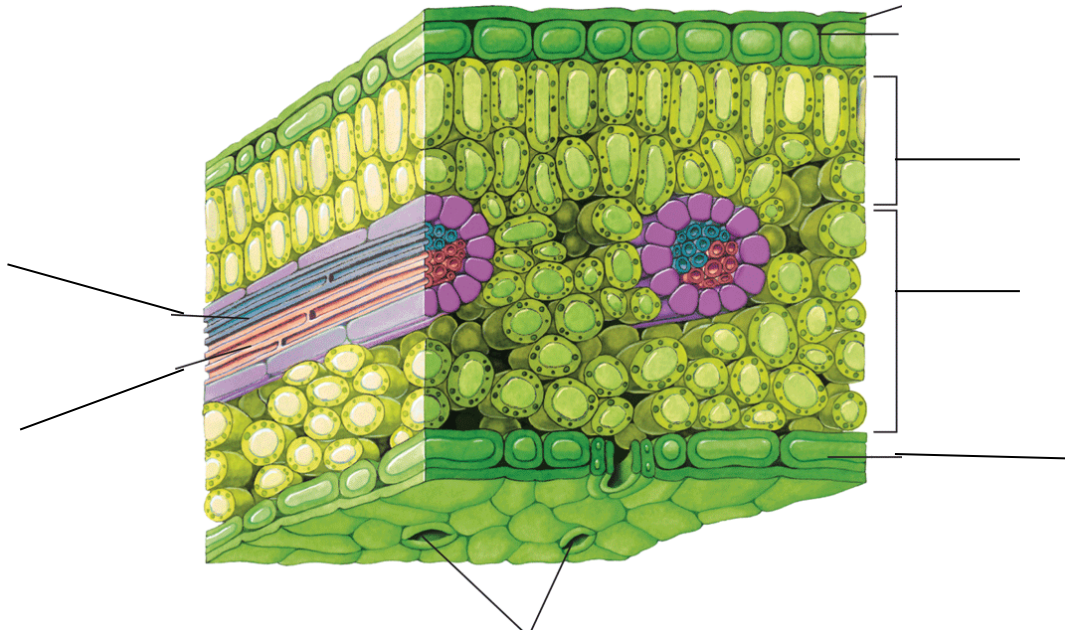
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Label the diagrams ( /4)



( /4)

