



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

Mark

50

Subject: BIOLOGY

Date: 12/12/2015

Name: _____

Grade: TEN, Section: A D

Exam time: 120 min

Q1) Circle whether TRUE or FALSE.

12 marks

1. *true / false* An exothermic chemical reaction absorbs more energy than it releases.
2. *true / false* An atom becomes an ion when its number of protons changes.
3. *true / false* Some ions are positively charged, and some ions have no charge.
4. *true / false* A theory is a scientific idea that has been proven to be true.
5. *true / false* Ions usually form when electrons are transferred from one atom to another.
6. *true / false* Theories can change over time as new evidence is discovered
7. *true / false* Some chemical reactions release more energy than they absorb, while others absorb more energy than they release.
8. *true / false* The formation of an ion results in a full outermost energy level.
9. *true / false* Chemical reactions can occur whether or not energy is added to the reactants.
10. *true / false* Scientists now have the ability to manipulate DNA.
11. *true / false* It is not possible to map the entire human genome.
12. *true / false* A gene is a type of computer model used to study diseases

Q2) Sketch the structure of an atom. Label the protons, neutrons, nucleus, and electrons. 2

Q3) Fill in the chart using the words from the box.

3

touch volume temperature mass lightyear taste

Qualitative data	Quantitative data
i. _____	iv. _____
ii. _____	v. _____
iii. _____	vi. _____

Q4) Choose the best answer and write it in the space provided.

12 marks

_____ 1. Which phrase best describes atoms?

- a. single-celled organism
- b. smallest basic units of matter
- c. parts of a nucleus
- d. positively charged particles

_____ 2. The reaction shown in Figure 4.2 happens faster than it would if the substance labeled A were not present. What is substance A?



FIG. 4.2

- a. an enzyme
- b. a gradient
- c. a phospholipid
- d. an organelle

_____ 3. Which of the following cannot be broken down by ordinary chemical means?

- a. element
- b. compound
- c. molecule
- d. bond

_____ 4. An understanding of biology helps you evaluate important issues based on

- a. hypotheses.
- b. economics.
- c. evidence.
- d. opinions.

- ___ 9. Which of the following statements is true for *all* cells?
- They use solar energy.
 - They use photosynthesis.
 - They use chemical energy.
 - They use chemosynthesis.
- ___ 10. Which phrase best describes the function of the ATP molecule?
- stores energy
 - carries energy
 - absorbs energy
 - converts energy
- ___ 11. Which of the following diagrams in Figure 4.1 could be used to illustrate diffusion?

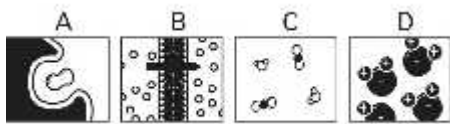
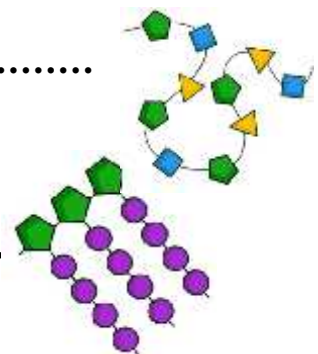


FIG. 4.1

- A
 - B
 - C
 - D
- ___ 12. *Biotechnology* is technology based on
- geological processes.
 - astronomical events.
 - living things and biological processes.
 - computer modeling.

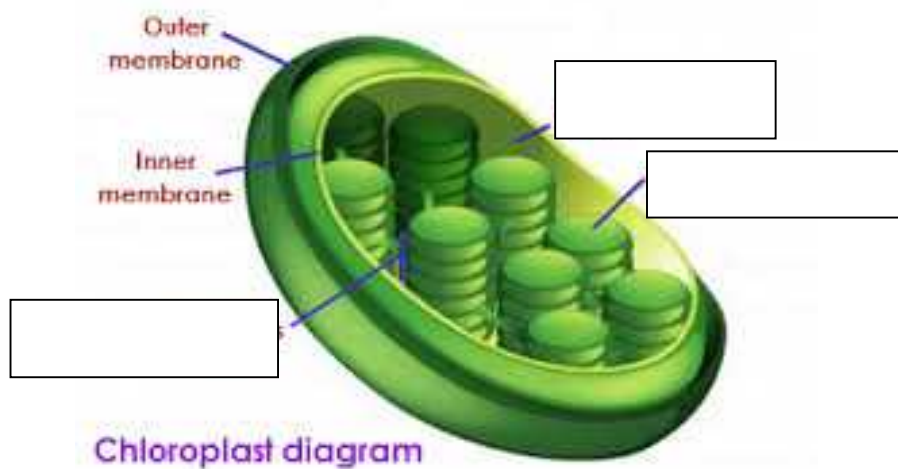
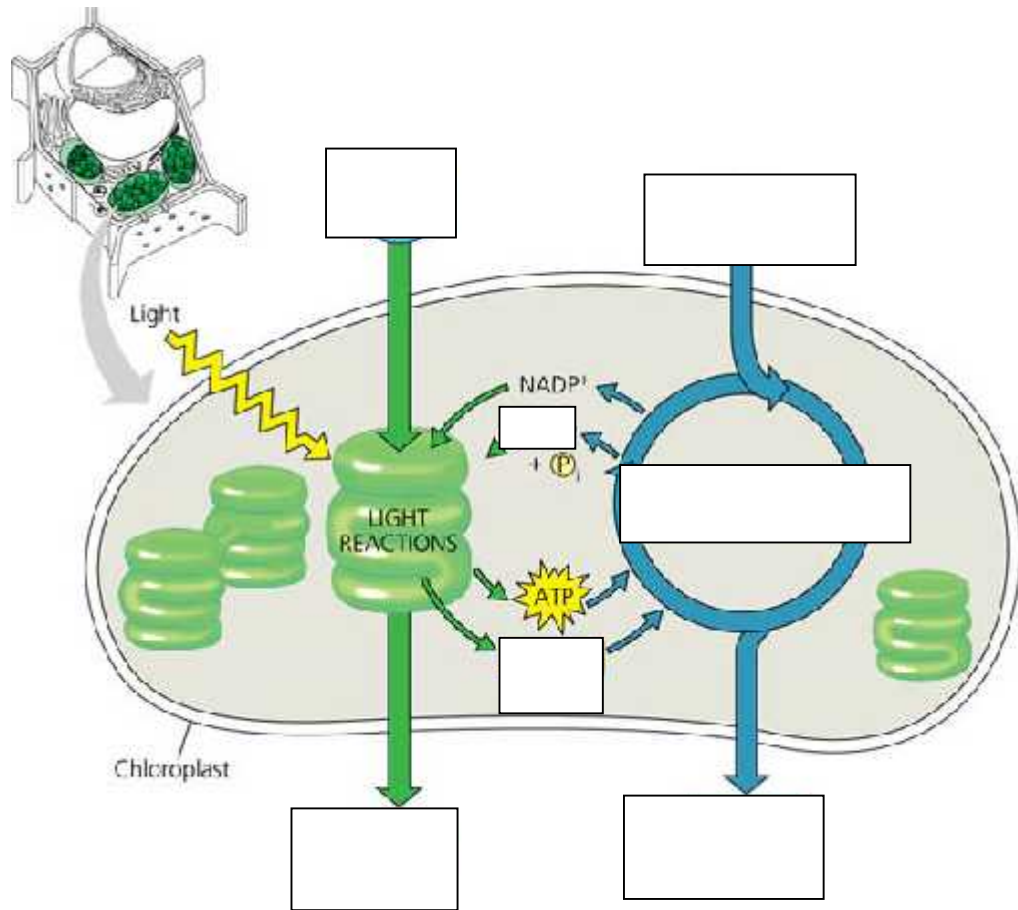
Q5) Write down the name of the nutrient next to the enzyme that breaks it down. 4

- Carbohydrase is an enzyme that breaks down
- Protease is an enzyme that breaks down
- Lipase is an enzyme that breaks down
- Amylase is an enzyme that breaks down



Q5) Label the diagram

10 marks



Data analysis

Directions: Using the directions included below to complete the graph and the related questions. Point values are listed as appropriate.

The rate of respiration of a freshwater sunfish was determined at different temperatures. The rate of respiration was determined by counting the number of times the gill covers of the fish opened and closed during 1-minute intervals at the various temperatures. The following data were collected.

Data Table

Temperature (°C)	Gill Cover Opening and Closing Per Minute
10	15
15	25
18	30
20	38
23	60
25	57
27	25

Directions (1–3): Using the information in the data table, construct a line graph on the grid provided on the next page, following the directions below.

1. Label the x -axis and y -axis and indicate the units. [2]
2. Mark an appropriate scale on each axis. [1]
3. Plot the data from the data table. Surround each point with a small circle and connect the points. [2]

ANSWER THESE QUESTIONS AFTER PLOTTING THE GRAPH 2 marks

_____ 4. According to the data, as the temperature increases, the rate of respiration of the sunfish

- (1) increases steadily
- (2) decreases steadily
- (3) increases, then decreases
- (4) decreases, then increases

_____ 5. Which title is appropriate for this graph?

- (1) The Effect of Temperature on Rate of Respiration in Sunfish
- (2) The Effect of Gill Movement on Rate of Respiration in Sunfish
- (3) The Relationship Between Temperature and Dissolved Oxygen
- (4) The Relationship Between Sunfish Population and Temperature Change in Freshwater Habitats

