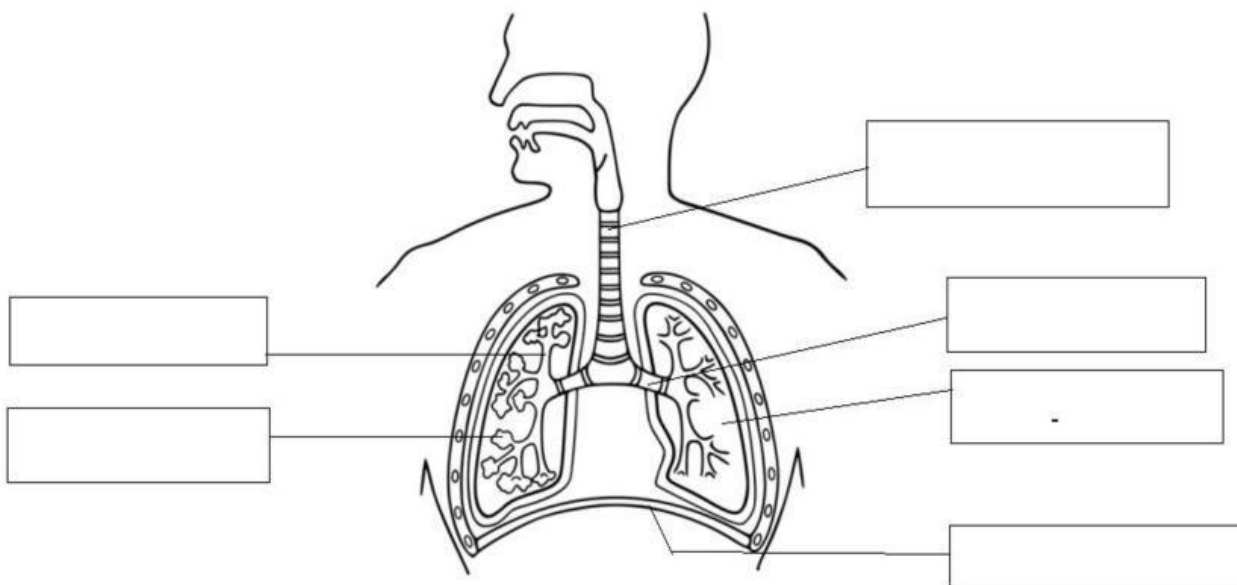


Name: \_\_\_\_\_

Date: \_\_\_\_\_

Answer ALL questions in the spaces below.

1. Label the following diagram of the respiratory system. [6 marks]



2. What is the WORD equation for aerobic respiration (oxidation of glucose)?

\_\_\_\_\_ [3 marks]

3. Complete the table below to compare anerobic respiration in plant and animal cells. [4 marks]

|                   | PLANT CELL | ANIMAL CELL |
|-------------------|------------|-------------|
| STARTING MATERIAL |            |             |
| PRODUCTS          |            |             |

4. What is the result of a build-up of lactic acid in animal cells? [2 marks]

\_\_\_\_\_ and \_\_\_\_\_

5. State TWO ways that lactic acid in animal cells can be reduced after exercising? [2 marks]

\_\_\_\_\_ and \_\_\_\_\_

6. Define the term oxygen debt.

[2 marks]

7. Differentiate briefly the difference between aerobic and anaerobic respiration. [5 marks]

| AEROBIC RESPIRATION                                              | ANAEROBIC RESPIRATION                                                                                                               |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Glucose combines with oxygen.                                    | A)                                                                                                                                  |
| B)                                                               | In animal cells, lactic acid is the waste.<br>In plants and yeast, carbon dioxide and ethanol are the waste.                        |
| Large amounts of energy produced (2880 kJ) per glucose molecule. | c.                                                                                                                                  |
| D)                                                               | Glucose not completely broken down (ethanol and lactic acid can still be broken down further to release energy if oxygen is added). |
| Occurs in the mitochondria of cells.                             | e.                                                                                                                                  |

8. Complete the table below to compare the percentages gases in inhaled and exhaled air.

[3 marks]

|                | Inhaled Air (%) | Exhaled Air (%) |
|----------------|-----------------|-----------------|
| Oxygen         |                 |                 |
| Carbon dioxide |                 |                 |
| Nitrogen       |                 |                 |

9. There are 5 features of a gaseous exchange surface.

a. What occurs at a gas exchange surface.

[1 mark]

b. State THREE features that all gas exchange surfaces have. [3 marks]

- I \_\_\_\_\_
- II \_\_\_\_\_
- III \_\_\_\_\_

c. Complete the table below about gas exchange surfaces of various organisms. [3 marks]

| Organism                | Gas Exchange Surface |
|-------------------------|----------------------|
| Human                   | Alveoli              |
| Fish                    |                      |
| Insects                 | Tracheoles           |
| Single-celled organisms |                      |
| Leaf                    |                      |

10. Label the diagram below. [5 marks]

