Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_Hour\_\_\_\_\_

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

RESPIRATION REVIEW

 Fill in the diagram below

1

2.

3.

5

2

1.

3

4

6

7

4.

11

10

9

8

12. Where does each step of respiration occur?

13. What are the 3 steps of respiration?

What is needed for each step?

What is produced at each step?

14. What is the difference between aerobic and anaerobic respiration?

15. Explain both types of fermentation. Give an example of when each type is used.

16. Write the complete chemical formula for CELLULAR RESPIRATION (Use the diagram above to help you!).

17. How are photosynthesis and cellular respiration related?

18. Muscle cells can carry out either aerobic respiration or lactic acid fermentation. Why do they usually rely on aerobic respiration rather than fermentation?

19. Explain how the by-products of cellular respiration used by yeast makes them useful in the process of making bread.

20. A plant’s root cells do not contain chloroplast, so they cannot carry out photosynthesis. Explain how root cells get the energy they need to live.

CONCENTRATION OF CO2

MEASUREMENT OF CO2 PRODUCTION IN PLANTS

Flask A

Flask B

Flask C

**Use the graph to answer question 18.**

21. In which flask is only cellular respiration

 taking place? Only photosynthesis? Both?

 How do you know?

TIME

22. Would a baseball player running to first base and a cross-country skier use the same or different pathways to release energy? Explain answer.

23. Draw the diagram for cellular respiration on a separate sheet of paper 5 times and label it.

24. Write the balanced chemical equation for cellular respiration on a separate sheet of paper 5 times.

**Identification**. On the lines provided, identify which phrase describes the following processes:

Cellular respiration glycolysis lactic acid fermentation alcoholic fermentation

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 25. important in baking bread

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 26. produces 2 ATP molecules and pyruvate

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 27. requires oxygen and glucose

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 28. builds up in muscles after a few minutes of activity

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 29. the reason why runners breathe heavily after a race

**Answer the following questions by writing the letter or letters of the correct choice(s) on the lines provided**.

Choices: a. glycolysis b. Kreb’s cycle c. electron transport d. lactic acid fermentation e. alcoholic fermentation

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 30. Which processes produce lactic acid?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 31. Which processes produce pyruvate?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 32. Which processes occur in the mitochondria?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 33. Which processes produce carbon dioxide?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 34. Which processes require glucose?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 35. Which processes produce ATP?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 36. Which process produces the most ATP?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 37. Which process produces ethanol?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 38. Which processes require pyruvate?

Compare fermentation and cellular respiration by filling in the missing information in the compare/contrast table below. I

|  |  |  |
| --- | --- | --- |
|  | **Fermentation** | **Cellular Respiration** |
| **Function** | 39.  | 40.  |
| **Reactants** | 41. | Oxygen, Glucose |
| **Products** | NAD+, ethanol, CO2, lactic acid | 42. |
| **Advantages** | 43. | 44. |
| **Disadvantages** | Produce ATP for only 20 or 30 seconds, lactic acid causes painful side effects | 45. |