

CELL PROCESSES QUESTIONS

1. Describe the structure of a cell membrane.
2. What is meant by a differentially permeable membrane?
3. How do different substances travel across membranes? Give examples.
4. Are the membranes surrounding the cell the same structure as the membranes surrounding organelles? Explain.
5. Explain why an intact cell membrane is essential for a cell's survival.
6. Differentiate clearly between diffusion and osmosis.
7. What will occur if one plant cell is soaked in distilled water, and another plant cell is left in a very salty solution?
8. What is the difference between active and passive transport?
9. Distinguish between endocytosis and exocytosis, and between phagocytosis and pinocytosis.
10. Explain what a catalyst is.
11. Define: (a) enzyme (b) active site (c) substrate (d) activation energy.
12. What is meant by the Lock and Key Model of enzymes?
13. Describe 3 factors that influence the action of enzymes.
14. What is the connection between lizards being more active on warm days and the conditions needed for enzyme activity?
15. Some of the enzymes secreted by cells are in an inactive form when secreted. To become active, part of the molecule must be removed. For example, the enzyme pepsin important in protein digestion in the gut, is secreted as a large molecule called pepsinogen. About one-fifth has to be split off before the enzyme becomes active. Suggest why the larger molecule is inactive.
16. State 5 functions of a living organism that require energy.
17. What is the difference between exergonic and endergonic reactions?
18. (a) In what form is the energy in a cell when the cell is about to use it?
(b) What chemical reaction takes place to make this energy available?
19. Why do plants growing in poor soil require the addition of a phosphate fertiliser?
20. What are 2 major differences between aerobic and anaerobic respiration?

21. Explain why the rate of carbon dioxide production by yeast cells can be used as a measure of their cellular activity.
22. Germinating pea seeds can live for a short time without oxygen. Suggest how this might be possible.
23. Some people incorrectly say that plants photosynthesise in the day and respire only at night. Explain why this is wrong.
24. What factors affect the rate of photosynthesis? Explain.
25. Briefly explain what happens in the Light and Dark Reactions of photosynthesis.
26. Why do prokaryotic cells also respire and photosynthesise, despite their lack of mitochondria and chloroplasts?