National 5 Biology revision questions: Cell Biology.

1. State the functions of the following parts of a cell: cell wall, mitochondrion, chloroplast, cell membrane, cytoplasm, vacuole, ribosome and plasmid.

2. What is the cell wall in plant cells made of?

3. I the cell wall of a fungal or bacterial cell made of the same substance?

4. What is the cell membrane made of?

5. What property of the cell membrane allows it to only let in certain substances?

6. Give two features of passive transport.

7. Give two examples of passive transport.

8. What is the definition of diffusion?

9. What is the definition of osmosis?

10. Describe the conditions that would result in an animal cell i) bursting ii) shrinking.

11. Describe the conditions that would result in a plant cell being i) turgid ii) plasmolysed.

12. Give two features of active transport.

13. Describe the structure of DNA.

14. What are the four bases and how do they pair-up?

15. Why is the DNA base sequence important?

16. What is mRNA and how does it help in the process of making a protein?

17. Where are proteins made in the cell?

18. Give five functions of proteins.

19. What are enzymes and where are they found?

20. What do enzymes do to chemical reactions?

21. Which part of an enzyme attaches to its substrate?

22. Give examples of enzymes involved in degradation and synthesis reactions.

23. Why can enzymes only act on one substrate?

24. When are enzymes most active?

25. What are enzymes affected by?

26. What happens if an enzyme is denatured?

27. What does genetic engineering do?

28. Draw a flow diagram showing the main stages of genetic engineering.

29. How is the chemical energy stored in glucose released?

30. What do cells do with the energy that is released from the breakdown of glucose?

31. Describe the pathway of aerobic respiration.

32. What happens to the pathway in the absence of oxygen?

33. Where does respiration begin?

34. Where is aerobic respiration completed?

35. Where does fermentation take place?