

# **BIOLOGY 1: Molecules to Organs**

**Time Allowed – 1.5 hours**

**You must answer 3 questions from a choice of 18**

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1. Write a biological essay on water.
2. The human body is ultimately formed from atmospheric CO<sub>2</sub>. Briefly outline the relevant processes in humans and other organisms.
3. Compare gas exchange mechanisms in some different animals.
4. Explain the steps by which the genetic code on a chromosome leads to formation of a cellular protein.
5. What is meant by ‘Mendelian genetics’?
6. Give some examples of enzymes and explain how their reactions can be studied.
7. Explain what will happen to your next meal once it is inside your digestive system.
8. In what ways can different types of animal be adapted to their diets?
9. Discuss the biochemistry and dietary importance of lipids.
10. Describe how blood circulates around the human body.
11. Explain with examples the biological principle of ‘homeostasis’.
12. How are organic and inorganic materials transported around the body of a plant?
13. What are kidneys and how do they function?
14. Describe what happens in a female’s monthly ‘period’.
15. Discuss the various structures and functions of flowers and fruits.
16. How does the immune system function to protect us? Can it sometimes be a handicap?
17. What are bacteria?
18. What is involved in the new subject of ‘bioinformatics’?