



# **Biology**

## **SAMPLE**

### **Examination Paper**

**Answer ALL questions.**

**Clearly cross out surplus answers.**

**Time: 2 hours**

**The maximum mark for this paper is 100.**

**Any reference material brought into the examination room must be handed to the invigilator before the start of the examination.**

**Answer all FIVE (5) questions**

**Question 1**

- a) With the aid of diagrams, describe each of the FOUR (4) main stages in the process of mitosis. **12**
- b) Describe FOUR (4) roles of Oestrogen in the female body. **8**

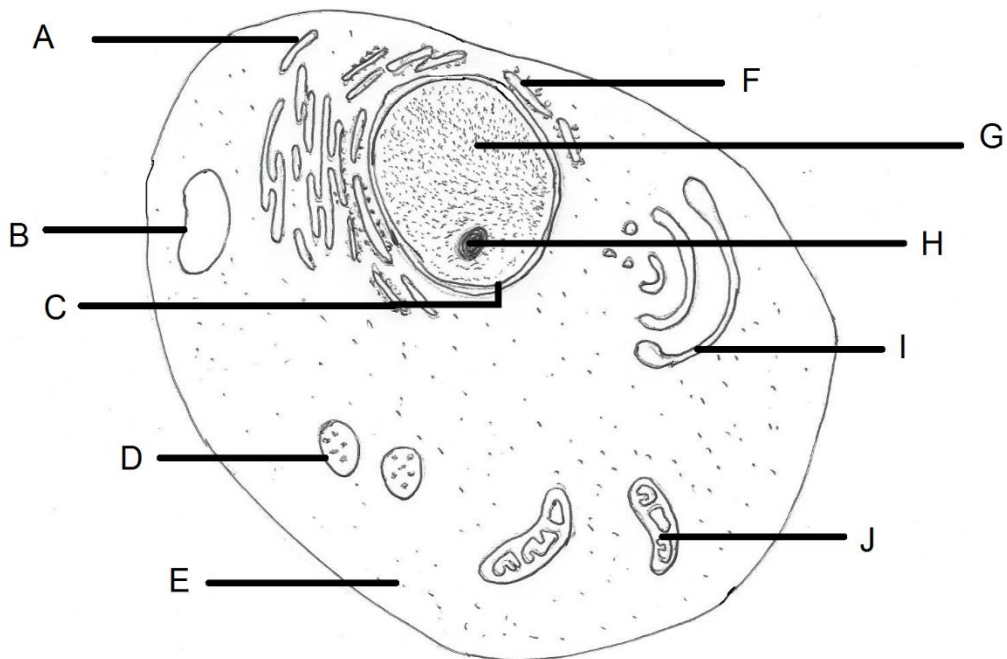
**Total 20 Marks**

Question 2

a) The drawing below shows a typical human cell. Identify the following in the drawing and match these to the correct label:

10

- cytoplasm
- Golgi body
- lysosome
- mitochondria
- nuclear membrane
- nucleolus
- nucleus
- rough endoplasmic reticulum (rough ER)
- smooth endoplasmic reticulum (smooth ER)
- vacuole



- |   | <b>Marks</b> |
|---|--------------|
| <b>b)</b> Describe the role of each of the cellular components you have drawn in Question 1a. | <b>10</b>    |

**Total 20 Marks**

### **Question 3**

- |   |           |
|---|-----------|
| <b>a)</b> Identify and describe the FIVE (5) main functions of the skeleton.  | <b>10</b> |
| <b>b)</b> Explain, with reference to FIVE (5) adaptations, how the lungs maximise gas exchange between air and blood. | <b>10</b> |

**Total 20 Marks**

### **Question 4**

- |   |          |
|---|----------|
| <b>a)</b> State FOUR (4) types of macronutrients required by the human body, and for each give examples of dietary sources. | <b>8</b> |
| <b>b)</b> For the macronutrients listed in Question 1a, explain how they are used by the body.                              | <b>8</b> |
| <b>c)</b> Explain the role of the stomach in digestion  | <b>4</b> |

**Total 20 Marks**

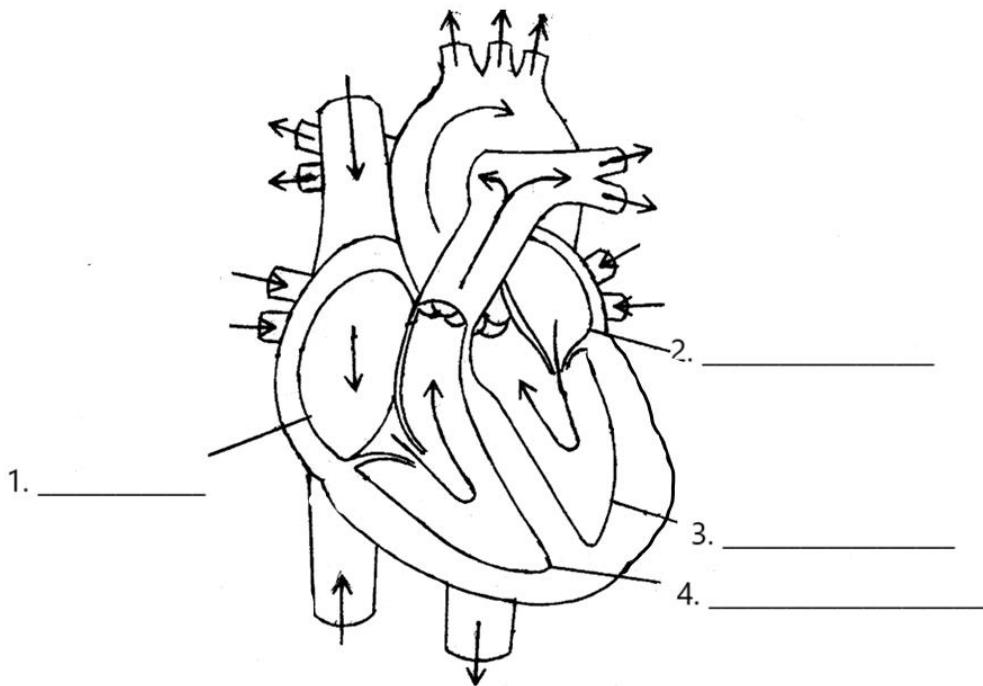
**Question 5**

a) Define the terms *pathogen*, *antibodies* and *antigens*. 6

b) Describe the body's primary response to invasion by a pathogen, with reference to the roles of the following cell types: 10

- T lymphocyte
- T helper cells
- T killer cells
- T regulator cells
- T memory cells

c) Identify the FOUR (4) main chambers of the heart, labelled in the diagram below. 4



**Total 20 Marks**

**End of paper**