



**Surname** \_\_\_\_\_

**Other Names** \_\_\_\_\_

**Centre Number** \_\_\_\_\_

**Candidate Number** \_\_\_\_\_

**Candidate Signature** \_\_\_\_\_

## **Level 3 Certificate/Extended Certificate**

### **APPLIED SCIENCE**

**Unit 1 Key Concepts in Science**

**Section A – Biology**

**ASC1/B**

**Tuesday 11 June 2019      Afternoon**

**Time allowed: 1 hour 30 minutes. You are advised to spend approximately 30 minutes on this section.**

**At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.**

**[Turn over]**



J U N 1 9 A S C 1 B 0 1

**For this paper you must have:**

- a calculator
- Formulae Sheet.

## **INSTRUCTIONS**

- Use black ink or black ball-point pen.
- Answer ALL questions in each section.
- You must answer the questions in the spaces provided. Do not write on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.



## **INFORMATION**

- You will be provided with a copy of the Formulae Sheet.
- There are three sections in this paper:  
**SECTION A – Biology**  
**SECTION B – Chemistry**  
**SECTION C – Physics.**
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60 and the maximum mark for this section is 20.

## **ADVICE**

**Read each question carefully.**

**DO NOT TURN OVER UNTIL TOLD TO DO SO**



**SECTION A – BIOLOGY**

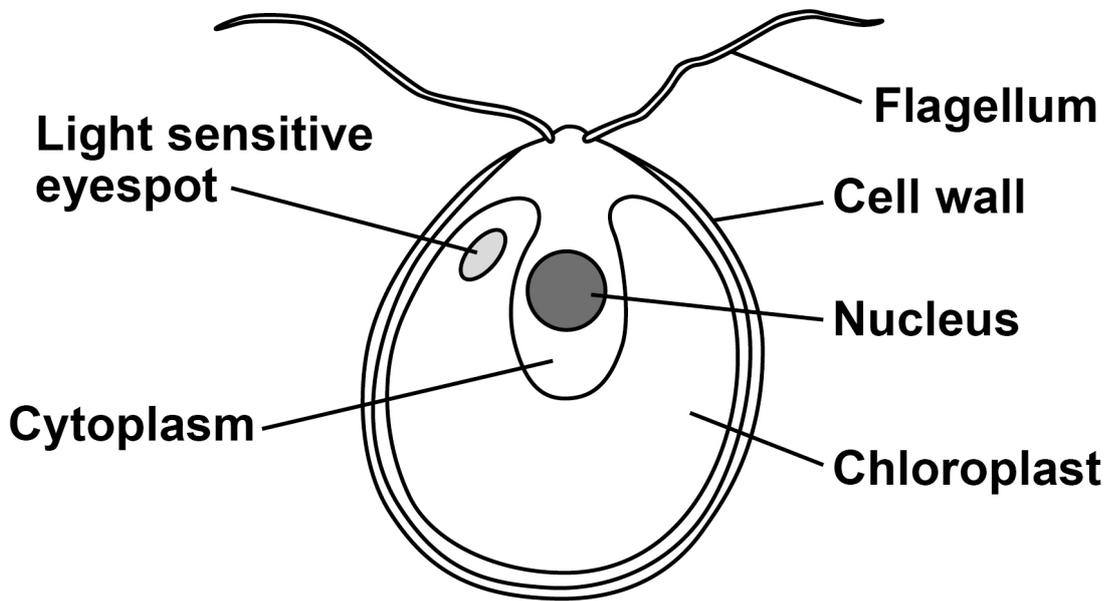
**Answer ALL questions in this section.**

**0 1**

**Biologists study cell structure.**

**FIGURE 1 shows an algal cell.**

**FIGURE 1**



**0 1 . 1**

**Give TWO features shown in FIGURE 1 that you would find in plant cells but NOT in animal cells. [2 marks]**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_



**0 1 . 2** What is the function of the flagellum?  
[1 mark]

---

---

---

**0 1 . 3** The algal cell in FIGURE 1 can photosynthesise.

Water molecules are split during the light-dependent stage of photosynthesis.

What are the water molecules split into?

Tick (✓) ONE box. [1 mark]

Carbohydrate and carbon dioxide

Carbon and oxygen

Carbon dioxide and oxygen

Hydrogen and oxygen

[Turn over]



**BLANK PAGE**



**01.4** The cell in FIGURE 1, on page 4, is eukaryotic.

**Give TWO ways that prokaryotic cells are different from eukaryotic cells. [2 marks]**

**1**

---

---

---

**2**

---

---

---

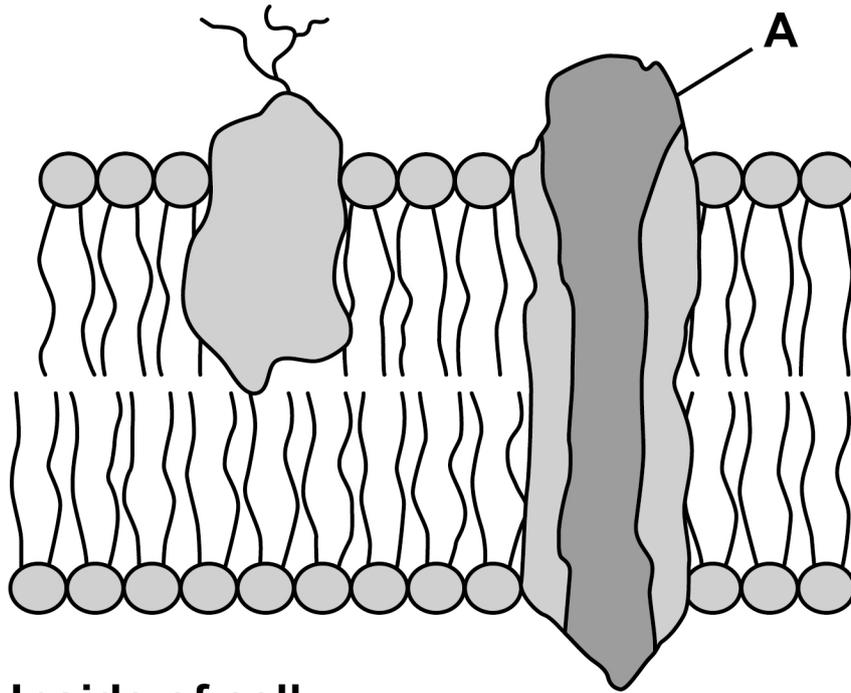
**[Turn over]**



**FIGURE 2** shows a section of a cell membrane.

**FIGURE 2**

**Outside of cell**



**Inside of cell**

**0 1 . 5** What are the functions of A in FIGURE 2?

Tick (✓) TWO boxes. [2 marks]

To allow active transport.

To allow facilitated diffusion.

To carry out respiration.

To control the movement of oxygen.

To hold the bilayers together.

[Turn over]

8



**0 2**

Osmoregulation controls the water content of blood. Controlling water in the blood helps to keep the concentration of the blood within narrow limits.

Antidiuretic hormone (ADH) is a hormone used in osmoregulation.

**0 2****. 1**

Which part of the brain monitors the concentration of the blood? [1 mark]

---

---

**0 2****. 2**

Which organ releases ADH?

Tick (✓) ONE box. [1 mark]

Adrenal gland

Liver

Pancreas

Pituitary gland



**02.3** Some brain tumours can cause very high levels of ADH secretion.

**Suggest ONE symptom of very high levels of ADH secretion. [1 mark]**

---

---

---

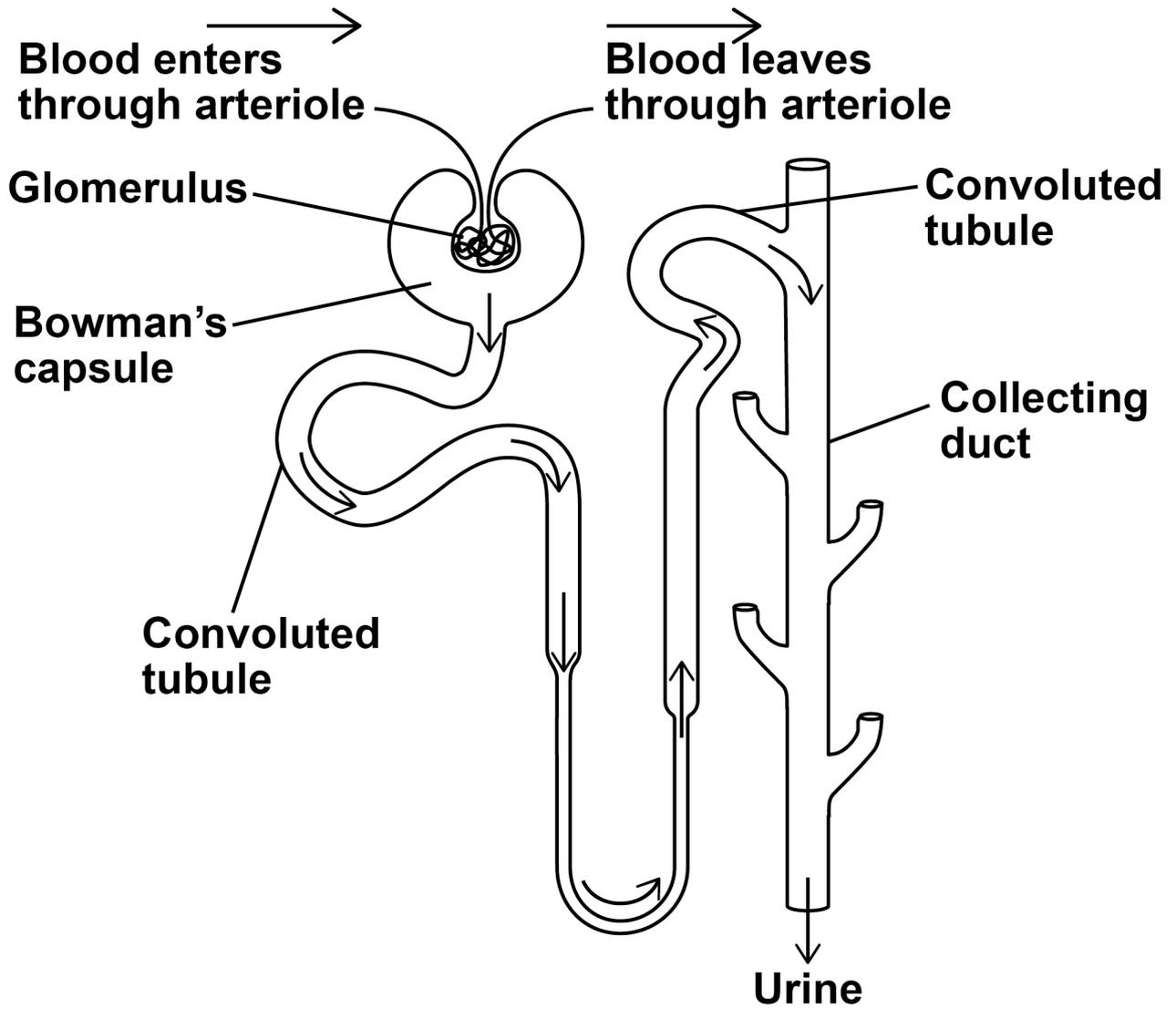
**[Turn over]**



ADH affects the functions of the kidney.

FIGURE 3 shows a kidney nephron.

FIGURE 3



**0 2 . 4** Describe what happens in the Bowman's capsule. [2 marks]

---

---

---

---

---

---

---

---

---

---

---

**[Turn over]**

**BLANK PAGE**





**02.6** A woman goes to the doctor because she is thirsty all the time.

**The doctor tests the woman for diabetes using a fasting glucose test.**

**Describe how to do a fasting glucose test.  
[2 marks]**

---

---

---

---

---

---

---

**02.7** Give TWO other tests the doctor could use to test for diabetes. [2 marks]

1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<b>12</b>

**END OF QUESTIONS**











**BLANK PAGE**

For Examiner's Use	
Question	Mark
1	
2	
<b>TOTAL</b>	

**Copyright information**

For confidentiality purposes, from the November 2015 examination series, acknowledgements of third-party copyright material are published in a separate booklet rather than including them on the examination paper or support materials. This booklet is published after each examination series and is available for free download from [www.aqa.org.uk](http://www.aqa.org.uk) after the live examination series.

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford, GU2 7XJ.

Copyright © 2019 AQA and its licensors. All rights reserved.

**IB/M/IK/Jun19/ASC1/B/E1**

2 2



1 9 6 A A S C 1 / B