

Section Two: Short answer

50% (100 Marks)

This section has **eight (8)** questions. Answer **all** questions. Write your answers in the spaces provided.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

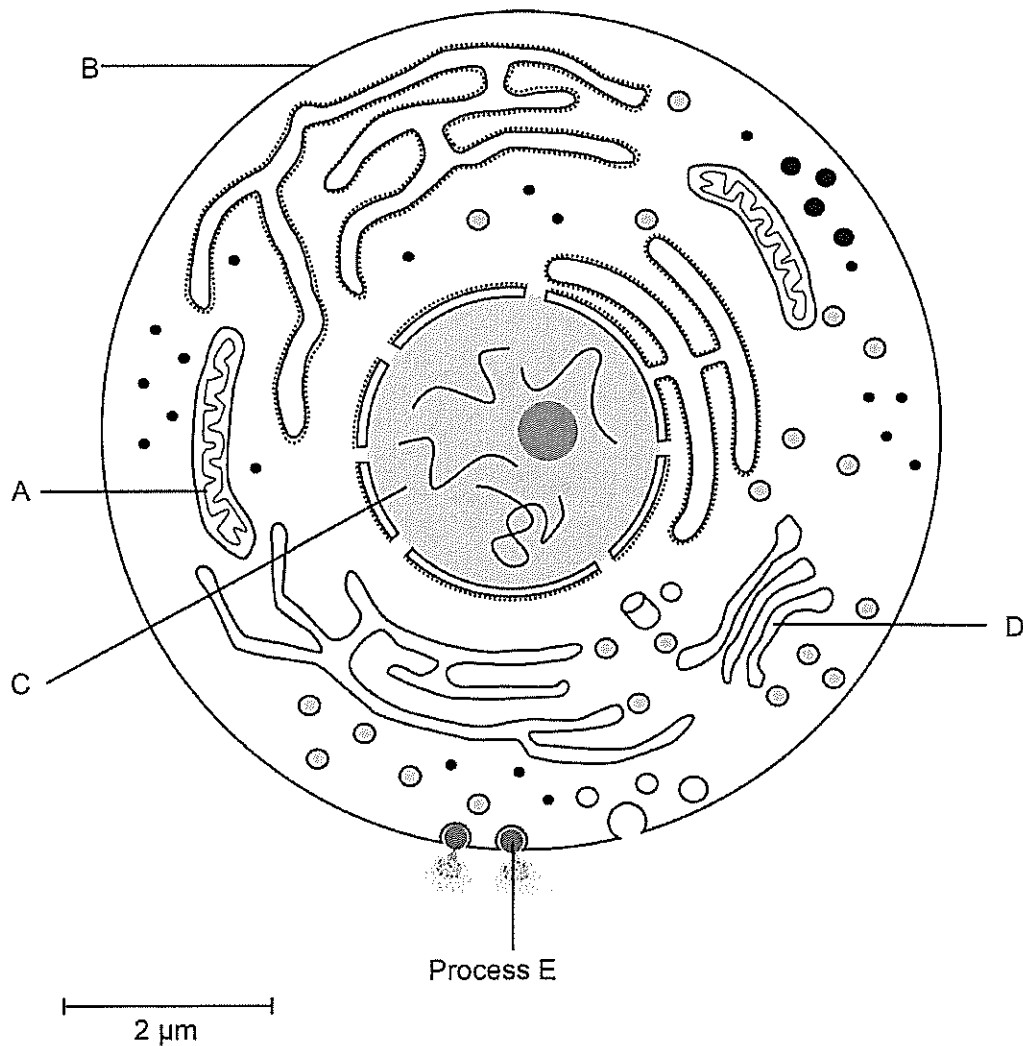
- Planning: If you use the spare page for planning, indicate this clearly at the top of the page.
- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

Suggested working time: 90 minutes.

Question 31

(15 marks)

Parts (a) and (b) of this question refer to the diagram below, which shows a generalised cell.



See next page

- (a) Complete the following table. (8 marks)

Organelle	Name	Function
A		
B		
C		
D		

- (b) Process E as labelled on the diagram shows the movement of a substance out of the cell via a vesicle. What name is given to this process? (1 mark)

- (c) Name and describe **two** processes other than the process identified in Part (b) that transport materials in or out of the cell. (4 marks)

Process	Name	Description
One		
Two		

- (d) Why are cells so small in size? (2 marks)

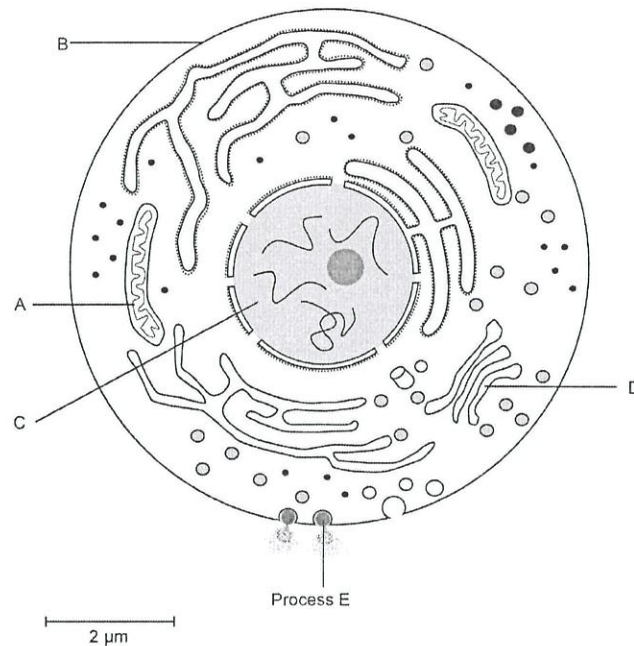
Section Two: Short answer

50% (100 Marks)

Question 31

(15 marks)

Parts (a) and (b) of this question refer to the diagram below, which shows a generalised cell.



(a) Complete the following table.

(8 marks)

		Description	Marks
Organelle	Name	Function	
A	Mitochondria	<ul style="list-style-type: none"> • produces energy • site of respiration • contains mDNA 	1–2
B	Cell membrane	<ul style="list-style-type: none"> • controls entry • exit of materials • receptors • cell recognition • separates 	1–2
C	Nucleus	<ul style="list-style-type: none"> • controls cellular functions • contains DNA 	1–2
D	Golgi body	<ul style="list-style-type: none"> • package materials for export • secretion 	1–2
			Total 8

(b) Process E as labelled on the diagram shows the movement of a substance out of the cell via a vesicle. What name is given to this process?

(1 mark)

Description	Marks
Exocytosis	1
	Total 1

- (c) Name and describe **two** processes other than the process identified in Part (b) that transport materials in or out of the cell. (4 marks)

Description	Marks
Any 2 of the following:	
Facilitated diffusion Movement of a substance from high to low concentration through a carrier protein molecule.	1–2
Endocytosis/ Phagocytosis/ Pinocytosis Cell engulfing a substance/ cell membrane forms around a substance and it moves into the cell	1–2
Osmosis Passive movement of water molecules in/ out of the cell.	1–2
Diffusion Movement of substances from an area of high concentration to low concentration	1–2
Active Transport Movement of substances against a concentration gradient / requiring energy.	1–2
	Total 4

- (d) Why are cells so small in size? (2 marks)

Description	Marks
Have a large surface area to volume ratio	1
Allows for efficient exchange of substances (across the membrane)/ helps maximise exchange of materials	1
	Total 2

Question 32 (12 marks)

- (a) Describe **three** healthy diet choices a pregnant woman should make to ensure the best care is given to her unborn child. (3 marks)

Description	Marks
Any 3 of the following:	
<ul style="list-style-type: none"> • Increase daily kJ intake (by 850kJ) • Avoid drug/ alcohol use/ marijuana / LSD / heroin • Increase protein intake/ eat enough red meat/ legumes • Increase folic acid consumption/ eat plenty of green leafy vegetables • Increase vitamin A consumption/ eat plenty of green and yellow vegetables • Increase calcium consumption/ eat enough dairy products • Avoid contact to listeriosis/ don't eat soft cheeses/ pate/ smoked meats/ raw meat/ pre-package salads 	1–3
	Total 3

- (b) Immunity is resistance to infection from invading micro-organisms.

Complete the table below, naming and explaining **two** ways in which a parent can increase the immunity of their infant (birth to two years old). (4 marks)