

Modified Enlarged 24 pt

**OXFORD CAMBRIDGE AND RSA
EXAMINATIONS**

Monday 18 January 2021 – Morning

**Level 3 Cambridge Technical in Health
and Social Care**

05831/05832/05833/05871

**Unit 4: Anatomy and physiology for health
and social care**

**Time allowed: 2 hours plus your additional
time allowance**

No extra materials are needed.

Please write clearly in black ink.

**Centre
number**

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**Candidate
number**

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First name(s) _____

Last name _____

**Date of
birth**

D	D	M	M	Y	Y	Y	Y
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READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS

Use black ink.

Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.

Answer ALL the questions.

INFORMATION

The total mark for this paper is 100.

The marks for each question are shown in brackets [].

Quality of extended response will be assessed in questions marked with an asterisk (*).

ADVICE

Read each question carefully before you start your answer.

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Answer ALL the questions.

- 1 Components of the endocrine system have a role in control and communication in the body.**

(a) Answer the following questions about the endocrine system.

glucagon

insulin

adrenal

thyroid

pituitary

adrenalin

ovaries

testes

Use words from the list.

You can use each word once, more than once, or not at all.

(i) Which GLAND is located just above the kidney?

[1]

(ii) Which HORMONE lowers the concentration of glucose in the blood?

[1]

(iii) Which GLAND has a role in regulating other endocrine glands?

[1]

(iv) Which GLAND is located at the base of the brain?

[1]

(b) The pancreas has a function within both the endocrine and digestive systems of the body.

(i) Identify TWO endocrine functions of the pancreas.

1 _____

2 _____

[2]

(ii) Identify TWO digestive functions of the pancreas.

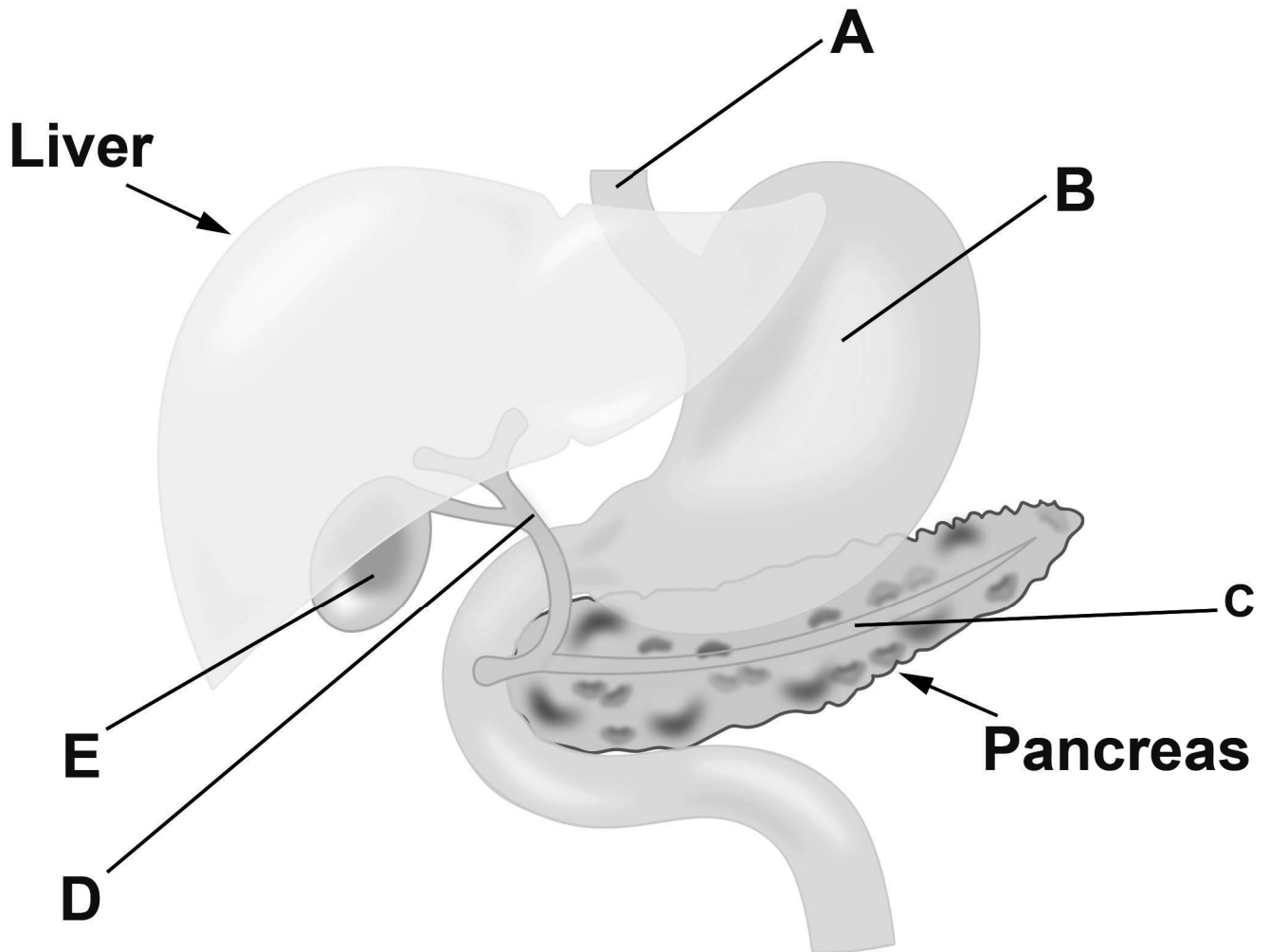
1 _____

2 _____

[2]

BLANK PAGE

(c) The diagram shows part of the digestive system including the pancreas and the liver.



Complete the table using letters from the diagram. [5]

Structure	Letter
Pancreatic duct	
Stomach	
Bile duct	
Gall bladder	
Oesophagus	

(d) Complete the sentences about digestion in the stomach.

Use words from the list.

You can use each word once, more than once, or not at all. [6]

hormone

churn

digest

acid

alkali

cell

enzyme

protein

mechanical

chemical

When food enters the stomach, it is mixed with digestive juices. The muscular walls of the stomach _____ the food with the juices, which is called _____ digestion.

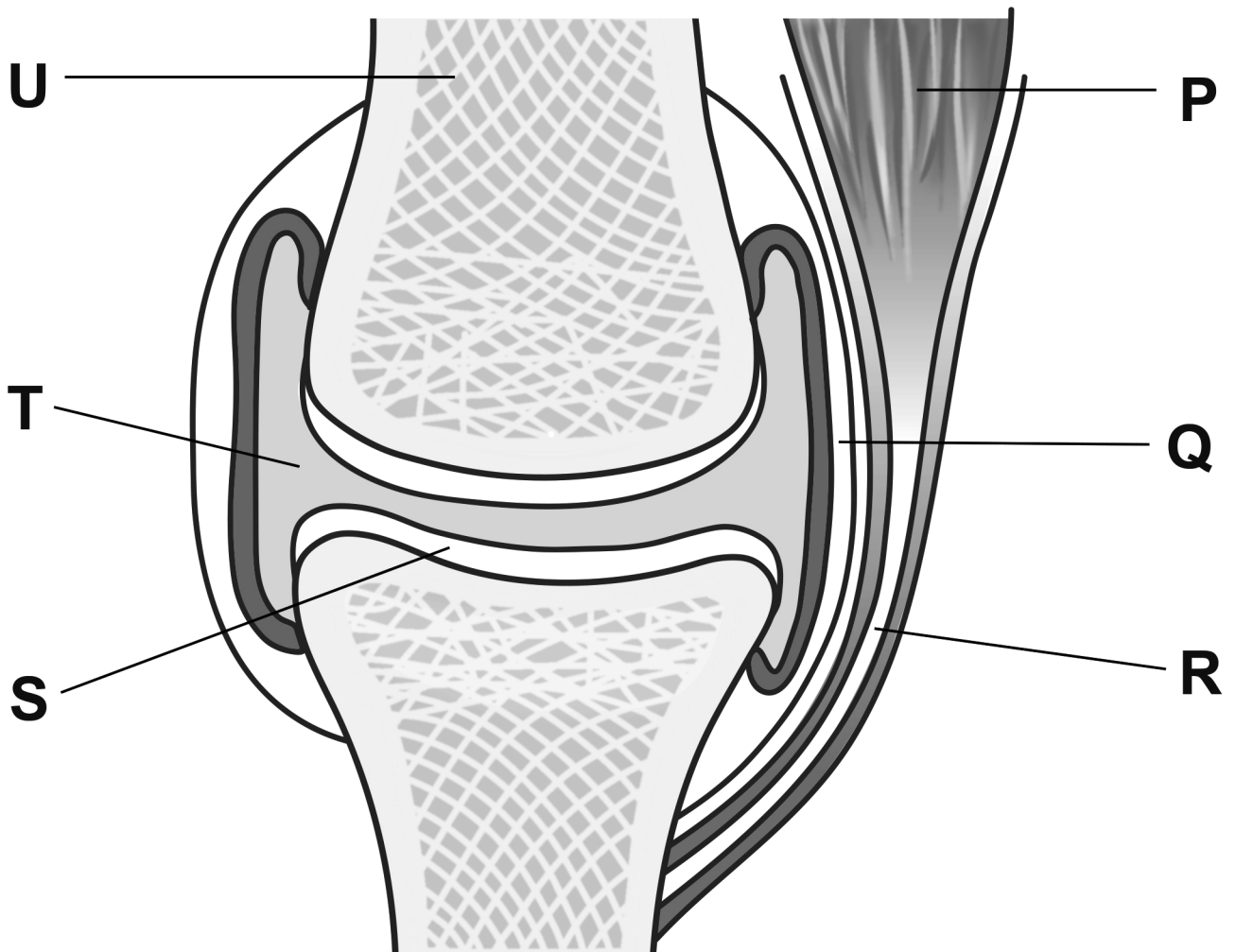
The stomach produces _____ which helps to destroy bacteria. It also produces the _____ that breaks down large _____ molecules into smaller ones. This is called _____ digestion.

(e)*Nina is 45 years old and has developed cirrhosis of her liver, caused by a build-up of fat in her liver cells.

Discuss the possible impacts of cirrhosis on Nina's lifestyle.

You should include at least TWO different types of impact in your answer. [8]

2 The diagram shows a synovial joint.



(a) Complete the table using letters from the diagram.

The last one has been done for you. [4]

Structure	Letter
Synovial capsule	
Cartilage	
Synovial fluid	
Tendon	
Bone	U

(b) The joint in the diagram on page 14 is a hinge joint.

Name TWO other types of joint.

1 _____

2 _____

[2]

(c) (i) Identify ONE malfunction of the musculoskeletal system and ONE symptom associated with the malfunction you have identified.

Malfunction: _____ [1]

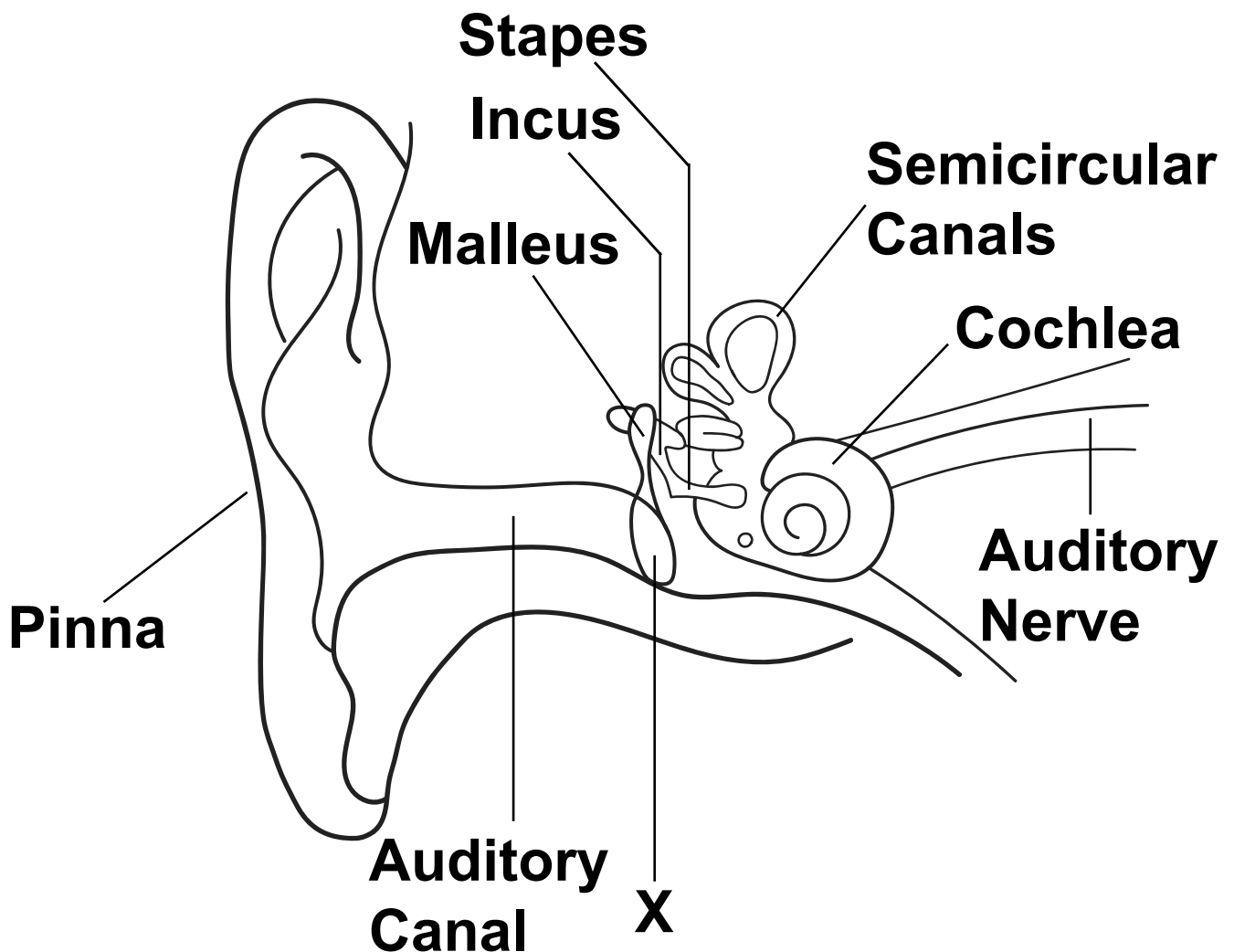
Symptom: _____ [1]

(ii)* Explain the impact of the malfunction identified in (c)(i) on the daily life of an individual with this condition. [6]

(d)*Bone marrow helps to produce cells, such as erythrocytes. Erythrocytes are components of blood.

Describe, in detail, the functions of at least TWO other components of blood. [6]

- 3 (a) The diagram shows the structure of the ear.



Use the diagram to answer the following questions.

- (i) Identify **TWO** structures that are found in the **INNER** ear.

1

2

[2]

(ii) Which structure contains ampullae?

[1]

(iii) Which structure is lined with tiny hairs and helps us to maintain balance?

[1]

(iv) Name the structure labelled X.

[1]

(b) The Eustachian tube is also found in the ear.

Which statement about the Eustachian tube is correct? [1]

Tick (✓) ONE box.

Statements	Tick (✓) one only
It converts sound waves into nerve impulses.	
It amplifies sound waves.	
It enables vibrations to be passed through the inner ear.	
It ensures equal pressure between the outside of the ear and the middle ear.	

(c)* Deafness is a malfunction of the ear.

The possible causes for deafness include:

ageing

blockages in the auditory canal

damage caused by loud noises or infections.

Explain the effects of deafness on an individual and the possible treatments available to them. [6]

(d) Nerve impulses from the ear pass into the brain to be processed into sound.

Which part of the brain processes sensory information from the ear? [1]

Tick (✓) ONE box.

Parts of the brain	Tick (✓) one only
Hypothalamus	
Cerebral cortex	
Medulla (oblongata)	
Corpus callosum	

(e)* Kai has had a stroke which has damaged part of his brain.

Explain the possible biological causes and lifestyle factors that could have resulted in Kai suffering a stroke. [8]

4 Adenosine triphosphate (ATP) is produced by cellular respiration.

(a) Complete the table below by deciding whether each statement about cellular respiration is True (T) or False (F). [4]

Statements	True (T) or False (F)
Aerobic respiration produces more ATP than anaerobic respiration.	
Aerobic respiration takes place in mitochondria.	
Anaerobic respiration needs glucose and oxygen.	
Lactic acid is produced during aerobic respiration.	

(b) Oxygen must pass through the alveoli walls to get into the blood.

Which process allows oxygen to pass through the alveoli walls? [1]

Tick (✓) ONE box.

Processes	Tick (✓) one only
Assimilation	
Absorption	
Diffusion	
Inspiration	

(c) Asthma and emphysema are both respiratory malfunctions.

(i) Identify ONE possible cause for each of these malfunctions.

Asthma: _____

Emphysema: _____

(ii)* Evaluate the lifestyle changes and care needed to help an individual manage emphysema.

[8]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

5 The kidney is a component of the regulatory system.

(a) Complete the table using structures from the list. [4]

calyx

ureter

cortex

medulla

urethra

Statements	Structure
The outer layer of the kidney.	
A tube that carries urine from the kidney to the bladder.	
A chamber that collects urine.	
A tube that passes urine out of the body.	

(b) The kidney contains thousands of nephrons.

Identify and describe TWO functions of these nephrons.

1 _____

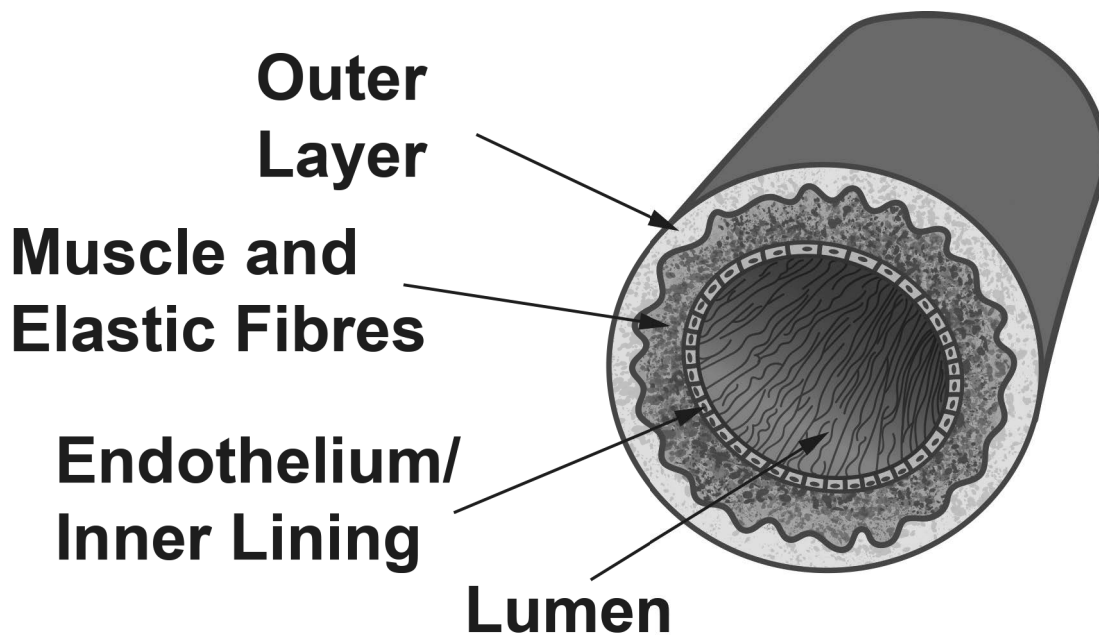
2 _____

[4]

(c) Name the blood vessel that carries blood from the body into the kidneys.

_____ **[1]**

(d) The diagram shows the structure of an artery.



**(i)* Compare the structure of the artery with the structure of a vein and a capillary, considering their functions in your answer.
[6]**

**(ii) The build-up of fatty deposits in the walls of arteries can lead to coronary heart disease (CHD).
Identify TWO symptoms of CHD.**

1 _____

2 _____

[2]

END OF QUESTION PAPER

ADDITIONAL ANSWER SPACE

If additional answer space is required, you should use the following lined pages. The question numbers must be clearly shown.

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