

Grade Nine Guides

GCSE BIOLOGY

Paper 1

ORGANISATION

EXAM QUESTIONS

- **Exam questions per topic**
- **Grade 8/9 tips**

Aiming at grade 8/9



Topic	Question	[marks]
B2: Principles of organisation	Describe the relationship between cells, genes, DNA and chromosomes	
The digestive system (Question about stem cells)	<ul style="list-style-type: none"> ➤ Explain the enzymes needed in digestion 	[4]
	<ul style="list-style-type: none"> ➤ Explain how the release of bile into the small intestine increases the rate of fat breakdown 	[3]
	<ul style="list-style-type: none"> ➤ Explain why protease works more effectively in the stomach 	[3]
	<ul style="list-style-type: none"> ★ In a person with CF, cells lining the lungs and the digestive system create too much mucus. Explain why children with CF grow more slowly than children without CF 	[6]
	<ul style="list-style-type: none"> ★ Describe how scientists may use stem cells to create healthy lungs that are not rejected by the CF patient 	[4]
	<ul style="list-style-type: none"> ★ give one reason why some people disagree with the use of stem cells to create new organs for transplants 	[1]
Food tests required practical	<ul style="list-style-type: none"> ➤ food tests six marker 	[6]

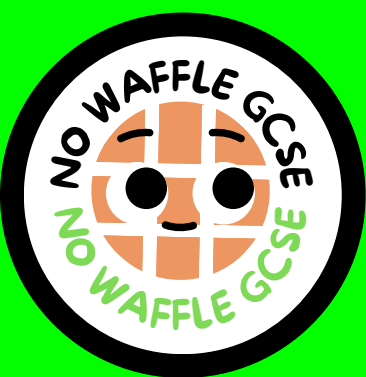
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Rate of enzymes	<ul style="list-style-type: none"> > The effect of pH on enzymes required practical 6 marker [6] > Describe the effect protease would have on baby food [2] > Describe how ribosomes and mitochondria help to make enzymes [3] > Explain the lock and key theory of enzyme action [3] ★ Students investigated the presence of starch and glucose in leaves of X plant. Describe how the students would find out if the liquid from the leaf contained glucose [3] ★ How would the student find out if the leaf contains starch [2] ★ Explain why the leaf in the light for four days contained both glucose and starch [2] ★ Explain why the leaf left in a cupboard with no light for two days did contain glucose but did not contain starch [3] ★ Suggest one way that could extend the investigation [1] > Explain why amylase does not work at 5 degrees Celsius and 80 degrees Celsius [5] > What is an enzyme [1] > Explain how pancreatic cancer may cause a person to lose weight [4]
the heart, blood and vessels	<ul style="list-style-type: none"> > Describe the levels of organisation in the human circulatory system [6]

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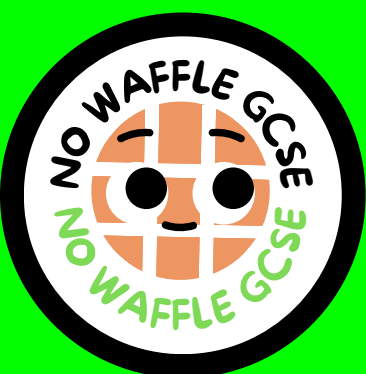
	<ul style="list-style-type: none"> ➤ Explain why the left side of the heart is thicker [3] ➤ Compare the structure of an artery with the structure of a vein [3] ➤ Define the term double circulatory system [1] ➤ Explain how the human circulatory system is adapted to supply oxygen to the tissues, and remove waste products from tissues [6] ➤ Explain why having only one ventricle makes the circulatory system less efficient than having two ventricles [2]
ventilation and gas exchange	<ul style="list-style-type: none"> ➤ Explain how human lungs are adapted for efficient exchanges of gas via diffusion [6] ➤
coronary heart disease [non communicable disease]	<ul style="list-style-type: none"> ➤ Explain why a stent prevents a heart attack [3] ➤ List the risk factors of coronary heart disease [2] ➤ Evaluate the use of cholesterol blockers Vs Statins for a person with high cholesterol [6]



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	<p>> What condition may be treated using an artificial pacemaker [1]</p> <p>> Compare mechanical valves to biological valves [6]</p> <p>> Explain why person with a leaking heart valve has difficulty exercising [4]</p>
The effect of lifestyle on non-communicable disease	<p>> explain the risks of a pregnant woman smoking and drinking [6]</p> <p>> Describe the effects of liver failure on the human body [4]</p> <p>> Explain how diabetes can cause the body cells to lose more water [3]</p> <p>✦ Suggest two reasons why the data is considered valid [2]</p> <p>✦ Suggest one factor that may reduce the validity [1]</p>
Cancer	<p>> Compare the similarities and differences between benign and malignant tumours</p>

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	<p>[4]</p> <p>➤ Name some risk factors of cancer</p> <p>[2]</p> <p>➤ Smoking can cause diseases such as co explain why this is not a communicable disease</p> <p>[2]</p> <p>➤ Helicobacter pylori or acid tolerant bacteria which can damage the human mucus lining, suggest how an infection might result in a stomach ulcer develop</p> <p>[2]</p> <p>➤ Describe how a person infected with helicobacter pylori could also develop cancer [3]</p>
leaf structure	<p>➤ The changes in the mean width of the stomata in normal conditions are an advantage to the plant, explain how</p> <p>[4]</p>
transpiration and translocation	<p>➤ Define and explain the process of transpiration</p> <p>[6]</p> <p>➤ Compare the process of transpiration translocation</p> <p>[6]</p> <p>➤ Describe three reasons why transpiration is important</p> <p>[3]</p>

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