

Golden Knowledge Multiple Choice Question sheet: Topic 2: Organisation (Animals) (TRILOGY COURSE)

Use the table below to help you identify which questions are for each lesson / section of learning within this topic:

Lesson Ref	Specification ref (Trilogy)	Lesson content	Question numbers
B3.1	2.1	Tissues and organs	1-4
B3.2	2.2.1	The human digestive system	5-7
B3.3	2.2.1	The chemistry of food	8-12
RP5		Required practical 5 - Food tests for sugars (starch and sugars), proteins and lipids	13-15
B3.4	2.2.1	Catalysts and enzymes	16-22
B3.5	2.2.1	Factors affecting enzyme action	23-26
RP4		Required practical 4 - Enzyme action in different pH	27-31
B3.6	2.2.1	How the digestive system works	32-38
B3.7	2.2.1	Making digestion efficient	39-47
B4.1	2.2.3	Blood	48-51
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B4.3	2.2.2	The heart (and dissection if not done in year 9)	56-63
B4.3	2.2.2	The heart Dissection	56-63
B4.4	2.2.4	Helping the heart	64-65
B4.5	2.2.2	Breathing and gas exchange	66-69

1. What is the basic building block of all living organisms?
 - a. Tissue
 - b. Organ
 - c. Cell
 - d. Organ system
2. How would you define a tissue?
 - a. A group of organs with similar structures
 - b. A group of cells with different functions
 - c. A group of cells with a similar structure and function
 - d. A group of cells without any specific function
3. Which of the following describes an organ?
 - a. A group of tissues with a similar function
 - b. A group of cells with a similar structure and function
 - c. An aggregation of tissues
 - d. A group of organs with the same function
4. How are organs organized within an organism?
 - a. They function independently
 - b. They are not organized
 - c. They work together in systems
 - d. They are not necessary for life
5. Which of the following is an example of an organ system responsible for digestion and absorption of food?
 - a. Nervous system
 - b. Circulatory system
 - c. Skeletal system
 - d. Digestive system

6. What is the role of the organs in the digestive system?
 - a. To control body movement
 - b. To process sensory information
 - c. To digest and absorb food
 - d. To support the body's structure
7. Why is digestion important in the human body?
 - a. To generate electricity
 - b. To regulate body temperature
 - c. To obtain energy and nutrients from food
 - d. To produce oxygen
8. What can you do with regard to identifying the word equations for substrates, enzymes, and products of digestion?
 - a. Identify reactants only
 - b. Identify products only
 - c. Write word equations for digestion components
 - d. Describe the process of photosynthesis
9. What is the role of digestive enzymes in the body?
 - a. To regulate body temperature
 - b. To provide mechanical support
 - c. To digest food into smaller molecules
 - d. To store energy for later use
10. Which enzyme is an example of a carbohydrase enzyme?
 - a. Protease
 - b. Amylase
 - c. Lipase
 - d. Nuclease
11. What are the products of digestion used for in the body?
 - a. To fuel the car
 - b. To support plant growth
 - c. To provide energy and building materials
 - d. To clean the environment
12. Why is glucose being used for respiration important in living organisms?
 - a. It helps in photosynthesis
 - b. It has no biological significance
 - c. It provides energy for various cellular processes, including respiration
 - d. It acts as a structural component of cells
13. Which reagent is used to test for the presence of sugars in a solution?
 - a. Iodine solution
 - b. Biuret reagent
 - c. Benedict's solution
 - d. Ethanol
14. What is the specific test for the presence of starch?
 - a. Benedict's test
 - b. Iodine test
 - c. Biuret test
 - d. Ethanol test

15. Which reagent is used to test for the presence of proteins?
- Iodine solution
 - Biuret reagent
 - Benedict's solution
 - Ethanol
16. What is the term used to describe the specific region on an enzyme where a substrate binds?
- Active site
 - Reaction site
 - Metabolic hub
 - Catalytic zone
17. Which theory provides a simplified model to explain how enzymes work by fitting specifically with their substrates?
- Lock and key theory
 - Haphazard theory
 - Random collision theory
 - Enzyme lottery theory
18. Which enzyme is responsible for digesting proteins in the stomach?
- Protease
 - Lipase
 - Amylase
 - Nuclease
19. What is the function of the active site on an enzyme?
- It determines the enzyme's shape.
 - It acts as a placeholder for the substrate.
 - It provides structural support to the enzyme.
 - It stores excess energy.
20. In the 'lock and key' model, what does the 'lock' represent?
- The enzyme
 - The substrate
 - The reaction product
 - The active site
21. Which enzyme is responsible for digesting fats in the small intestine?
- Protease
 - Lipase
 - Amylase
 - Nuclease
22. Where are protease enzymes produced, and where do they mainly function?
- Produced in the stomach, function in the small intestine
 - Produced in the small intestine, function in the pancreas
 - Produced in the pancreas, function in the stomach
 - Produced in the liver, function in the large intestine
23. What is one of the key factors that can affect the activity of enzymes?
- Temperature
 - Enzyme colour
 - Enzyme shape
 - Enzyme name

24. Which of the following temperature ranges is generally optimal for enzyme activity in the human body?
- Below freezing (0°C)
 - Room temperature (about 25°C)
 - Body temperature (around 37°C)
 - Boiling point (100°C)
25. What is the term for the process by which extreme changes in temperature or pH can cause an enzyme to lose its shape and function?
- Deformation
 - Inversion
 - Denaturation
 - Transformation
26. How does extreme pH (either too acidic or too basic) affect enzyme activity?
- It speeds up enzyme reactions.
 - It has no effect on enzymes.
 - It can denature enzymes and slow down reactions.
 - It only affects enzymes found in plants.
27. When testing the effect of pH on enzyme action by adding starch solution to amylase, what is the role of iodine solution in the experiment?
- To test the pH of the solution
 - To test for the presence of amylase
 - To determine when the solution turns brown
28. In the experiment, why is the solution with starch and amylase initially blue-black in colour when iodine solution is added?
- Starch reacts with iodine to turn the solution blue-black
 - Amylase changes the colour of the solution
 - Iodine reacts with amylase to turn the solution blue-black
29. How does the pH of the solution affect the rate of enzyme action in this experiment?
- Lower pH speeds up enzyme activity
 - Higher pH speeds up enzyme activity
 - pH has no effect on enzyme activity
30. In the experiment, at what pH level is the solution most likely to turn brown (indicating the presence of starch) quickly?
- pH 2
 - pH 7 (neutral)
 - pH 10
31. What does it mean when the solution in the experiment turns brown after adding iodine solution?
- The enzyme amylase is inactive
 - The enzyme amylase is working efficiently
 - The pH of the solution has no impact on enzyme activity
32. What type of enzyme is amylase in the context of digestion?
- Lipidase
 - Protease
 - Carbohydrase
33. Why are digestive enzymes important in the process of digestion?
- They help regulate body temperature
 - They break down complex molecules into simpler ones for absorption
 - They store excess nutrients in the body

34. What is the primary role of amylase in digestion?
- Breaking down fats
 - Breaking down proteins
 - Breaking down carbohydrates
35. What are the products of digestion primarily used for in the body?
- Providing structural support
 - Energy production in respiration
 - Hormone synthesis
36. In which part of the body is bile produced?
- Stomach
 - Liver
 - Small intestine
37. Where is bile stored until it is needed for digestion?
- Gallbladder
 - Pancreas
 - Kidneys
38. What is the pH nature of bile?
- Acidic
 - Neutral
 - Alkaline
39. What is the primary substrate for the enzyme amylase in the digestion process?
- Starch
 - Protein
 - Lipid
40. In the digestion of proteins, which enzyme is responsible for breaking them down into smaller peptides?
- Lipase
 - Protease
 - Amylase
41. Which enzyme is involved in breaking down lipids into fatty acids and glycerol during digestion?
- Amylase
 - Protease
 - Lipase
42. Why is the process of digestion essential for the human body?
- To provide structural support
 - To break down complex molecules into simpler ones for absorption and energy
 - To regulate body temperature
43. What happens if the digestive enzymes are not functioning correctly?
- Enhanced absorption of nutrients
 - Impaired digestion and nutrient absorption
 - Increased energy production
44. What is the primary role of digestive enzymes in the body?
- Regulating the nervous system
 - Transporting oxygen in the bloodstream
 - Breaking down food into molecules the body can use

45. Which of the following is a benefit of having a larger surface area to volume ratio for fat droplets?
- Slower digestion
 - Faster digestion
 - No effect on digestion
46. Why does a small fat droplet have a larger surface area to volume ratio?
- It has more lipids
 - It is more spherical
 - It is less spherical
47. How does the larger surface area to volume ratio of small fat droplets affect their digestion by lipase?
- Slows down digestion
 - Speeds up digestion
 - No effect on digestion
48. What is blood classified as in the human body?
- Organ
 - Tissue
 - Cell
49. Which component of blood is primarily responsible for carrying oxygen to body tissues?
- Red blood cells
 - White blood cells
 - Platelets
50. Which type of blood cells are involved in the immune response and defence against infections?
- Platelets
 - White blood cells
 - Red blood cells
51. What is the key adaptation of red blood cells that enables them to transport oxygen efficiently?
- Large size
 - Nucleus presence
 - Biconcave shape
52. Which type of blood vessel has thick walls with smooth muscle and elastic fibres to withstand high blood pressure and regulate blood flow?
- Arteries
 - Veins
 - Capillaries
53. What is the primary function of capillaries in the circulatory system?
- To transport blood away from the heart
 - To exchange nutrients, gases, and waste products with body tissues
 - To store excess blood for emergencies
54. Which blood vessel carries oxygenated blood back to the heart and typically has thinner walls than arteries?
- Arteries
 - Veins
 - Capillaries

55. What structural feature allows capillaries to facilitate the exchange of substances with surrounding tissues?
- Thick, muscular walls
 - Permeable walls with a large surface area
 - Valves to prevent backflow
56. What structures can you identify in the human heart?
- Arteries and veins
 - Valves and chambers
 - Nerves and muscles
57. What is the main function of the heart in the human body?
- To digest food
 - To pump blood throughout the body
 - To filter waste products
58. How many circulatory systems are present in the human body?
- One
 - Two
 - Three
59. Which chamber of the heart pumps blood to the lungs for oxygenation?
- Right atrium
 - Right ventricle
 - Left atrium
60. Which part of the heart pumps oxygenated blood to the rest of the body?
- Right ventricle
 - Left atrium
 - Left ventricle
61. What is the role of the coronary arteries?
- To provide oxygen to the heart muscle
 - To carry deoxygenated blood
 - To transport food to the heart
62. Why are heart valves essential in the circulatory system?
- To regulate body temperature
 - To maintain blood flow in one direction
 - To produce red blood cells
63. Where are the cells forming the heart's natural pacemaker located?
- In the left atrium
 - In the aorta
 - In the right atrium
64. Why is an artificial pacemaker important for some individuals?
- To improve eyesight
 - To regulate heart rhythm
 - To assist in digestion
65. What does an artificial pacemaker typically resemble in appearance?
- A wristwatch
 - A metallic bracelet
 - A small device inserted into the heart

66. Why are the lungs adapted for gas exchange?
- To assist in digestion
 - To regulate blood sugar
 - To facilitate the exchange of oxygen and carbon dioxide
67. What is the purpose of the alveoli in the lungs?
- To absorb nutrients from food
 - To exchange oxygen and carbon dioxide
 - To filter bacteria from the bloodstream
68. The windpipe is also known as the:
- Larynx
 - Trachea
 - Oesophagus
69. Which of the following best describes the bronchioles in the human respiratory system?
- Thin-walled structures for gas exchange
 - Large air passages leading directly to the alveoli
 - Small airways branching from the bronchi to deliver air to the alveoli

Marksheet – Fill in your answers using this grid:

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Qn	Answer	Correct	Check
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Qn	Answer	Correct	Check
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Feedback and Review

Reviewing and providing feedback on your GCSE biology questions is an important part of the learning process. Here's a list of tasks to help you effectively review and learn from the content you didn't know:

Identify Weak Areas: Go through the questions you answered and identify the specific topics or concepts you struggled with.

Revisit the Questions: Re-read the questions you answered incorrectly to understand the context and what was expected in your response.

Consult Textbooks and Notes: Refer to your GCSE biology textbooks, revision guides and class work to find information related to the topics you found challenging.

Online Resources: Use online resources and educational websites, videos, or articles to gain a deeper understanding of the topics you struggled with. Ask if you are unsure which to use.

Create a Summary: Summarize the key points for each topic or concept in your own words. This will help reinforce your understanding.

Practice Problems: Look for additional practice questions or worksheets related to the weak areas you identified and attempt them.

Flashcards: Create flashcards for important terms, definitions, and concepts. Use them for quick and effective review.

Mind Maps: Create visual mind maps or concept maps to connect related ideas and concepts. This can help you see the bigger picture.

Teach Someone Else: Explaining what you've learned to a friend or family member can be an effective way to reinforce your understanding.

Use the summary box below to annotate the ideas and information that you must use to provide your own feedback on what you are going to do next to develop and enhance your learning of this content:

Golden Knowledge Multiple Choice Question sheet: Topic 2: Organisation (Animals) (TRILOGY COURSE)**Answers**

1	c) Cell
2	c) A group of cells with a similar structure and function
3	c) An aggregation of tissues
4	c) They work together in systems
5	d) Digestive system
6	c) To digest and absorb food
7	c) To obtain energy and nutrients from food
8	c) Write word equations for digestion components
9	c) To digest food into smaller molecules
10	b) Amylase
11	c) To provide energy and building materials
12	c) It provides energy for various cellular processes, including respiration
13	c) Benedict's solution
14	b) Iodine test
15	b) Biuret reagent
16	a) Active site
17	a) Lock and key theory
18	a) Protease
19	b) It acts as a placeholder for the substrate.
20	b) The substrate
21	b) Lipase
22	a) Produced in the stomach, function in the small intestine
23	a) Temperature
24	c) Body temperature (around 37°C)
25	c) Denaturation
26	c) It can denature enzymes and slow down reactions.
27	c) To determine when the solution turns brown
28	a) Starch reacts with iodine to turn the solution blue-black
29	b) Higher pH speeds up enzyme activity
30	a) pH 2
31	b) The enzyme amylase is working efficiently
32	c) Carbohydrase
33	b) They break down complex molecules into simpler ones for absorption
34	c) Breaking down carbohydrates
35	b) Energy production in respiration
36	b) Liver
37	a) Gallbladder
38	c) Alkaline
39	a) Starch
40	b) Protease
41	c) Lipase
42	b) To break down complex molecules into simpler ones for absorption and energy
43	b) Impaired digestion and nutrient absorption
44	c) Breaking down food into molecules the body can use
45	b) Faster digestion
46	c) It is less spherical
47	b) Speeds up digestion

48	b) Tissue
49	a) Red blood cells
50	b) White blood cells
51	c) Biconcave shape
52	a) Arteries
53	b) To exchange nutrients, gases, and waste products with body tissues
54	b) Veins
55	b) Permeable walls with a large surface area
56	b) Valves and chambers
57	b) To pump blood throughout the body
58	b) Two
59	b) Right ventricle
60	c) Left ventricle
61	a) To provide oxygen to the heart muscle
62	b) To maintain blood flow in one direction
63	c) In the right atrium
64	b) Valves and chambers
65	c) A small device inserted into the heart
66	c) To facilitate the exchange of oxygen and carbon dioxide
67	b) To exchange oxygen and carbon dioxide
68	b) Trachea
69	c) Small airways branching from the bronchi to deliver air to the alveoli