# IGCSE Biology Practice Test 7

60 original multiple-choice questions covering all 21 Cambridge IGCSE Biology 0610 topics. Choose one answer for each question. The full answer key is on the last page — worked explanations for every question are free on the test page at QuaidianPoint.com.

Name: _____ Class: _____ Score: _____ / 60

## Characteristics and classification of living organisms

**Q1. Which life process allows an organism to detect and respond to changes in its surroundings?**

(A) Growth
(B) Movement
(C) Nutrition from food sources
(D) Sensitivity

**Q2. Which kingdom contains organisms that are single-celled, have a nucleus, and are not plants, animals or fungi?**

(A) Prokaryotes
(B) Protoctists
(C) Plantae
(D) Animalia

**Q3. Which pair of features is used to place an animal in the vertebrate group?**

(A) Jointed legs and wings for flight
(B) Soft body and shell
(C) Backbone and internal skeleton
(D) Segmented body and bristles

## Organisation of the organism

**Q4. Which organ system transports blood around the human body?**

(A) Circulatory system
(B) Respiratory system
(C) Digestive system
(D) Nervous system

**Q5. A ciliated epithelial cell is adapted for its job mainly by having which feature?**

(A) A large permanent vacuole for storage
(B) Tiny hair-like cilia that move mucus
(C) Many chloroplasts
(D) A thick cellulose wall

**Q6. Which structure is an example of an organ in a flowering plant?**

(A) Leaf
(B) Palisade cell
(C) Chloroplast
(D) Xylem vessel

## Movement into and out of cells

**Q7. A red blood cell placed in distilled water will swell and burst because of which process?**

(A) Diffusion of salts out of the cell
(B) Active transport of water
(C) Digestion of the membrane
(D) Osmosis of water into the cell

**Q8. Which condition gives the fastest rate of diffusion of a gas?**

(A) A small surface area for diffusion
(B) A long diffusion distance
(C) A large concentration difference
(D) A low temperature

**Q9. Root hair cells absorb mineral ions from very dilute soil water mainly by which process?**

(A) Osmosis
(B) Active transport
(C) Diffusion only
(D) Transpiration pull

## Biological molecules

**Q10. Which food test turns purple in the presence of protein?**

(A) Benedict's test
(B) Iodine test
(C) Emulsion test
(D) Biuret test

**Q11. What are proteins made from?**

(A) Amino acids
(B) Fatty acids and glycerol
(C) Simple sugars
(D) Nucleotides

**Q12. Which statement about glycogen is correct?**

(A) It is a protein stored in muscles and used for growth
(B) It is a fat stored in seeds
(C) It is a carbohydrate stored in liver and muscle
(D) It is a vitamin found in milk

## Enzymes

**Q13. Which model best describes how an enzyme and substrate interact?**

(A) The substrate changes the enzyme permanently during the reaction
(B) Lock and key, with the substrate fitting the active site
(C) The enzyme is broken down with the substrate
(D) The substrate dissolves the enzyme

**Q14. Which enzyme is found in the stomach and works best in acid conditions?**

(A) Amylase
(B) Lipase
(C) Trypsin
(D) Pepsin

**Q15. What happens to the rate of an enzyme-controlled reaction as substrate concentration increases, until all active sites are full?**

(A) It increases
(B) It decreases steadily
(C) It stays at zero
(D) It becomes negative

## Plant nutrition

**Q16. Which factor limits the rate of photosynthesis when light intensity and temperature are both high?**

(A) Oxygen concentration
(B) Soil pH
(C) Carbon dioxide concentration
(D) Water loss from leaves by transpiration

**Q17. A leaf is tested for starch after being kept in light. Which part gives a blue-black result with iodine?**

(A) The green part that was exposed to light
(B) A part covered with black paper to block light
(C) A variegated white part
(D) The midrib only

**Q18. A plant shows poor growth and old leaves turn yellow first. Which deficiency is most likely?**

(A) Calcium deficiency
(B) Iron deficiency
(C) Potassium deficiency
(D) Nitrate deficiency

## Human nutrition

**Q19. Which organ produces insulin and digestive enzymes?**

(A) Liver
(B) Pancreas
(C) Gall bladder
(D) Spleen

**Q20. Which nutrient deficiency causes scurvy?**

(A) Lack of iron
(B) Lack of calcium
(C) Lack of vitamin C
(D) Lack of vitamin D

**Q21. Which adaptation of a villus helps absorption?**

(A) A single layer of thin cells and a rich capillary network
(B) A thick wall and few blood vessels, slowing absorption greatly
(C) A large vacuole and chloroplasts
(D) A waterproof cuticle

## Transport in plants

**Q22. Which process explains how water moves up a tall tree in xylem?**

(A) Active transport by roots
(B) Transpiration pull
(C) Diffusion through phloem
(D) Osmosis from leaves

**Q23. A potometer is used to measure which quantity?**

(A) Rate of photosynthesis in the leaves
(B) Rate of respiration
(C) Rate of growth
(D) Rate of water uptake by a shoot

**Q24. How does water move through xylem vessels?**

(A) By active transport, using energy from respiration in the root hair cells
(B) By diffusion through living cells
(C) By transpiration pull up the stem
(D) By gravity alone, flowing downwards

## Transport in animals

**Q25. Which chamber of the heart pumps blood to the lungs?**

(A) Left atrium
(B) Left ventricle of the heart
(C) Right atrium
(D) Right ventricle

**Q26. Which vessel carries blood from the lungs back to the heart?**

(A) Pulmonary vein
(B) Pulmonary artery
(C) Hepatic vein
(D) Renal artery

**Q27. Which feature of arteries helps them withstand high pressure?**

(A) Valves throughout the vessel to prevent backflow
(B) Thin walls
(C) Thick muscular and elastic walls
(D) Large lumen only

## Diseases and immunity

**Q28. Which disease is caused by a bacterium and spread in droplets when an infected person coughs?**

(A) Influenza caused by a virus
(B) Tuberculosis
(C) Malaria
(D) Cholera

**Q29. Why is a booster dose of a vaccine sometimes given?**

(A) To strengthen the memory cell response so protection lasts longer
(B) To provide ready-made antibodies from another organism for immediate short-term protection
(C) To kill all pathogens in the body at once
(D) To replace antibiotics taken during illness

**Q30. Which white blood cell action destroys pathogens by engulfing them?**

(A) Antibody production
(B) Phagocytosis
(C) Clotting
(D) Memory cell formation

## Gas exchange in humans

**Q31. Which structure prevents food entering the trachea during swallowing?**

(A) Bronchus
(B) Alveolus
(C) Diaphragm
(D) Epiglottis

**Q32. Why are alveolar walls only one cell thick?**

(A) To store air
(B) To produce mucus
(C) To shorten the diffusion distance for gases
(D) To prevent water loss

**Q33. During exhalation, which change occurs in the thorax?**

(A) Ribs move up and diaphragm flattens
(B) Volume increases and pressure falls
(C) Volume decreases and air pressure rises
(D) Intercostal muscles contract strongly

## Respiration

**Q34. Which process releases energy from glucose without using oxygen in yeast?**

(A) Photosynthesis
(B) Aerobic respiration
(C) Digestion
(D) Anaerobic respiration

**Q35. Which word equation shows anaerobic respiration in yeast?**

(A) Glucose to ethanol plus carbon dioxide
(B) Glucose plus oxygen to carbon dioxide plus water
(C) Glucose to lactic acid
(D) Carbon dioxide plus water to glucose plus oxygen

**Q36. Which use of energy released by respiration occurs in a growing root tip?**

(A) Muscle contraction
(B) Active transport of ions into cells
(C) Keeping the body warm
(D) Movement of the whole plant

## Excretion in humans

**Q37. Which process in the kidney removes small molecules from blood into the tubule?**

(A) Reabsorption
(B) Secretion of urea only
(C) Ultrafiltration
(D) Digestion

**Q38. Which substance is normally found in the urine of a healthy person?**

(A) Urea
(B) Glucose, which is filtered from the blood but normally reabsorbed in the kidney tubules
(C) Protein
(D) Red blood cells

**Q39. Where does deamination take place?**

(A) Kidney, which filters the blood and removes urea from the body as urine
(B) Pancreas
(C) Spleen
(D) Liver

## Coordination and response

**Q40. What is the role of a receptor in a reflex?**

(A) It carries impulses away from the central nervous system
(B) It detects a stimulus and starts an impulse
(C) It contracts a muscle to produce a response
(D) It secretes a hormone into the blood

**Q41. What does adrenaline prepare the body for?**

(A) Sleep and rest
(B) Digestion after a meal
(C) Growth during childhood
(D) Fight or flight by raising heart rate and blood glucose

**Q42. In the eye, which structure controls the size of the pupil?**

(A) Lens
(B) Retina
(C) Iris
(D) Cornea

## Drugs

**Q43. Which substance in tobacco smoke combines with haemoglobin and reduces oxygen transport?**

(A) Carbon monoxide
(B) Nicotine
(C) Tar
(D) Water vapour

**Q44. Which effect does smoking have on the lungs?**

(A) It improves the ability of alveoli to exchange gases by clearing mucus from the airways
(B) It damages cilia and increases mucus, raising the risk of bronchitis
(C) It increases oxygen transport
(D) It has no effect on the airways

**Q45. Why is sharing needles a risk for people who inject drugs?**

(A) It causes immediate addiction
(B) It increases appetite
(C) It can spread blood-borne infections such as HIV
(D) It reduces heart rate permanently

## Reproduction

**Q46. Which structure in a flower receives pollen during pollination?**

(A) Ovary
(B) Anther
(C) Sepal
(D) Stigma

**Q47. In a flowering plant, what happens at pollination?**

(A) Pollen is transferred to the stigma
(B) A seed germinates
(C) The ovary ripens into a fruit
(D) The pollen nucleus fuses with the egg

**Q48. Which human reproductive structure produces eggs?**

(A) Uterus
(B) Ovary
(C) Oviduct
(D) Vagina

## Inheritance

**Q49. Which term describes the alleles an organism has for a particular gene?**

(A) Genotype
(B) Phenotype
(C) Allele frequency
(D) Mutation

**Q50. In a monohybrid cross between two heterozygous parents (Aa x Aa), what fraction of offspring is expected to show the recessive phenotype?**

(A) All of them
(B) Three quarters
(C) One quarter
(D) None of them

**Q51. Which statement about DNA is correct?**

(A) It is made of amino acids
(B) It is a double helix carrying the genetic code
(C) It is found only in gametes
(D) It is broken down during mitosis

## Variation and selection

**Q52. Which characteristic shows discontinuous variation in humans?**

(A) Height, which varies gradually and is influenced by many genes and the environment
(B) Body mass
(C) Skin colour
(D) Ability to roll the tongue

**Q53. In natural selection, which individuals are most likely to survive and reproduce?**

(A) The largest individuals
(B) The oldest individuals
(C) Those best adapted to the environment
(D) Those that move the fastest

**Q54. Which process is used in selective breeding?**

(A) Random mating with no human choice
(B) Natural predators removing weak animals
(C) Cloning by tissue culture only
(D) Choosing parents with desired traits and breeding from them

## Organisms and their environment

**Q55. In a food web, what happens if the number of herbivores falls sharply?**

(A) Producers increase and carnivores may decrease
(B) Producers decrease and carnivores increase
(C) Decomposers disappear completely
(D) The Sun provides less energy

**Q56. Which process returns carbon dioxide to the air in the carbon cycle?**

(A) Photosynthesis
(B) Respiration
(C) Feeding by herbivores
(D) Formation of fossil fuels

## Human influences on ecosystems

**Q57. Which practice helps protect endangered species?**

(A) Hunting animals without limits so that only the strongest individuals survive to breed
(B) Destroying habitats for building
(C) Introducing new predators
(D) Creating protected reserves and breeding programmes

**Q58. Which pollutant from vehicles contributes to acid rain?**

(A) Sulfur dioxide
(B) Oxygen
(C) Water vapour
(D) Carbon monoxide only

## Biotechnology and genetic modification

**Q59. Which enzyme is used to cut DNA at a specific base sequence in genetic engineering?**

(A) Amylase
(B) Ligase
(C) Restriction enzyme
(D) Protease

**Q60. Which concern is often raised about genetically modified crops?**

(A) They always taste better
(B) Modified genes might spread to wild plants
(C) They need no fertiliser at all
(D) They cannot be grown outdoors

# Answer Key

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|---|---|---|---|---|---|
| Q1: D | Q11: A | Q21: A | Q31: D | Q41: D | Q51: B |
| Q2: B | Q12: C | Q22: B | Q32: C | Q42: C | Q52: D |
| Q3: C | Q13: B | Q23: D | Q33: C | Q43: A | Q53: C |
| Q4: A | Q14: D | Q24: C | Q34: D | Q44: B | Q54: D |
| Q5: B | Q15: A | Q25: D | Q35: A | Q45: C | Q55: A |
| Q6: A | Q16: C | Q26: A | Q36: B | Q46: D | Q56: B |
| Q7: D | Q17: A | Q27: C | Q37: C | Q47: A | Q57: D |
| Q8: C | Q18: D | Q28: B | Q38: A | Q48: B | Q58: A |

| | | | | | |
|---|---|---|---|---|---|
| Q9: B | Q19: B | Q29: A | Q39: D | Q49: A | Q59: C |
| Q10: D | Q20: C | Q30: B | Q40: B | Q50: C | Q60: B |

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-7/