IGCSE Biology Practice Test 9

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 group of animals has a moist skin, lays eggs in water, and lives on land as an adult?

(A) Reptiles with scaly skin
(B) Fish
(C) Amphibians
(D) Birds

Q2. Which feature distinguishes a mammal from a bird?

(A) Mammals have hair and produce milk
(B) Mammals lay hard-shelled eggs like birds do
(C) Mammals have feathers
(D) Mammals have a beak

Q3. Which organism is a prokaryote?

(A) Chlorella
(B) Yeast
(C) Amoeba
(D) Bacterium

Organisation of the organism

Q4. Which tissue in a plant root is specialised for absorption?

(A) Xylem
(B) Root hair tissue
(C) Phloem
(D) Leaf mesophyll tissue in leaves

Q5. Which organ in the human body filters blood and forms urine?

(A) Liver
(B) Spleen
(C) Bladder
(D) Kidney

Q6. Which example shows a system working with another system?

(A) A single muscle cell contracting repeatedly on its own
(B) A chloroplast absorbing light
(C) The heart pumping blood to muscles during exercise
(D) A root hair absorbing water

Movement into and out of cells

Q7. Which particles move by diffusion?

(A) Particles moving from high to low concentration
(B) Particles moving only with energy input from respiration
(C) Water molecules only
(D) Large proteins through cell walls

Q8. What happens to a plant cell placed in a concentrated salt solution?

(A) Water enters by osmosis and the cell becomes turgid but does not burst
(B) Water leaves by osmosis and the cell becomes plasmolysed
(C) Salts enter by diffusion through the membrane into the cell
(D) The membrane dissolves

Q9. Which particles can pass through a partially permeable membrane most easily?

(A) Large protein molecules, which are too big to fit through the tiny pores
(B) Starch grains
(C) Small molecules such as water
(D) Whole cells

Biological molecules

Q10. Which food sample would give a positive emulsion test?

(A) Pure glucose solution in water
(B) Starch suspension
(C) Egg white solution
(D) Cooking oil mixed with water

Q11. Which carbohydrate is used to build plant cell walls?

(A) Cellulose
(B) Glucose
(C) Glycogen stored in animals
(D) Maltose

Enzymes

Q12. Which factor does NOT affect the rate of an enzyme-controlled reaction?

(A) Temperature
(B) The colour of the container
(C) pH
(D) Substrate concentration in the mixture

Q13. An enzyme is placed in strong acid and then returned to its optimum pH, but it no longer works. Why?

(A) It was used up during the reaction and could not be recovered
(B) It dissolved completely
(C) It changed into substrate
(D) It was denatured and its active site shape was lost

Plant nutrition

Q14. Which gas is taken in by leaves during photosynthesis?

(A) Carbon dioxide
(B) Oxygen
(C) Nitrogen from the air
(D) Hydrogen

Q15. Which pigment absorbs light energy for photosynthesis?

(A) Melanin
(B) Haemoglobin
(C) Chlorophyll
(D) Carotene only in roots

Human nutrition

Q16. Which mineral is needed to make haemoglobin?

(A) Calcium
(B) Iron
(C) Iodine
(D) Potassium

Q17. Where does most chemical digestion of fats take place?

(A) Small intestine
(B) Mouth
(C) Stomach with acid conditions
(D) Colon

Q18. Which condition is caused by a lack of calcium or vitamin D?

(A) Anaemia
(B) Rickets
(C) Scurvy
(D) Kwashiorkor

Transport in plants

Q19. Which structure in a leaf controls water loss?

(A) Xylem vessel
(B) Palisade cell in the leaf
(C) Midrib
(D) Stoma with guard cells

Q20. From which part of a plant are sugars transported in phloem?

(A) Roots only
(B) Flowers only during flowering
(C) Leaves as sources
(D) Seeds only

Q21. Which statement about transpiration is correct?

(A) It is the movement of sugars in phloem to sinks
(B) It is the uptake of water by roots
(C) It is the loss of water vapour from leaves
(D) It is the opening of flowers

Transport in animals

Q22. Which component of blood transports dissolved food, hormones and urea?

(A) Red blood cells
(B) Platelets
(C) White blood cells
(D) Plasma

Q23. What happens to heart rate during vigorous exercise?

(A) It increases to supply muscles faster
(B) It decreases to save energy during exercise
(C) It stays the same
(D) It stops between beats

Q24. Which vessel carries deoxygenated blood from the body back to the heart?

(A) Aorta
(B) Vena cava
(C) Pulmonary vein
(D) Coronary artery

Diseases and immunity

Q25. Which statement about vaccination is correct?

(A) It triggers active immunity and memory cell formation
(B) It gives antibodies that last for life without memory cells
(C) It kills all pathogens in the body at once
(D) It works only against bacteria

Q26. Which defence traps pathogens in the airways?

(A) Stomach acid
(B) Blood clotting at a wound site
(C) Mucus and cilia
(D) Skin oils

Q27. Which pathogen is treated with antibiotics?

(A) HIV virus
(B) Bacteria causing a throat infection
(C) Malaria protoctist only with antimalarials
(D) Fungal spores only

Gas exchange in humans

Q28. Which muscle is the main muscle of breathing?

(A) Biceps
(B) Intercostal muscle only
(C) Abdominal muscle only
(D) Diaphragm

Q29. Why is the air in the alveoli kept moist?

(A) To prevent gas exchange
(B) To dissolve oxygen for diffusion into the blood capillaries
(C) To keep gases dissolved so they can diffuse across cells
(D) To cool the blood

Q30. Which change in the chest causes inhalation?

(A) Volume falls and pressure rises above air pressure
(B) Ribs move down and in
(C) Diaphragm relaxes and domes up
(D) Volume rises and pressure falls below air pressure

Respiration

Q31. Which statement describes the energy released in respiration?

(A) It is used for life processes such as growth and movement
(B) It is stored as light in cells
(C) It is lost as starch
(D) It is only used by muscles

Q32. Which product of anaerobic respiration in muscle causes cramp and fatigue?

(A) Ethanol
(B) Lactic acid
(C) Carbon dioxide
(D) Water

Q33. Which gas is absorbed by a respiring organism and used to release energy?

(A) Carbon dioxide
(B) Nitrogen
(C) Hydrogen
(D) Oxygen

Excretion in humans

Q34. Which substance is filtered out of blood but then fully reabsorbed in a healthy kidney?

(A) Glucose
(B) Urea
(C) Water
(D) Salt

Q35. Which hormone increases water reabsorption in the kidney?

(A) Insulin
(B) Adrenaline
(C) Antidiuretic hormone
(D) Auxin

Q36. Which organ excretes carbon dioxide?

(A) Kidney, which filters urea and excess salts from the blood to form urine
(B) Lungs
(C) Skin
(D) Liver

Coordination and response

Q37. Which part of the nervous system coordinates a reflex action in the spinal cord?

(A) Brain only
(B) Receptor only
(C) Effector only
(D) Relay neurone in the spinal cord

Q38. Which response is an example of phototropism?

(A) Roots growing downwards
(B) A shoot bending towards light
(C) A leaf closing at night
(D) A flower opening in spring

Q39. Which eye structure focuses light onto the retina?

(A) Pupil
(B) Sclera
(C) Lens
(D) Blind spot

Drugs

Q40. Which effect does tar in tobacco smoke have on the lungs?

(A) It coats airways and damages cilia
(B) It increases oxygen uptake
(C) It strengthens alveoli
(D) It prevents infection

Q41. Which statement about antibiotics and resistance is correct?

(A) Antibiotics should be stopped as soon as symptoms improve
(B) Completing a course reduces the chance of resistant bacteria surviving
(C) Antibiotics work better in larger random doses
(D) Resistance only affects viruses

Q42. Which drug is classified as a depressant?

(A) Alcohol
(B) Caffeine
(C) Nicotine
(D) Cocaine

Reproduction

Q43. After fertilisation in a flowering plant, what does the ovary develop into?

(A) Seed
(B) Pollen grain
(C) Stigma
(D) Fruit

Q44. Which plant structure develops into a fruit after fertilisation?

(A) Stigma
(B) Anther
(C) Ovary wall
(D) Petal

Q45. Which advantage does asexual reproduction give a plant in a stable environment?

(A) More genetic variation
(B) Rapid production of many identical offspring
(C) Better dispersal by seeds
(D) Resistance to new diseases

Inheritance

Q46. Which pair of alleles would show a recessive phenotype?

(A) AA
(B) Aa
(C) AB
(D) aa

Q47. What is the chance that a baby will be a boy, based on sex chromosomes?

(A) 1 in 2
(B) 1 in 4
(C) 3 in 4
(D) 1 in 1

Q48. Which molecule carries instructions for making proteins?

(A) Lipid
(B) Starch
(C) DNA
(D) Glycogen

Variation and selection

Q49. Which example is mainly environmental variation?

(A) Blood group
(B) Scarring from an injury
(C) Eye colour
(D) Natural hair colour

Q50. Which statement best explains why a species may become extinct?

(A) All individuals reproduce equally
(B) The environment stays unchanged
(C) New food sources appear
(D) The environment changes faster than the species can adapt

Q51. In selective breeding for milk yield, which cows are chosen as parents?

(A) Those giving the most milk
(B) Those giving the least milk
(C) Those chosen at random
(D) Those that are youngest only

Organisms and their environment

Q52. In a food chain, what is a herbivore?

(A) An organism that makes its own food
(B) An organism that breaks down dead material
(C) An animal that feeds on plants
(D) An animal that eats other animals

Q53. Which process in the nitrogen cycle is carried out by denitrifying bacteria?

(A) Converting nitrates back to nitrogen gas
(B) Converting ammonium to nitrites
(C) Converting nitrites to nitrates
(D) Converting nitrogen gas to nitrates

Q54. Which statement about energy flow in a food chain is correct?

(A) Energy is recycled like nutrients
(B) Energy increases at each trophic level
(C) All energy eaten becomes new biomass
(D) Energy is lost at each transfer and is not recycled

Human influences on ecosystems

Q55. Which human activity can cause acid rain?

(A) Planting large areas of trees that absorb carbon dioxide from the atmosphere
(B) Burning fossil fuels that release sulfur dioxide
(C) Using drip irrigation
(D) Crop rotation

Q56. Which gas, released from fertilisers and animal waste, contributes to global warming?

(A) Oxygen
(B) Argon
(C) Methane
(D) Nitrogen

Q57. Which action best reduces the demand for land cleared for farming?

(A) Increasing crop yields on existing farmland
(B) Clearing more forest each year
(C) Growing crops with lower yields
(D) Abandoning irrigation

Biotechnology and genetic modification

Q58. Which biotechnology process makes yoghurt?

(A) Photosynthesis by algae
(B) Fermentation by bacteria
(C) Genetic modification of cows
(D) Digestion by enzymes in the gut

Q59. Which step comes first in producing human insulin by genetic engineering?

(A) Bacteria divide many times
(B) Insulin is purified from bacteria
(C) The insulin gene is copied
(D) The human insulin gene is cut out using a restriction enzyme

Q60. Which is a possible benefit of genetically modified golden rice?

(A) It grows without water
(B) It needs no sunlight
(C) It provides vitamin A precursor to prevent deficiency
(D) It cures all eye diseases

Answer Key

Q1: C	Q11: A	Q21: C	Q31: A	Q41: B	Q51: A
Q2: A	Q12: B	Q22: D	Q32: B	Q42: A	Q52: C
Q3: D	Q13: D	Q23: A	Q33: D	Q43: D	Q53: A
Q4: B	Q14: A	Q24: B	Q34: A	Q44: C	Q54: D
Q5: D	Q15: C	Q25: A	Q35: C	Q45: B	Q55: B
Q6: C	Q16: B	Q26: C	Q36: B	Q46: D	Q56: C
Q7: A	Q17: A	Q27: B	Q37: D	Q47: A	Q57: A
Q8: B	Q18: B	Q28: D	Q38: B	Q48: C	Q58: B
Q9: C	Q19: D	Q29: C	Q39: C	Q49: B	Q59: D
Q10: D	Q20: C	Q30: D	Q40: A	Q50: D	Q60: C

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-9/