IGCSE Biology Practice Test 2

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. A student observes an organism that feeds, grows and responds to light. Which conclusion is justified?

(A) It must be a plant
(B) It must be a fungus
(C) It must be an animal
(D) It shows characteristics of living organisms

Q2. Which pair of features identifies an organism as an arthropod?

(A) Jointed legs and an exoskeleton
(B) Soft body and a shell
(C) Four limbs and fur
(D) Fins and gills

Q3. Why are viruses not placed in any of the five kingdoms?

(A) They are too small to see
(B) They cause disease in humans
(C) They are not made of cells and cannot reproduce alone
(D) They contain only protein

Organisation of the organism

Q4. A leaf, a root and a stem work together in a plant. What level of organisation is the whole plant?

(A) Tissue made of similar cells
(B) Organism
(C) Cell
(D) Organ

Q5. Which organelle releases energy from glucose in both plant and animal cells?

(A) Vacuole
(B) Chloroplast in plant cells only
(C) Mitochondrion
(D) Cell wall

Q6. A microscope slide shows cells with a large permanent vacuole and a cell wall. What type of cell is it?

(A) Bacterial cell
(B) Plant cell
(C) Animal muscle cell
(D) Red blood cell

Movement into and out of cells

Q7. Root hair cells absorb mineral ions from very dilute soil water. Which process must be involved?

(A) Osmosis only
(B) Diffusion only down a gradient
(C) Transpiration
(D) Active transport

Q8. Why does a red blood cell burst in pure water?

(A) Water enters by osmosis and the cell has no wall
(B) Salts diffuse into the cell rapidly
(C) The cell membrane dissolves in water
(D) Active transport pumps water inward

Q9. Which factor increases the rate of diffusion of a gas into a cell?

(A) A steeper concentration gradient
(B) A smaller surface area
(C) A lower temperature
(D) A thicker cell membrane with fewer pores

Biological molecules

Q10. A food sample turns blue-black with iodine solution. What does this show?

(A) Protein is present
(B) Fat is present
(C) Reducing sugar is present
(D) Starch is present

Q11. Which food test uses ethanol to show a cloudy white emulsion?

(A) Test for starch
(B) Test for fat
(C) Test for reducing sugar
(D) Test for protein

Enzymes

Q12. A student adds protease to a protein solution at 20 degrees Celsius and at 40 degrees Celsius. The reaction is faster at 40 degrees. Why?

(A) More enzyme molecules are produced
(B) The substrate changes shape
(C) Molecules collide more often and with more energy
(D) The enzyme becomes a substrate

Q13. Which graph shape shows the effect of pH on a single enzyme?

(A) A peak at the optimum pH with lower rates either side
(B) A flat line at all pH values from very acidic to very alkaline
(C) A steady rise that never falls
(D) A sharp fall that never recovers at low pH only

Plant nutrition

Q14. A plant kept in darkness for two days is tested with iodine and shows no blue-black colour. What does this suggest?

(A) The plant made starch from stored fat
(B) The plant absorbed starch from soil
(C) No photosynthesis occurred, so no new starch was made
(D) Chlorophyll was destroyed by light

Q15. Which mineral deficiency causes yellow leaves with dead spots?

(A) Magnesium deficiency
(B) Nitrate deficiency
(C) Phosphate deficiency
(D) Potassium deficiency

Human nutrition

Q16. A person lacks vitamin D over a long period. Which condition is most likely?

(A) Scurvy
(B) Anaemia
(C) Night blindness
(D) Rickets

Q17. Why is fibre important in the diet even though it is not digested?

(A) It provides most of our energy for growth
(B) It builds muscle protein
(C) It carries vitamins in blood
(D) It keeps food moving through the gut

Q18. Where does most chemical digestion of fat begin in effect, through emulsification?

(A) Stomach
(B) Small intestine
(C) Mouth
(D) Large intestine

Transport in plants

Q19. A potometer shows faster water uptake on a windy day. What explains this?

(A) Wind increases transpiration, pulling more water up the xylem
(B) Wind closes the stomata
(C) Wind cools the roots directly
(D) Wind forces water into the leaves

Q20. Which part of a root is adapted for water uptake?

(A) Root cap
(B) Woody stem base
(C) Root hair cell
(D) Lateral root tip only

Q21. Aphids feed from phloem. What does this tell us about phloem sap?

(A) It is mostly water with no solutes
(B) It contains dissolved sugars
(C) It carries only mineral ions
(D) It flows only downwards

Transport in animals

Q22. Blood in the pulmonary vein is different from blood in the pulmonary artery because it is:

(A) Oxygenated
(B) Low in glucose
(C) Carrying urea to the kidney
(D) Under the lowest pressure

Q23. Why do capillaries have walls only one cell thick?

(A) To resist high pressure
(B) To store extra blood
(C) To allow rapid exchange of materials
(D) To prevent white cells escaping into tissues

Q24. Which sequence shows the double circulation correctly?

(A) Heart, lungs, heart, body, heart
(B) Heart, body, lungs, body, heart
(C) Lungs, heart, lungs, body
(D) Heart, lungs, heart, body

Diseases and immunity

Q25. A child is given a vaccine containing a weakened pathogen. What happens next?

(A) Antibodies are injected directly
(B) The pathogen multiplies unchecked
(C) Lymphocytes respond and memory cells are made
(D) The immune system is switched off

Q26. Which disease is spread through contaminated water?

(A) HIV
(B) Cholera
(C) Influenza
(D) Tuberculosis

Q27. Why do antibiotics not cure influenza?

(A) They only work in the stomach
(B) They kill human cells first
(C) They are blocked by mucus
(D) Influenza is caused by a virus, not a bacterium

Gas exchange in humans

Q28. During exercise, breathing rate rises. What is the main reason?

(A) More carbon dioxide must be removed and more oxygen supplied
(B) The lungs need to rest between breaths
(C) The diaphragm becomes tired
(D) Blood volume falls sharply

Q29. Which structure prevents the trachea from collapsing?

(A) Thin muscle fibres
(B) Rings of cartilage
(C) Mucus lining
(D) Alveolar walls

Q30. What happens to the ribs during exhalation?

(A) They move down and inwards
(B) They move up and outwards
(C) They stay fixed in place
(D) They rotate around the spine

Respiration

Q31. Yeast respiring anaerobically in a sealed tube produces bubbles of gas. Which gas is it?

(A) Oxygen
(B) Hydrogen gas from the yeast culture
(C) Carbon dioxide
(D) Nitrogen

Q32. A muscle cell respires anaerobically during a sprint. Which substance builds up?

(A) Glucose
(B) Oxygen
(C) Ethanol
(D) Lactate

Q33. Why does aerobic respiration release more energy per glucose molecule than anaerobic respiration?

(A) It uses no enzymes
(B) It works only in plants
(C) It needs no mitochondria
(D) It breaks glucose down completely

Excretion in humans

Q34. Which substance is removed from the blood by the kidneys in addition to urea?

(A) Glucose, which is filtered from the blood but normally reabsorbed completely
(B) Protein
(C) Excess salts
(D) Red blood cells

Q35. What happens to most of the water filtered in the kidney?

(A) It is reabsorbed into the blood
(B) It passes straight to the bladder
(C) It is stored in the liver
(D) It leaves through the skin

Q36. A urine sample contains protein. What does this most likely indicate?

(A) Excess water intake
(B) Damage to the kidney filter
(C) A high-salt diet
(D) Normal kidney function in a healthy person

Coordination and response

Q37. A person touches a hot plate and pulls away before feeling pain. Why?

(A) The brain sends the fastest signal
(B) Hormones act before nerves
(C) The response is learned behaviour
(D) The reflex arc bypasses conscious thought

Q38. Which sense organ contains photoreceptors?

(A) Skin
(B) Tongue
(C) Eye
(D) Ear

Q39. In dim light, what happens to the pupil?

(A) It dilates to admit more light
(B) It constricts to protect the retina from damage by bright light entering the eye
(C) It closes completely
(D) It stays the same size

Drugs

Q40. Which substance in cigarette smoke reduces oxygen transport in blood?

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

Q41. Which effect does heroin have on the nervous system?

(A) It depresses nervous activity
(B) It speeds up reflexes permanently
(C) It increases oxygen uptake
(D) It strengthens heart muscle

Q42. Why can antibiotics become less effective over time?

(A) Bacteria learn to avoid doctors
(B) Patients develop immunity to drugs over time
(C) Viruses destroy the antibiotics
(D) Resistant bacteria survive and multiply

Reproduction

Q43. Which method of asexual reproduction is used by potato plants?

(A) Seed production
(B) Growth from tubers
(C) Pollination by insects
(D) Spore formation

Q44. What is the function of the placenta?

(A) To produce egg cells
(B) To trigger labour only
(C) To allow exchange between mother and fetus blood
(D) To protect the fetus from all infections

Q45. Which change occurs at puberty in males due to testosterone?

(A) Menstruation begins
(B) The voice deepens
(C) Breast development occurs
(D) Ovulation starts

Inheritance

Q46. A person has genotype IAIB. Why is their blood group AB?

(A) The IA allele masks IB completely in all cases
(B) The IB allele masks IA completely
(C) Both IA and IB alleles are expressed
(D) Neither allele is expressed

Q47. A pedigree shows a trait appearing in every generation and in both sexes. What inheritance pattern does this suggest?

(A) Recessive only
(B) Sex-linked only
(C) Mutation in mitochondria only
(D) Dominant inheritance

Q48. What is the phenotype of an organism with genotype Bb, where B is dominant?

(A) The dominant trait
(B) The recessive trait
(C) A blend of both traits
(D) No trait at all

Variation and selection

Q49. Antibiotic-resistant bacteria become common in a hospital. Which process best explains this?

(A) Bacteria choose to mutate
(B) Selection for resistant variants
(C) Direct instruction from doctors during treatment
(D) Migration of patients only

Q50. Which source of variation introduces entirely new alleles?

(A) Asexual reproduction
(B) Mitosis in body cells
(C) Environmental change alone
(D) Mutation

Q51. Which trait shows discontinuous variation?

(A) Tongue rolling ability
(B) Body mass
(C) Height
(D) Leaf length

Organisms and their environment

Q52. Which organism is a producer in a food chain?

(A) Fox
(B) Rabbit
(C) Grass
(D) Earthworm

Q53. Which process in the carbon cycle releases carbon dioxide from dead organisms?

(A) Decomposition and respiration
(B) Photosynthesis
(C) Feeding by herbivores
(D) Formation of fossil fuels over millions of years

Q54. A food web is more stable than a single food chain because:

(A) Each species has only one food source
(B) Top predators are removed
(C) Alternative food sources exist if one declines
(D) Energy transfer becomes 100 percent efficient at every level

Human influences on ecosystems

Q55. Fertilisers washed into a river cause fish deaths downstream. What is the sequence?

(A) Less algae, more oxygen, fish thrive
(B) More plants, less light, fish migrate
(C) Algae die, oxygen rises, and fish suffocate from heat
(D) Algal bloom, decay, oxygen depletion, fish die

Q56. Which human activity most directly increases atmospheric methane?

(A) Planting trees
(B) Cattle farming and rice paddies
(C) Using solar panels
(D) Recycling paper

Q57. Why are conservation programmes needed for endangered species?

(A) To increase hunting quotas
(B) To replace wild species with crops
(C) To protect habitats and maintain biodiversity
(D) To speed up extinction rates

Biotechnology and genetic modification

Q58. In a fermenter producing yoghurt, why is temperature carefully controlled?

(A) To kill all bacteria at the start
(B) To keep bacterial enzymes near their optimum
(C) To prevent any respiration
(D) To freeze the product solid

Q59. Which step comes first when genetically modifying bacteria to make insulin?

(A) Inserting the human insulin gene into a plasmid
(B) Growing bacteria in a large fermenter
(C) Purifying insulin from the culture
(D) Testing the insulin on patients

Q60. What is a possible concern about genetically modified crops?

(A) They always taste worse
(B) They cannot grow in soil
(C) They never produce seeds
(D) Modified genes could spread to wild relatives

Answer Key

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

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-2/