IGCSE Biology Practice Test 6

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 involves the removal of waste products made inside an organism?

(A) Nutrition
(B) Excretion
(C) Sensitivity
(D) Reproduction

Q2. A student observes an organism with jointed legs, a hard exoskeleton and three body sections. To which group does it belong?

(A) Annelids
(B) Molluscs
(C) Cnidarians
(D) Arthropods

Q3. Which feature is found in both plant cells and animal cells?

(A) A nucleus
(B) A chloroplast
(C) A large permanent vacuole
(D) A cellulose cell wall

Organisation of the organism

Q4. Which sequence correctly orders levels of organisation from smallest to largest?

(A) Organ, tissue, cell, system
(B) System, organ, tissue, cell
(C) Cell, tissue, organ, system
(D) Tissue, cell, system, organ

Q5. Which tissue carries out most photosynthesis in a leaf?

(A) Palisade mesophyll
(B) Upper epidermis
(C) Xylem vessels in the leaf
(D) Lower epidermis

Q6. Which level of organisation is formed when different tissues work together?

(A) Cell
(B) Tissue
(C) System
(D) Organ

Movement into and out of cells

Q7. By which process does oxygen move from an alveolus into a blood capillary?

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

Q8. What happens to a red blood cell placed in pure water?

(A) It becomes turgid but does not burst because its cell wall resists the pressure
(B) It shrinks as water leaves by osmosis
(C) It swells and bursts because water enters by osmosis
(D) It stays unchanged because water cannot cross the membrane

Q9. Which statement about diffusion is correct?

(A) It moves particles from higher to lower concentration without using energy
(B) It moves particles against a concentration gradient and requires energy from respiration
(C) It only moves water across a partially permeable membrane
(D) It only occurs in root hair cells

Biological molecules

Q10. Which test is used to detect starch in a food sample?

(A) Benedict's test, which is heated with the sample and gives a brick-red precipitate
(B) Iodine test
(C) Biuret test
(D) Emulsion test with ethanol

Q11. Which molecule is a polysaccharide used for energy storage in plants?

(A) Glucose
(B) Amino acid
(C) Glycerol
(D) Starch

Q12. A fat molecule is made from glycerol and which other component?

(A) Glucose units
(B) Amino acids
(C) Fatty acids
(D) Nucleotides

Enzymes

Q13. What happens to most human enzymes when the temperature rises well above the optimum?

(A) They work faster and faster without any limit
(B) They become more specific
(C) They are denatured and lose their shape
(D) They are used up in the reaction

Q14. Which enzyme breaks down starch in the mouth?

(A) Amylase
(B) Protease
(C) Lipase
(D) Catalase

Q15. At a low temperature, why is enzyme activity slow?

(A) The enzymes are denatured
(B) The substrate is used up quickly and cannot be replaced
(C) The enzymes are destroyed by cold
(D) Particles move slowly, so there are fewer collisions

Plant nutrition

Q16. Which substance is needed by a plant for photosynthesis, in addition to water and light energy?

(A) Oxygen
(B) Carbon dioxide
(C) Glucose
(D) Nitrate ions from the soil

Q17. A plant kept in darkness for two days is tested with iodine solution. What result is expected in its leaves?

(A) Blue-black colour throughout
(B) Brick-red precipitate
(C) Purple colour in the veins
(D) Brown colour, showing no starch present

Q18. Which mineral ion is needed to make chlorophyll?

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

Human nutrition

Q19. Where in the human gut is most digested food absorbed into the blood?

(A) Ileum
(B) Stomach
(C) Colon
(D) Rectum

Q20. Which mineral is needed to make haemoglobin in red blood cells?

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

Q21. A diet lacking fibre is most likely to cause which problem?

(A) Scurvy
(B) Rickets
(C) Constipation
(D) Anaemia caused by iron deficiency

Transport in plants

Q22. Which force pulls water up a plant stem in the transpiration stream?

(A) Root pressure, which pushes water upwards from the roots into the xylem vessels
(B) Capillarity in the soil
(C) Active transport in leaves
(D) Transpiration pull

Q23. Which factor decreases the rate of transpiration?

(A) High humidity
(B) Wind
(C) High temperature
(D) Bright light

Q24. Which statement describes translocation in a plant?

(A) Water moves up in xylem vessels to the leaves
(B) Sucrose moves in phloem from source to sink
(C) Mineral ions move into root hair cells
(D) Water vapour leaves through stomata

Transport in animals

Q25. In the human heart, which vessel carries oxygenated blood away from the heart to the body?

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

Q26. Which blood vessel carries blood back to the heart at low pressure?

(A) Artery
(B) Vein
(C) Capillary
(D) Lymph duct

Q27. What is the main function of valves in veins?

(A) To increase blood pressure
(B) To filter the blood
(C) To prevent backflow of blood
(D) To carry oxygen to tissues

Diseases and immunity

Q28. Which type of pathogen causes athlete's foot?

(A) Fungus
(B) Virus, a non-living particle that must reproduce inside a host cell
(C) Bacterium
(D) Protoctist

Q29. Which cells produce antibodies during an immune response?

(A) Red blood cells
(B) Lymphocytes
(C) Platelets
(D) Muscle cells

Q30. Which defence is a chemical barrier against pathogens entering the body?

(A) Hydrochloric acid in the stomach
(B) Skin
(C) Mucus trapping particles
(D) Blood clotting at a wound

Gas exchange in humans

Q31. Which feature of alveoli most increases the rate of gas exchange?

(A) Thick walls
(B) Small number of air sacs
(C) Dry inner surface
(D) Large surface area and rich blood supply

Q32. During exhalation, what happens to the diaphragm and the ribcage?

(A) Diaphragm contracts and flattens while the ribs move up and out to increase chest volume
(B) Diaphragm contracts and ribs move down
(C) Diaphragm relaxes and ribs move down and in
(D) Diaphragm relaxes and ribs move up

Q33. Why is the diaphragm important in breathing?

(A) It produces mucus to trap dust
(B) It contracts to increase chest volume for inhalation
(C) It filters oxygen from the air
(D) It carries oxygen to the blood

Respiration

Q34. Which product of anaerobic respiration in yeast is used to make bread rise?

(A) Lactic acid, which builds up in muscles during vigorous exercise
(B) Ethanol
(C) Water
(D) Carbon dioxide

Q35. Why does anaerobic respiration in muscle produce less energy per glucose molecule than aerobic respiration?

(A) Glucose is only partly broken down to lactic acid
(B) No glucose is used at all
(C) Oxygen is stored in the muscle
(D) Lactic acid releases extra energy later

Q36. After vigorous exercise, why does breathing stay rapid for a time?

(A) To replace lost water
(B) To cool the skin
(C) To supply oxygen to break down lactic acid
(D) To remove excess glucose

Excretion in humans

Q37. Which structure carries urine out of the body from the bladder?

(A) Urethra
(B) Ureter, which carries urine from each kidney down into the bladder
(C) Renal artery
(D) Renal vein

Q38. In a kidney tubule, which substance is selectively reabsorbed in large amounts when the body needs water?

(A) Urea
(B) Salt only
(C) Water
(D) Glucose only in diabetes

Q39. Which organ is mainly responsible for removing urea from the blood?

(A) Liver
(B) Kidney
(C) Lung
(D) Skin

Coordination and response

Q40. In a reflex arc, which neurone carries impulses from the receptor towards the central nervous system?

(A) Motor neurone
(B) Relay neurone
(C) Effector neurone
(D) Sensory neurone

Q41. Which hormone is released when blood glucose concentration falls too low?

(A) Insulin
(B) Adrenaline
(C) Glucagon
(D) Thyroxine

Q42. Which structure controls the size of the pupil?

(A) Cornea, the transparent front layer that refracts light into the eye
(B) Retina
(C) Lens
(D) Iris

Drugs

Q43. Which substance in tobacco smoke binds to haemoglobin and reduces oxygen transport?

(A) Carbon monoxide
(B) Nicotine, the addictive substance that makes the heart beat faster and narrows vessels
(C) Tar
(D) Smoke particles

Q44. Why can antibiotics not cure a common cold?

(A) The cold virus hides inside red blood cells
(B) Antibiotics kill bacteria, not viruses
(C) The immune system blocks antibiotics
(D) Cold viruses are resistant to all medicines

Q45. Which statement about solvents is correct?

(A) They are stimulants that increase alertness and speed up reactions in the nervous system
(B) They are antibiotics used against infection
(C) They are painkillers with no side effects
(D) They are depressants that can damage the liver and nervous system

Reproduction

Q46. Which part of a flower becomes the seed after fertilisation?

(A) Ovule
(B) Style
(C) Petal
(D) Sepal

Q47. In humans, where does fertilisation normally take place?

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

Inheritance

Q48. A gene for tall plants (T) is dominant over short plants (t). What is the phenotype of a Tt plant?

(A) Short
(B) Tall
(C) Medium height
(D) Cannot be predicted

Q49. Which sex chromosomes are found in a human male?

(A) XX
(B) XO
(C) XXX
(D) XY

Variation and selection

Q50. Which type of variation is mainly caused by genes and shows distinct categories?

(A) Discontinuous variation
(B) Continuous variation
(C) Environmental variation
(D) Acquired variation

Q51. Which process increases variation in a population?

(A) Cloning
(B) Asexual reproduction
(C) Mutation
(D) Selective breeding for one trait

Organisms and their environment

Q52. What is a community?

(A) A group of organisms of one species living together in one particular habitat
(B) All the organisms of all species living in a habitat
(C) A pyramid of numbers
(D) A carbon cycle diagram

Q53. Why is a pyramid of biomass usually narrower at higher trophic levels?

(A) Energy is lost at each transfer, so less biomass can be supported
(B) Top predators eat more food than herbivores
(C) Decomposers remove all biomass
(D) Plants grow faster than animals

Q54. Which organism is both a producer and part of the carbon cycle?

(A) A rabbit
(B) A green plant
(C) A fungus
(D) A bacterium in soil

Human influences on ecosystems

Q55. Which human activity most directly causes habitat destruction for orangutans?

(A) Overfishing in oceans
(B) Recycling paper
(C) Using solar power
(D) Clearing rainforest for palm oil plantations

Q56. What is global warming?

(A) A thinning of the ozone layer caused by chlorofluorocarbons released from old aerosols
(B) The warming of oceans by the Sun
(C) A rise in average Earth temperatures caused by increased greenhouse gases
(D) The removal of fish by predators

Q57. Which gas is the main cause of increased global warming from burning fossil fuels?

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

Biotechnology and genetic modification

Q58. In genetic modification, what is a plasmid commonly used for?

(A) To kill bacteria
(B) To produce antibodies
(C) To store starch
(D) To carry a desired gene into a bacterial cell

Q59. Which is a benefit of genetically modifying crops to resist pests?

(A) Less insecticide is needed
(B) Crops need more water
(C) Yields always fall
(D) Soil nutrients are removed faster

Q60. Which product is made by genetically modifying crops?

(A) Bread, which is made using yeast fermentation in dough left to rise
(B) Herbicide-resistant soya beans
(C) Fruit juice
(D) Cheese curd

Answer Key

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

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-6/