IGCSE Biology Practice Test 17

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 organisms to detect and respond to changes in their surroundings?

(A) Growth
(B) Excretion in this context, when the other conditions are taken into account
(C) Nutrition
(D) Sensitivity

Q2. Which kingdom contains organisms that are single-celled, have a nucleus, and may photosynthesise?

(A) Protoctist
(B) Fungus
(C) Animal
(D) Prokaryote in this context, when the other conditions are taken into account

Q3. Which kingdom contains organisms with cells that have no true nucleus?

(A) Fungi, whose cells have nuclei and cell walls of chitin
(B) Prokaryotes
(C) Plants
(D) Protoctists

Organisation of the organism

Q4. Which structure is found in plant cells but not in animal cells?

(A) Mitochondrion
(B) Ribosome
(C) Chloroplast
(D) Nucleus

Q5. Which tissue in a leaf is responsible for photosynthesis?

(A) Epidermis in this context, when the other conditions are taken into account
(B) Palisade mesophyll
(C) Xylem
(D) Cuticle

Q6. Which organelle releases most of the energy in aerobic respiration?

(A) Mitochondrion
(B) Cell membrane in this context, when the other conditions are taken into account
(C) Vacuole
(D) Golgi body

Movement into and out of cells

Q7. Which substance moves into root hair cells mainly by active transport when soil levels are low?

(A) Water
(B) Oxygen
(C) Mineral ions
(D) Carbon dioxide

Q8. A red blood cell placed in a concentrated salt solution will shrink. Why?

(A) Salt enters the cell rapidly in this context, when the other conditions are taken into account
(B) The cell wall contracts
(C) Protein synthesis stops
(D) Water leaves the cell by osmosis

Q9. Which condition speeds up diffusion of a gas into a liquid?

(A) A smaller concentration difference
(B) A thicker barrier
(C) A larger surface area
(D) A lower temperature

Biological molecules

Q10. Which food test turns from blue to purple in the presence of protein?

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

Q11. Which food test is used to detect the presence of protein?

(A) Benedict's test, which gives a brick-red precipitate when heated with a reducing sugar
(B) Biuret test
(C) Iodine test
(D) Emulsion test

Q12. Which carbohydrate is the main storage carbohydrate in animals?

(A) Glycogen
(B) Cellulose
(C) Sucrose
(D) Starch

Enzymes

Q13. Which term describes the model where the substrate fits exactly into the enzyme?

(A) Lock and key model
(B) Induced fit model only
(C) Fluid mosaic model
(D) Collision model

Q14. What happens to enzyme activity as pH moves away from the optimum in either direction?

(A) Activity stays the same
(B) Activity increases steadily
(C) The enzyme gains a new substrate
(D) Activity decreases

Q15. Which enzyme breaks down proteins in the stomach?

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

Plant nutrition

Q16. Which mineral ion is needed by plants to make chlorophyll?

(A) Nitrate
(B) Magnesium
(C) Phosphate in this context, when the other conditions are taken into account
(D) Potassium

Q17. Which part of a leaf cell absorbs light energy for photosynthesis?

(A) Nucleus
(B) Chloroplast
(C) Vacuole
(D) Mitochondrion

Q18. A plant kept in bright light but without carbon dioxide will show which result?

(A) Rapid starch formation
(B) Faster growth than normal
(C) Little or no photosynthesis
(D) Increased oxygen uptake only

Human nutrition

Q19. Which vitamin is needed for healthy vision and is found in liver and carrots?

(A) Vitamin C
(B) Vitamin D
(C) Vitamin B12
(D) Vitamin A

Q20. Which process in the stomach helps chemical digestion?

(A) Churning mixes food with acid and enzymes
(B) Villi absorb digested food
(C) Bile emulsifies large fat droplets in this context, when the other conditions are taken into account
(D) Water is reabsorbed into blood

Transport in plants

Q21. Which tissue transports sugars made in leaves to other parts of a plant?

(A) Xylem
(B) Epidermis
(C) Cambium
(D) Phloem

Q22. What is the role of the stomata in a leaf?

(A) They absorb water and mineral ions from the soil through the roots of the plant
(B) They make chlorophyll
(C) They allow gas exchange and control water loss
(D) They transport sugars to the roots

Transport in animals

Q23. Why can arteries carry blood pumped from the heart without bursting?

(A) Their walls are thick, muscular and elastic
(B) Their walls are thin and only one cell thick
(C) They contain valves along their whole length
(D) They carry blood at low pressure only

Q24. Why does the right ventricle have a thinner wall than the left ventricle?

(A) It receives blood directly from the body through the vena cava at high pressure
(B) It only pumps blood a short distance to the lungs
(C) It carries oxygenated blood only
(D) It filters out platelets

Diseases and immunity

Q25. Which disease is spread by a virus and affects the immune system?

(A) HIV/AIDS
(B) Cholera
(C) Tuberculosis
(D) Malaria

Q26. Which type of white blood cell produces antibodies?

(A) Platelet
(B) Lymphocyte
(C) Red blood cell
(D) Phagocyte only

Q27. Which method reduces the spread of cholera in a community?

(A) Sharing untreated water
(B) Storing food uncovered
(C) Ignoring sewage disposal
(D) Providing clean water and sewage treatment

Gas exchange in humans

Q28. What happens to the volume of the chest during exhalation?

(A) It increases because the intercostal muscles contract and raise the ribcage upwards and outwards
(B) It stays the same
(C) It decreases as the diaphragm relaxes and moves upwards
(D) It doubles

Q29. Which change occurs in the chest during exhalation?

(A) Volume increases and pressure falls
(B) Ribcage moves up and out
(C) Volume decreases and air is forced out
(D) Diaphragm flattens further

Q30. Why is the wall of a capillary only one cell thick?

(A) To allow rapid diffusion of gases and nutrients
(B) To withstand high blood pressure
(C) To carry blood quickly to veins
(D) To prevent exchange with tissues

Respiration

Q31. Which product is made by anaerobic respiration in yeast?

(A) Lactic acid only
(B) Ethanol and carbon dioxide
(C) Water and oxygen
(D) Glucose and ethanol

Q32. What is meant by oxygen debt after vigorous exercise?

(A) Oxygen stored in the lungs
(B) Oxygen lost in sweat
(C) Extra carbon dioxide in blood
(D) Extra oxygen needed to break down lactic acid

Q33. Which experiment shows that germinating seeds respire and release carbon dioxide?

(A) Seeds in light produce oxygen
(B) Hydrogencarbonate indicator turns yellow in their presence
(C) Seeds absorb water only
(D) Limewater stays clear

Excretion in humans

Q34. Which process in the kidney forms the filtrate from blood plasma?

(A) Ultrafiltration at the glomerulus
(B) Selective reabsorption in the liver
(C) Secretion into the bladder
(D) Diffusion across the ureter wall

Q35. Which substance is normally absent from the urine of a healthy person?

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

Q36. Which hormone helps the kidney conserve water when the body is dehydrated?

(A) Insulin
(B) Adrenaline
(C) ADH
(D) Testosterone

Coordination and response

Q37. Which part of the eye changes shape to focus on near objects?

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

Q38. Which response helps a plant shoot grow towards light?

(A) Geotropism
(B) Thigmotropism
(C) Phototropism
(D) Chemotropism

Q39. Which hormone prepares the body for a rapid response to danger?

(A) Insulin
(B) Adrenaline
(C) ADH
(D) Oestrogen

Drugs

Q40. Which drug is a stimulant found in tobacco smoke that affects the brain?

(A) Nicotine
(B) Alcohol
(C) Heroin
(D) Penicillin

Q41. Which statement describes drug misuse?

(A) Taking a prescribed dose exactly as directed
(B) Using a drug in a way that harms health or social life
(C) Storing medicines in a locked cupboard
(D) Completing a full course of antibiotics

Q42. Which risk is linked to smoking during pregnancy?

(A) Stronger bones in the baby
(B) Faster lung development
(C) Improved birth weight
(D) Low birth weight and higher risk of miscarriage

Reproduction

Q43. Which structure produces pollen in a flower?

(A) Anther
(B) Ovary
(C) Sepal
(D) Stigma in this context, when the other conditions are taken into account

Q44. Which event in the menstrual cycle usually occurs around day 14?

(A) Menstruation begins
(B) The uterus lining is shed fully
(C) Ovulation
(D) Fertilisation always occurs

Q45. Which method of contraception also reduces transmission of sexually transmitted infections?

(A) The pill
(B) An intrauterine device
(C) A condom
(D) A diaphragm alone

Inheritance

Q46. Which term describes the observable features of an organism?

(A) Phenotype
(B) Genotype
(C) Allele
(D) Chromosome

Q47. In a monohybrid cross between two heterozygous parents, what ratio of dominant to recessive phenotypes is expected?

(A) 1 to 1 in this context, when the other conditions are taken into account
(B) 2 to 1
(C) 4 to 0
(D) 3 to 1

Q48. Which sex chromosome combination is found in a human female?

(A) XY in this context, when the other conditions are taken into account
(B) XX
(C) YY
(D) XO

Variation and selection

Q49. Which of these is an example of discontinuous variation?

(A) Height, which varies gradually across a full range of values in a population
(B) Body mass
(C) Skin colour
(D) Blood group

Q50. Which factor is a source of variation in sexual reproduction?

(A) Identical gametes
(B) Random fusion of gametes
(C) Mitosis only
(D) Single parent cloning

Q51. Which statement about selective breeding is correct?

(A) It increases genetic diversity
(B) It relies on random mutations only
(C) Humans choose parents with desired traits over many generations
(D) It always produces disease resistance

Organisms and their environment

Q52. Which term describes all the populations of different species living in one area?

(A) Community
(B) Ecosystem in this context, when the other conditions are taken into account
(C) Habitat
(D) Niche

Q53. In a food web, what is a herbivore?

(A) An animal that feeds only on producers, such as grass and leaves
(B) An animal that feeds on other animals at the top of a food chain in a woodland habitat
(C) A fox eating rabbits
(D) A tree capturing light

Q54. Why are food chains usually short?

(A) Producers are scarce
(B) Consumers eat too little
(C) Energy is lost at each trophic level
(D) Decomposers remove all energy

Human influences on ecosystems

Q55. Which gas contributes most to the enhanced greenhouse effect from human activity?

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

Q56. Which effect of deforestation reduces biodiversity?

(A) More soil nutrients
(B) Increased rainfall locally
(C) Larger forest area
(D) Loss of habitats and food sources

Q57. Which practice helps conserve fish stocks?

(A) Catching juveniles before they can breed
(B) Using fine nets in breeding grounds
(C) Setting quotas and closed seasons
(D) Fishing without any limits

Biotechnology and genetic modification

Q58. Which product is made by anaerobic respiration in a fermenter using yeast?

(A) Insulin
(B) Ethanol for biofuel
(C) Penicillin directly in this context, when the other conditions are taken into account
(D) Cheese enzymes

Q59. Which benefit is claimed for genetically modified crops that resist insects?

(A) Reduced need for insecticide spraying
(B) Higher water pollution
(C) Lower crop yields always
(D) More land clearance needed

Q60. Which concern is raised about genetically modified organisms?

(A) They cannot be grown outdoors
(B) They always cause allergies
(C) They are identical to wild types
(D) Modified genes could spread to wild relatives

Answer Key

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

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-17/