IGCSE Biology Practice Test 10

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 is shown when a bacterium divides into two?

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

Q2. Which feature is shared by all arthropods?

(A) A soft unsegmented body
(B) A shell made of calcium carbonate
(C) Jointed legs and an exoskeleton
(D) Four limbs and lungs

Q3. Which kingdom includes multicellular organisms that photosynthesise?

(A) Animalia
(B) Plantae
(C) Fungi
(D) Protoctista only

Organisation of the organism

Q4. Which structure is an organ system in a plant?

(A) A single xylem vessel in the stem
(B) A chloroplast
(C) A palisade cell
(D) A shoot with stem, leaves and buds

Q5. Which cell adaptation helps a sperm cell reach and fertilise an egg?

(A) A large vacuole for storing nutrients and waste products
(B) Many chloroplasts
(C) A flagellum and many mitochondria for energy
(D) A thick cell wall

Q6. Which tissue transports sugars in a plant stem?

(A) Epidermis
(B) Cortex
(C) Mesophyll
(D) Phloem

Movement into and out of cells

Q7. Which process moves glucose from the gut into blood capillaries in the villi?

(A) Diffusion down a concentration gradient
(B) Active transport only in the colon after digestion
(C) Osmosis through the wall
(D) Transpiration

Q8. Which factor would slow osmosis into a potato cylinder?

(A) A higher water potential outside the potato cells
(B) A lower water potential outside the cells
(C) A larger surface area
(D) A thinner cylinder

Q9. In which situation is active transport essential?

(A) Oxygen entering a lung capillary from alveoli
(B) Water entering a root hair by osmosis
(C) Carbon dioxide leaving a leaf
(D) Ions entering a root from dilute soil water

Biological molecules

Q10. Which molecule is a disaccharide formed from two glucose units?

(A) Maltose
(B) Starch
(C) Cellulose
(D) Glycerol

Q11. Which test result shows that a food contains protein?

(A) Blue-black with iodine
(B) Brick-red with Benedict's solution
(C) Purple with biuret solution
(D) Milky emulsion with ethanol

Q12. Which statement about water as a biological molecule is correct?

(A) It is a poor solvent
(B) It is a solvent for many substances in cells
(C) It cannot take part in reactions inside cells
(D) It is stored as starch

Enzymes

Q13. Which enzyme digests proteins in the small intestine at alkaline pH?

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

Q14. A student plots enzyme activity against temperature and finds a peak at 37 degrees Celsius. What is this temperature?

(A) The denaturation point only
(B) The optimum temperature
(C) The freezing point
(D) The boiling point

Q15. Which statement explains why enzymes are specific?

(A) They are large molecules made of many amino acids joined together
(B) They dissolve in water
(C) Only a substrate with a matching shape fits the active site
(D) They work in all organisms

Plant nutrition

Q16. Which condition is needed for a leaf to produce starch in a photosynthesis experiment?

(A) Light, carbon dioxide and chlorophyll
(B) Darkness and oxygen only, without any light
(C) Water and soil only
(D) Heat without light

Q17. A plant is given extra nitrate fertiliser. Which growth effect is expected?

(A) Yellow leaves and stunted growth in all plants
(B) Improved leaf growth and greener leaves
(C) No change in any plant
(D) Loss of roots only

Q18. Which statement about limiting factors is correct?

(A) Increasing a limiting factor increases the rate
(B) Limiting factors only affect animals
(C) Light is never a limiting factor
(D) Temperature has no effect on photosynthesis in plants

Human nutrition

Q19. Which part of the digestive system absorbs water from undigested food?

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

Q20. Which diet problem is linked to eating too much saturated fat and too little exercise?

(A) Scurvy
(B) Rickets
(C) Coronary heart disease
(D) Anaemia from lack of iron in the diet

Transport in plants

Q21. Which tissue is damaged if a ring of bark is removed from a tree stem?

(A) Xylem only
(B) Phloem
(C) Epidermis only
(D) Pith only

Q22. Which adaptation reduces water loss from a leaf in a dry habitat?

(A) Many stomata on the upper surface of the leaf
(B) Thin cuticle
(C) Large flat leaves
(D) Thick waxy cuticle and sunken stomata

Transport in animals

Q23. Which heart valve prevents blood flowing back from the left ventricle into the left atrium?

(A) Bicuspid valve
(B) Semilunar valve in the aorta
(C) Tricuspid valve
(D) Valve in the vena cava

Q24. Which statement about capillaries is correct?

(A) They have thick muscular walls
(B) They contain valves to prevent backflow of blood to the heart
(C) They allow exchange by diffusion through thin walls
(D) They carry blood at high pressure

Diseases and immunity

Q25. How is HIV transmitted?

(A) By coughing in the same room as an infected person
(B) Through blood and sexual contact with infected fluids
(C) By sharing food
(D) By mosquito bites in all cases

Q26. Which statement about the immune response to a first infection is correct?

(A) Antibodies are made instantly without any delay at all in the body
(B) Memory cells are made before infection
(C) No response occurs
(D) Antibody production is slow at first, then memory cells remain

Q27. Which treatment is used against a bacterial disease?

(A) Antibiotics
(B) Antiviral drugs only
(C) Vaccination after cure only
(D) Painkillers that kill bacteria

Gas exchange in humans

Q28. Which part of the breathing system is lined with cilia and mucus?

(A) Alveolus
(B) Diaphragm
(C) Trachea and bronchi
(D) Pleural membrane around the lungs

Q29. What is the percentage of oxygen in inhaled air, approximately?

(A) 21 percent
(B) 16 percent
(C) 4 percent
(D) 0.04 percent

Q30. Which adaptation of the lungs gives a large area for gas exchange?

(A) A single large air sac
(B) Thick alveolar walls
(C) Few capillaries
(D) Millions of alveoli

Respiration

Q31. Which statement about anaerobic respiration in yeast is correct?

(A) It produces lactic acid
(B) It produces ethanol and carbon dioxide
(C) It needs oxygen
(D) It releases more energy than aerobic respiration

Q32. Which experiment shows that oxygen is used up during respiration?

(A) Limewater turning milky
(B) A thermometer showing a rise
(C) A decrease in oxygen shown by a sensor or indicator
(D) A leaf turning blue-black with iodine solution after testing

Q33. Why do athletes breathe heavily after a sprint?

(A) To repay the oxygen debt from anaerobic respiration
(B) To remove excess oxygen from the blood quickly after exercise
(C) To cool the lungs
(D) To increase carbon dioxide storage

Excretion in humans

Q34. Which part of the kidney tubule is responsible for most reabsorption?

(A) Glomerulus in the kidney cortex
(B) Proximal convoluted tubule
(C) Bladder
(D) Urethra

Q35. A person drinks very little water on a hot day. What will the kidneys produce?

(A) A large volume of dilute urine
(B) No urine at all for days
(C) Blood with extra urea only
(D) A small volume of concentrated urine

Q36. Which substance is at a higher concentration in renal artery blood than in renal vein blood because kidney cells use it in respiration?

(A) Carbon dioxide
(B) Plasma proteins
(C) Oxygen
(D) Water

Coordination and response

Q37. In bright light, what happens to the pupil?

(A) It dilates to let in more light
(B) It stays the same size
(C) It closes completely
(D) It constricts to reduce light entering

Q38. Which gland releases thyroxine?

(A) Thyroid gland
(B) Pancreas
(C) Adrenal gland
(D) Pituitary gland only

Q39. Which response helps a plant shoot grow away from gravity?

(A) Phototropism
(B) Thigmotropism
(C) Negative geotropism
(D) Chemotropism

Drugs

Q40. Which statement about smoking during pregnancy is correct?

(A) It has no effect on the baby
(B) It reduces oxygen supply and can cause low birth weight
(C) It improves lung development
(D) It prevents infection

Q41. Which drug is an example of a painkiller that can be misused?

(A) Morphine
(B) Vitamin C
(C) Insulin
(D) Penicillin

Q42. Why does alcohol impair driving ability?

(A) It sharpens vision
(B) It slows reactions and reduces coordination
(C) It increases concentration
(D) It removes tiredness permanently

Reproduction

Q43. Which event occurs at ovulation?

(A) Fertilisation in the uterus
(B) Implantation of the embryo
(C) Birth of a baby
(D) Release of an egg from the ovary

Q44. Which seed structure stores food for germination?

(A) Testa
(B) Plumule
(C) Cotyledon
(D) Radicle

Q45. Which statement about wind-pollinated flowers is correct?

(A) They have large colourful petals
(B) They produce sweet nectar
(C) They produce large amounts of light pollen and feathery stigmas
(D) They open only at night

Inheritance

Q46. Which process ensures that chromosome number stays constant from generation to generation?

(A) Mitosis only
(B) Fertilisation only
(C) Growth only
(D) Meiosis followed by fertilisation

Q47. A gene has alleles R (red) and r (white), with R dominant. What colour are Rr flowers?

(A) Red
(B) White
(C) Pink
(D) Half red and half white

Q48. Which statement about codominance is correct?

(A) One allele is always hidden
(B) Both alleles are expressed in the phenotype
(C) Only the maternal allele is expressed
(D) No protein is produced

Variation and selection

Q49. Which graph shape is typical for continuous variation?

(A) Separate bars with gaps
(B) Two distinct peaks only
(C) A smooth bell-shaped curve
(D) A single flat line

Q50. Which statement about evolution by natural selection is correct?

(A) Populations change over generations as allele frequencies shift
(B) Acquired traits are inherited
(C) Individuals change during their lifetime
(D) Organisms evolve because they want to change

Q51. Which source of variation is caused by reshuffling of alleles during gamete formation?

(A) Cloning
(B) Asexual reproduction
(C) Environmental change
(D) Independent assortment and crossing over in meiosis

Organisms and their environment

Q52. Which organism is a producer in a pond food web?

(A) Water flea
(B) Pondweed
(C) Fish
(D) Heron

Q53. Which process is carried out by nitrifying bacteria in soil?

(A) Fixing nitrogen gas
(B) Denitrification
(C) Photosynthesis
(D) Converting ammonium compounds to nitrates

Q54. Which factor is an abiotic factor in a woodland?

(A) Number of predators
(B) Competition for food
(C) Soil pH
(D) Disease spread

Human influences on ecosystems

Q55. Which farming method reduces soil erosion?

(A) Contour ploughing and planting trees as windbreaks
(B) Ploughing up and down steep slopes
(C) Removing all hedgerows
(D) Leaving soil bare all winter

Q56. Which pollutant causes damage to the ozone layer?

(A) Carbon dioxide
(B) Chlorofluorocarbons
(C) Sulfur dioxide only
(D) Methane only

Q57. Which action is an example of sustainable use of a resource?

(A) Fishing a stock to extinction
(B) Cutting all trees in a forest at once
(C) Replanting trees after harvesting timber
(D) Draining a wetland for building

Biotechnology and genetic modification

Q58. Which product is made by fermentation using bacteria?

(A) Bread from wheat flour only
(B) Wine from grapes only
(C) Paper from wood pulp
(D) Cheese from milk

Q59. Which statement about genetically modified bacteria producing insulin is correct?

(A) Bacteria are given the human insulin gene and produce insulin as they grow
(B) Bacteria digest insulin in the gut
(C) Insulin is extracted from human pancreases only
(D) Bacteria change into human cells

Q60. Which concern is raised about antibiotic resistance genes in genetically modified crops?

(A) They improve crop taste
(B) They might transfer to bacteria and increase resistance
(C) They make crops need more water
(D) They stop photosynthesis

Answer Key

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

Q10: A	Q20: C	Q30: D	Q40: B	Q50: A	Q60: B

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-10/