IGCSE Biology Practice Test 16

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 release of energy from food substances inside cells?

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

Q2. A scientist groups organisms by shared features into progressively smaller groups. Which sequence is in the correct order from largest to smallest?

(A) Genus, family, order, class
(B) Species, genus, family, order in this context, when the other conditions are taken into account
(C) Class, order, family, genus
(D) Kingdom, phylum, class, order

Q3. Which pair of names correctly shows the binomial system for humans?

(A) Homo sapiens
(B) sapiens Homo
(C) Homo Sapiens
(D) human sapiens

Organisation of the organism

Q4. Which level of organisation comes between a tissue and an organ system?

(A) Cell
(B) Organelle
(C) Organ
(D) Organism

Q5. Which cell structure controls what enters and leaves the cell?

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

Q6. Which organelle is the site of protein synthesis in a cell?

(A) Ribosome
(B) Vacuole
(C) Chloroplast
(D) Cell wall

Movement into and out of cells

Q7. Which process describes the net movement of particles from a region of higher concentration to a region of lower concentration?

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

Q8. A plant cell is placed in pure water. What happens to the cell?

(A) It shrinks as water leaves in this context, when the other conditions are taken into account
(B) It becomes turgid as water enters
(C) It bursts as water enters
(D) It stays unchanged

Q9. Which feature increases the rate of diffusion across a surface?

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

Biological molecules

Q10. Which test gives a brick-red precipitate with a reducing sugar when heated?

(A) Iodine test
(B) Benedict's test
(C) Biuret test
(D) Emulsion test in this context, when the other conditions are taken into account

Q11. Which molecule is formed when many glucose units join together in a plant storage carbohydrate?

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

Enzymes

Q12. What happens to most enzymes when they are heated well above their optimum temperature?

(A) They are denatured
(B) They work faster permanently
(C) They become substrates
(D) They stop being proteins

Q13. Which statement best describes how an enzyme speeds up a reaction?

(A) It lowers the activation energy

(B) It raises the activation energy in this context, when the other conditions are taken into account

(C) It is used up in the reaction

(D) It changes the products formed

Plant nutrition

Q14. Which set of conditions gives the fastest rate of photosynthesis in a leaf?

(A) Low light and low carbon dioxide in this context, when the other conditions are taken into account

(B) High light and high temperature

(C) Bright light, adequate carbon dioxide and a suitable temperature

(D) Darkness and high carbon dioxide

Q15. A leaf is tested for starch after being kept in darkness for two days and then in light for a few hours. Which result is expected?

(A) No starch in any part

(B) Starch present throughout the leaf

(C) Starch only in the veins in this context, when the other conditions are taken into account

(D) Starch only in the stalk

Human nutrition

Q16. Which organ produces bile in the human digestive system?

(A) Pancreas

(B) Stomach

(C) Gall bladder

(D) Liver

Q17. Which enzyme digests starch to maltose in the mouth and small intestine?

(A) Lipase

(B) Protease

(C) Amylase

(D) Pepsin

Q18. Which organ stores bile before it is released into the small intestine?

(A) Liver

(B) Gall bladder

(C) Pancreas

(D) Spleen

Transport in plants

Q19. What is the function of the cambium in a plant stem?

(A) It produces new xylem and phloem cells as the stem grows thicker
(B) It transports dissolved sugars from the leaves to the growing root tips of the plant
(C) It protects the stem surface
(D) It absorbs water from the soil

Q20. Which process causes most water loss from a leaf?

(A) Photosynthesis
(B) Respiration
(C) Active uptake
(D) Transpiration

Q21. Which factor increases the rate of transpiration?

(A) High humidity
(B) Low temperature
(C) Still air
(D) Moving air

Transport in animals

Q22. Which chamber of the heart pumps blood to the whole body?

(A) Left ventricle
(B) Right ventricle
(C) Left atrium
(D) Right atrium

Q23. Which chamber of the heart receives blood from the pulmonary vein?

(A) Right atrium
(B) Left atrium
(C) Right ventricle
(D) Left ventricle, which pumps blood around the whole body through the aorta

Q24. Which component of blood carries oxygen around the body?

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

Diseases and immunity

Q25. Which type of pathogen causes cholera?

(A) Virus
(B) Bacterium
(C) Fungus
(D) Protoctist

Q26. How does active immunity develop after vaccination?

(A) The body makes its own antibodies
(B) Ready-made antibodies are injected
(C) Antibiotics kill the pathogen
(D) White cells stop dividing

Q27. Which defence prevents most pathogens from entering the body through the nose?

(A) Stomach acid
(B) Skin oils
(C) Mucus and cilia
(D) Blood clotting

Gas exchange in humans

Q28. Which feature of the alveoli adapts them for efficient gas exchange?

(A) A thick wall
(B) A dry surface
(C) A single air sac
(D) A large surface area and rich blood supply

Q29. During inhalation, what happens to the diaphragm and the ribcage?

(A) Diaphragm relaxes and ribcage moves down
(B) Diaphragm flattens and ribcage moves in
(C) Diaphragm contracts and ribcage moves up and out
(D) Diaphragm contracts and ribcage moves down

Q30. Which gas diffuses from the blood into the alveoli to be breathed out?

(A) Oxygen
(B) Nitrogen
(C) Water vapour only
(D) Carbon dioxide

Respiration

Q31. In which form is energy released by respiration stored for immediate use in a cell?

(A) Glucose stored as glycogen in the cytoplasm of liver and muscle cells
(B) ATP
(C) Starch
(D) Protein

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

(A) Lactic acid
(B) Ethanol
(C) Carbon dioxide
(D) Oxygen debt

Q33. During vigorous exercise, why does breathing rate increase?

(A) To supply more oxygen and remove more carbon dioxide
(B) To reduce blood flow to muscles
(C) To store glucose in the liver
(D) To lower the heart rate

Excretion in humans

Q34. Which part of the kidney tubule reabsorbs most of the filtered glucose?

(A) Glomerulus
(B) Loop of Henle, where water is reabsorbed into the surrounding blood capillaries
(C) Collecting duct
(D) Proximal convoluted tubule

Q35. Where in the kidney does selective reabsorption of glucose take place?

(A) Glomerulus
(B) Ureter
(C) Kidney tubule
(D) Renal artery

Q36. Which substance is formed in the liver when excess amino acids are broken down?

(A) Glucose
(B) Urea
(C) Insulin
(D) Glycogen

Coordination and response

Q37. In a reflex action, what is the role of the relay neurone?

(A) It carries impulses from the receptor directly to the effector without passing through the spinal cord
(B) It connects the sensory neurone to the motor neurone in the central nervous system
(C) It detects the stimulus
(D) It carries out the response

Q38. Which sense organ contains receptors sensitive to light?

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

Q39. Which hormone lowers blood glucose concentration after a meal?

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

Drugs

Q40. Which long-term effect can heavy drinking have on the liver?

(A) It can cause cirrhosis, where liver tissue is replaced by scar tissue

(B) It permanently increases the number of red blood cells and improves oxygen transport around the body

(C) It improves coordination at any dose

(D) It increases alertness and judgement

Q41. Why does repeated heroin use lead to strong dependence?

(A) It supplies vitamins the body lacks

(B) It strengthens the immune system

(C) It alters brain chemistry so the body craves further doses

(D) It replaces natural hormones permanently

Q42. Which statement about antibiotics is correct?

(A) They kill bacteria but do not kill viruses

(B) They kill viruses but do not kill bacteria in this context, when the other conditions are taken into account

(C) They kill all pathogens equally

(D) They prevent all future infections

Reproduction

Q43. Which method of reproduction produces genetically identical offspring?

(A) Cross-pollination

(B) Asexual reproduction

(C) Sexual reproduction

(D) Self-pollination only

Q44. In a flowering plant, where does fertilisation take place?

(A) In the anther

(B) On the stigma

(C) In the petal

(D) In the ovule

Q45. Which structure in the human female produces eggs and oestrogen?

(A) Uterus

(B) Cervix

(C) Oviduct

(D) Ovary

Inheritance

Q46. How many chromosomes are there in a normal human body cell?

(A) 23, the number found in a human gamete after meiosis

(B) 92

(C) 46

(D) 44

Q47. A person has the genotype Bb for a trait where B is dominant. Which phenotype is shown?

(A) The dominant phenotype
(B) The recessive phenotype
(C) A blend of both phenotypes
(D) Neither phenotype

Q48. Which process halves the chromosome number when gametes are formed?

(A) Mitosis
(B) Meiosis
(C) Fertilisation
(D) Cloning

Variation and selection

Q49. Which type of variation is caused only by genes and shows distinct categories?

(A) Discontinuous variation
(B) Continuous variation
(C) Environmental variation in this context, when the other conditions are taken into account
(D) Acquired variation

Q50. Which process increases variation within a population?

(A) Asexual reproduction
(B) Mutation
(C) Cloning
(D) Inbreeding

Q51. How does natural selection lead to better-adapted populations over time?

(A) Individuals choose useful mutations
(B) All individuals survive equally
(C) The environment changes genes directly
(D) Better-adapted individuals survive and pass on their alleles

Organisms and their environment

Q52. In a food web, what is the role of a producer?

(A) It eats herbivores
(B) It breaks down dead material
(C) It makes its own food by photosynthesis
(D) It feeds only on decomposers

Q53. Which level of a food chain receives the least energy?

(A) Producer
(B) Primary consumer
(C) Secondary consumer
(D) Top consumer

Q54. Why does energy decrease at each trophic level in a food chain?

(A) Producers stop photosynthesis at higher levels
(B) Consumers store all the energy they take in
(C) Energy is lost as heat in respiration and in waste
(D) Decomposers create new energy for consumers

Human influences on ecosystems

Q55. Which human activity is the main cause of increased atmospheric carbon dioxide in recent decades?

(A) Reforestation
(B) Burning fossil fuels
(C) Recycling paper
(D) Desalination

Q56. Which human activity increases carbon dioxide in the atmosphere?

(A) Burning fossil fuels for energy and transport, releasing stored carbon
(B) Planting large areas of forest that absorb carbon dioxide during photosynthesis each year
(C) Loss of species from overfishing
(D) Warming of lakes by sunlight

Q57. Which conservation measure helps protect an endangered species?

(A) Draining its wetland habitat
(B) Creating a protected reserve for its habitat
(C) Introducing a new predator
(D) Harvesting more individuals

Biotechnology and genetic modification

Q58. Which organism is used in fermenters to produce insulin by genetic modification?

(A) Bacteria
(B) Viruses
(C) Fungi that cause disease
(D) Green algae

Q59. What is a genetically modified crop?

(A) A crop grown without fertiliser
(B) A crop bred only by cross-pollination
(C) A crop stored in a seed bank
(D) A crop with a gene transferred from another organism

Q60. Which condition is controlled in a fermenter to maximise product yield?

(A) Complete darkness at all times
(B) Random changes in acidity
(C) Temperature, pH and oxygen supply
(D) Absence of any nutrients

Answer Key

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

Worked explanations for all 60 questions: quaidianpoint.com/igcse-biology-practice-test-16/