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Class 9 Biology Chapter 1 Advanced MCQ Quiz Online | Level 3

Class 9 Biology · Chapter 1: The Science of Biology

Name: _____ Date: _____ Score: _____ / 60

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1. Ayesha notices that the leaves in her garden are green while the flowers are many different colours. She asks, "Why are they different?" Which step of science has she taken?

A) Performing an experiment
B) Asking a question
C) Forming a law
D) Analysing results

2. A student is told that a human body is about 70 percent water and a jellyfish is over 90 percent water. What common idea does this support?

A) Living things are made only of water
B) Humans and jellyfish belong to the same species
C) Living things have a common origin in water
D) Water is not needed for life

3. A researcher wants to know how the stomach, intestine and liver work together to digest food. Which branch of biology should she study?

A) Physiology
B) Taxonomy
C) Paleontology
D) Embryology

4. A medical student dissects a heart to see its chambers and valves. Which branch is he practising?

A) Cytology
B) Ecology
C) Anatomy
D) Genetics

5. A botanist compares the size and shape of leaves of two mango varieties. Which branch is she using?

A) Morphology
B) Immunology
C) Pharmacology
D) Pathology

6. A laboratory technician looks at a stained slice of intestine under a microscope to see how its tissues are arranged. Which branch is this?

A) Ecology
B) Histology
C) Taxonomy
D) Marine biology

7. A farmer sees that his red-flowered plants always produce red-flowered offspring. Which branch of biology explains this?

A) Embryology
B) Physiology
C) Genetics
D) Morphology

8. A scientist follows how a single fertilized egg of a frog changes step by step into a tadpole. Which branch is she studying?

A) Embryology
B) Cytology
C) Taxonomy
D) Pathology

9. Hikers find the stone imprint of an ancient shell in a mountain rock. Which branch of biology would study this imprint?

A) Immunology
B) Ecology
C) Pharmacology
D) Paleontology

10. A team discovers a new species of frog and gives it a two-part scientific name. Which branch of biology is involved?

A) Taxonomy
B) Physiology
C) Embryology
D) Cytology

11. Villagers notice that fish are dying in a lake after a factory begins releasing waste. A scientist studies how the lake organisms depend on their environment. Which branch is she using?

A) Histology
B) Genetics
C) Ecology
D) Anatomy

12. A diver studies dolphins, sponges and crustaceans along the coast of Karachi. Which branch of biology does this belong to?

A) Marine biology
B) Paleontology
C) Embryology
D) Immunology

13. A child receives a polio vaccine. After some time, his body can fight the polio virus. Which concept explains this?

A) Heredity
B) Immunity
C) Digestion
D) Incubation

14. A pharmacist studies how aspirin acts on the body to reduce pain and fever. Which branch is she working in?

A) Pathology
B) Cytology
C) Pharmacology
D) Taxonomy

15. A laboratory finds that a patient's tissue sample shows signs of a disease. The doctor then identifies the disease. Which branch is mainly involved?

A) Pathology
B) Ecology
C) Morphology
D) Biogeography

16. An engineer notices that the way a human arm lifts a load is similar to how a lever works. Which science is linked to biology in this observation?

A) Chemistry
B) Statistics
C) Physics
D) Geography

17. A researcher studies the chemical reactions by which a plant converts sunlight into food. Which science links biology with chemistry here?

A) Biochemistry
B) Biogeography
C) Biophysics
D) Bio-economics

18. A scientist collects data on the weights of 1,000 newborn babies and applies statistical rules to analyse it. Which science is she using?

A) Biotechnology
B) Biostatistics
C) Biophysics
D) Biochemistry

19. A team uses computer simulations and mathematical models to locate DNA fragments on chromosomes. Which science is this?

A) Computational biology
B) Biogeography
C) Bio-economics
D) Biophysics

20. A student wants to know why snow leopards live in the mountains of northern Pakistan and not in the plains. Which science studies this?

A) Biochemistry
B) Biostatistics
C) Bio-economics
D) Biogeography

21. A company inserts a human gene into bacteria so that they produce a useful medicine. Which science is this?

A) Biotechnology
B) Taxonomy
C) Pathology
D) Morphology

22. A researcher calculates how much money Pakistan earns from exporting rice and fish. Which science is she using?

A) Biophysics
B) Biochemistry
C) Bio-economics
D) Biogeography

23. Bilal wants to treat patients by removing damaged organs and replacing defective parts. Which career should he choose?

A) Horticulture
B) Surgery
C) Forestry
D) Fisheries

24. Sara wants to work on fish farming and fishery management to support Pakistan's economy. Which field should she choose?

A) Forestry
B) Horticulture
C) Fisheries
D) Animal husbandry

25. Usman studies insects that damage wheat crops. What is his profession called?

A) Agricultural entomologist
B) Veterinarian
C) Forester
D) Horticulturist

26. Hina is trained to care for and breed buffaloes and goats. Which field is she in?

A) Fisheries
B) Forestry
C) Animal husbandry
D) Horticulture

27. Zain loves gardening and wants to produce better varieties of roses. Which field suits him?

A) Forestry
B) Fisheries
C) Surgery
D) Horticulture

28. A doctor, a psychologist, a sociologist and a nurse team up to study how diseases spread in a city. What does this show?

A) Science is a collaborative field
B) Science depends on one expert only
C) Diseases have no causes
D) Hypotheses are not needed

29. A scientist uses computer skills to analyse huge amounts of biological data. Which new career does she belong to?

A) Astrobiologist
B) Cryobiologist
C) Bioinformatician
D) Forester

30. A researcher studies how living organisms behave at very low temperatures. What is her profession?

A) Astrobiologist
B) Cryobiologist
C) Biomedical engineer
D) Bioinformatician

31. A teacher asks a student to list observations about a cat. Which of these is a quantitative observation?

A) The cat has white fur
B) The cat has a soft voice
C) The cat looks calm
D) The cat weighs 4 kg

32. A student writes "The leaf is dark green and smooth." What type of observation is this?

A) Quantitative
B) Deduction
C) Qualitative
D) Experiment

33. A student proposes: "Plants kept in sunlight grow taller than plants kept in the dark." What is this statement?

A) A law
B) A theory
C) An observation
D) A hypothesis

34. A student says, "If plants need light to grow, then plants kept in the dark should grow less." Which step is this?

A) Deduction
B) Observation
C) Result
D) Recognition of the problem

35. In the plant experiment, two sets of plants are used. One set is kept in sunlight and the other is kept in the dark with all other conditions the same. What is the set kept in normal conditions (sunlight) called?

A) Control group
B) Hypothesis
C) Result
D) Vector

36. After the experiment, the plants kept in the dark are shorter. The student writes the measured heights in a table. Which step is this?

A) Recognition of the problem
B) Making a hypothesis
C) Summarizing the results
D) Making a deduction

37. A scientist's experiment shows that her hypothesis was wrong. What should she do next?

A) Ignore the result
B) Develop a new hypothesis and test it
C) Call it a law
D) Hide the data

38. A well-tested idea explains many observations in different experiments and is supported by a large body of evidence. What is it called?

A) Theory
B) Hypothesis
C) Observation
D) Deduction

39. A theory has been verified many times and applied widely, like Mendel's work on inheritance. What can it become?

A) A hypothesis
B) A law
C) An observation
D) A deduction

40. A new research method gives results that do not fit a widely accepted theory. What may scientists do?

A) Modify or reject the theory
B) Never question it
C) Delete the new data
D) Turn it into a law

41. Before 1882, people knew malaria had been a problem since ancient times, but nobody knew its cause. Which step of the biological method was this?

A) Experiment
B) Recognition of the problem
C) Result
D) Deduction

42. Doctors in the 19th century saw that quinine cured malaria and that patients' blood contained Plasmodium. Which step were they carrying out?

A) Observation
B) Experiment
C) Reporting
D) Deduction

43. Laveran suggested that Plasmodium causes malaria. Which step was this?

A) Observation
B) Hypothesis
C) Experiment
D) Result

44. In a test of Laveran's idea, 100 malaria patients and 100 healthy persons had their blood examined. Which group was the control?

A) The 100 malaria patients
B) The mosquitoes
C) The 100 healthy persons
D) The doctors

45. In that experiment, 7 healthy persons had Plasmodium in their blood but no symptoms, and later fell ill. What explains this?

A) They were immune to Plasmodium
B) They were in the incubation period
C) They were in the control group by mistake
D) The microscope was faulty

46. People knew that marshy areas had more malaria, yet drinking marsh water did not cause it. A scientist concluded that something must carry Plasmodium to the marsh. Which step is this?

A) Recognising the problem of how Plasmodium reaches humans
B) Reporting results
C) Making a law
D) Doing a control experiment

47. King noted that people sleeping under fine nets had less malaria, and people sleeping outdoors had more. What did he suggest?

A) Marsh water causes malaria
B) Smoke causes malaria
C) Quinine causes malaria
D) Mosquitoes transmit Plasmodium

48. Ross allowed a female Anopheles to bite a malaria patient, then killed it some days later and found Plasmodium multiplying in its stomach. What did this support?

A) Plasmodium lives only in marsh water
B) Plasmodium can be present in mosquitoes
C) Mosquitoes make quinine
D) Plasmodium kills mosquitoes

49. Ross let Culex mosquitoes bite sick sparrows and then healthy sparrows, which became ill. What did this show?

A) Sparrows cause malaria
B) Mosquitoes can spread the disease from sick to healthy hosts
C) Mosquitoes only bite humans
D) Culex never carries parasites

50. An Italian biologist allowed an Anopheles mosquito to bite a malaria patient and later bite a healthy man, who then fell ill. Why was this important?

A) It tested the hypothesis directly on human beings
B) It proved birds cannot get malaria
C) It showed Culex spreads human malaria
D) It showed malaria has no cause

51. After these experiments, the results were announced worldwide and helped control malaria. Which step is this?

A) Making a hypothesis
B) Making a deduction
C) Reporting the results
D) Observation

52. A mosquito is described as a vector of malaria. What does this mean?

A) It is a drug that cures malaria
B) It is the virus that causes malaria
C) It is a type of Plasmodium
D) It carries the parasite and transfers it to another organism

53. A mosquito pierces the skin of a person. Why does the blood not clot in its food canal?

A) The mosquito's saliva prevents clotting
B) The mosquito's wings stop clotting
C) The skin is cold
D) The blood has no platelets

54. A family lives near a stagnant pond and many members get malaria during the rainy season. Which action will best reduce the problem?

A) Boiling marsh water for drinking
B) Using more quinine as a preventive
C) Stopping mosquito breeding and avoiding bites
D) Planting more crops near the pond

55. A patient has high fever, bleeding from the nose, blood in urine and an enlarged liver. Which disease and vector are most likely involved?

A) Malaria and Anopheles
B) Dengue and Aedes aegypti
C) Malaria and Culex
D) Dengue and Culex

56. A doctor tells a person who has recovered from dengue to be extra careful about mosquito bites. Why?

A) A second attack can be more serious and dangerous
B) The disease cannot return
C) Mosquitoes only bite recovered people
D) Dengue spreads by drinking water

57. Hospitals have a drug to treat malaria but none that specifically targets the dengue virus. What is the best way to deal with dengue?

A) Use quinine
B) Rely on antibiotics only
C) Prevent mosquito bites and mosquito breeding
D) Ignore the symptoms

58. A student claims that mosquitoes cause malaria by themselves. Which correction is most accurate?

A) Mosquitoes make Plasmodium in their wings
B) Mosquitoes cause malaria by their saliva alone
C) Mosquitoes are drugs for malaria
D) Plasmodium causes malaria and mosquitoes carry it from person to person

59. A school group wants to study climate change in teams: one on causes, one on effects and one on solutions, and then prepares a joint paper. What does this activity demonstrate?

A) Science is a collaborative field
B) Science never needs teamwork
C) Deductions are not needed
D) Observation is unnecessary

60. A student wants to investigate the effect of different factors on the activity of salivary amylase. What is the most appropriate first step?

A) Report the results
B) Recognise and state the biological problem
C) Make a law
D) Publish a theory

Answer key

1-B 2-C 3-A 4-C 5-A 6-B 7-C 8-A 9-D 10-A

11-C 12-A 13-B 14-C 15-A 16-C 17-A 18-B 19-A 20-D

21-A 22-C 23-B 24-C 25-A 26-C 27-D 28-A 29-C 30-B

31-D 32-C 33-D 34-A 35-A 36-C 37-B 38-A 39-B 40-A

41-B 42-A 43-B 44-C 45-B 46-A 47-D 48-B 49-B 50-A

51-C 52-D 53-A 54-C 55-B 56-A 57-C 58-D 59-A 60-B