



Attempt questions first; check the separate key afterward. Use labelled diagrams where asked. Give scientific reasons; answer key covers closed questions.

A. Very short answers - 1 mark each

1. Who proposed the five-kingdom classification?
2. Which kingdom contains prokaryotes in that system?
3. Name the chief fungal cell-wall polysaccharide.
4. What is a mycelium?
5. Name the photosynthetic partner in a lichen.
6. Do viroids possess a protein coat?
7. Name the protein coat of a virus.
8. Are viruses obligate intracellular parasites?

B. Short answers / practice - 2 marks each

9. State five criteria used in Whittaker's classification.
10. Compare archaebacteria and eubacteria.
11. Explain the importance of heterocysts in some cyanobacteria.
12. Describe the nutritional diversity of bacteria.
13. Why are mycoplasmas unusual among cellular organisms?
14. Compare chrysophytes and dinoflagellates.
15. Explain the characteristic cell covering of diatoms.
16. Why are diatom deposits useful commercially?
17. Describe the nutrition of euglenoids under changing light conditions.
18. Compare slime moulds with true fungi.
19. Classify protozoans into four traditional groups with examples.
20. Differentiate septate and coenocytic hyphae.

C. Application / reasoning - 3 marks each

21. Name the fungus commonly used in bread making.
22. Name the asexual spores of Rhizopus.
23. Where are ascospores formed?
24. Where are basidiospores formed?
25. Explain why some fungi were placed in Deuteromycetes.
26. Describe plasmogamy, karyogamy and meiosis in fungal reproduction.
27. Why are lichens useful indicators of air quality?
28. Compare viruses, viroids and prions.
29. Name the nucleic acid in tobacco mosaic virus.
30. Can an isolated virus reproduce in a nutrient broth without living host cells?
31. Explain why the position of viruses at the living/nonliving boundary is debated.

D. Extended practice - 5 marks each

32. Compare Monera, Protista and Fungi in cell type, organisation and nutrition.
33. Prepare a comparison of major fungal groups with spores and examples.
34. Explain lichen symbiosis and distinguish it from mycorrhiza.
35. Describe viral structure and host dependence, using a bacteriophage and TMV as examples.

ANSWER KEY - Numerical / closed questions

- 1) R.H. Whittaker. 2) Monera. 3) Chitin. 4) A mass/network of hyphae. 5) Alga or cyanobacterium. 6) No. 7) Capsid. 8) Yes. 21) *Saccharomyces cerevisiae*. 22) Sporangiospores. 23) Inside asci. 24) Externally on basidia. 29) RNA. 30) No.