

Energy, Ecosystems and Sustainability

- 1) Define the following terms (18);
 - a. Succession
 - b. Pioneer species
 - c. Climax community
 - d. Seral stage
 - e. Ecosystem
 - f. Community
 - g. Population
 - h. Intraspecific competition
 - i. Interspecific competition
 - j. Biodiversity
 - k. Species richness
 - l. Species evenness
 - m. Niche
 - n. Conservation
 - o. Sustainability
 - p. Biotic factors
 - q. Abiotic factors
 - r. Habitat
- 2) Describe the process of primary succession? (5)
- 3) Compare primary and secondary succession. (3)
- 4) Using a labelled diagram, describe and explain the nitrogen cycle. (6)
- 5) Describe the process of eutrophication. (5)
- 6) What are the differences between natural and artificial fertilisers? (3)
- 7) How do fertilisers help to increase crop productivity?(3)
- 8) What are the 3 main elements found in most fertilisers? (3)
- 9) What are the differences between gross and net primary productivity? (2)
- 10) How can the net primary productivity be increased? (3)
- 11) What are the differences between random and systematic sampling? (2)
- 12) Describe and explain how to use the following (4);
 - a. Belt transect

- b. Line transect
- c. Quadrat
- d. Point frame

- 13) What are the roles of microorganisms in an ecosystem? (6)
- 14) Describe the carbon cycle. (4)
- 15) Explain the phosphorus cycle. (4)
- 16) Why do organisms need nitrogen and phosphorus? (3)
- 17) What are the differences between conservation and sustainability? (3)
- 18) How have human activities impacted the ecosystem and biodiversity? (4)
- 19) What is the carrying capacity of a population? (2)
- 20) What is a limiting factor? (1)
- 21) What are the limitations of pyramids of number and biomass? (2)