2 MARKS EACH

1. State what does 'standing crop' and 'standing state' of a trophic level represent.
2. What is the role of first trophic level in a food chain?
3. Name the type of food chain responsible for the flow of a larger fraction of energy in an aquatic and a terrestrial ecosystem respectively. Mention one difference between the two food chains.
4. List the factors on which primary productivity depends.
5. Give an example each of
   a. Terrestrial and Aquatic ecosystem b. Natural and man-made ecosystem
6. What controls the rate of decomposition? Explain with an example.
7. Define trophic levels with the help of food chain.
8. What are two possible shapes of ecological pyramid of biomass? Support your answer with an example.
9. Construct a grazing food chain and a detritus food chain using the following, with 5 links each: Earthworm, bird, snake, vulture, grass, grasshopper, frog, decaying plant matter.

3 MARKS EACH

1. List three limitations of ecological pyramids.
2. Construct a pyramid of biomass starting with phytoplankton. Label 3 trophic levels. Is this pyramid upright or inverted? Why?
3. Define productivity. Name two forms of productivity. How are they related?
4. 'Energy flow in an ecosystem is unidirectional' Justify the statement.
5. Healthy ecosystems are the base of wide range of Ecosystem services. Justify
6. Construct an ideal pyramid of energy when 2,000,000 joules of sunlight is available. Label all its trophic level and also write their energy content.
7. Give an account of factors affecting the rate of decomposition.

3 MARKS EACH

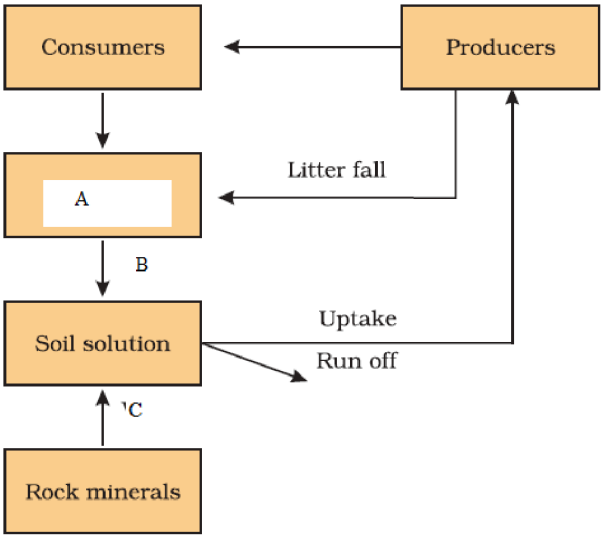
1. Here is a list of some organisms

   Grass, Grasshopper, frog, snake, eagle, peacock, lizard, birds

   a. Create a food chain using these organisms and it should have five trophic levels.

   b. Which member of food chain will have highest energy content? Why?

   c. If chemical enters in a food chain then which trophic level will have highest concentration of these chemicals? Why?



2.

ii. Label parts A and B

iii. What is the process C shown here?

3. i. What are two different ways in which standing crop of a trophic level can be measured?

ii. Which of these two methods is better?

iii. Give reason for your choice in part ii.

4. i. Arrange following in a sequence to obtain correct order of the process decomposition.
Leaching, fragmentation, humification, mineralization, catabolism

ii. What is the product of humification? Define it.

iii. Name the process by which water-soluble inorganic nutrients go down into the soil horizon.

5 MARKS EACH

1. Describe the process of decomposition of detritus under the following heads fragmentation, leaching, catabolism, humification and mineralization.

2. Taking an example of a Pond ecosystem, explain how all the four components of an ecosystem function as a unit.

4. a) What is Resource partitioning?

b) What is 10% law in ecology terms?

c) What is 'Standing State' the term used in nutrient cycling?

5. (a) Differentiate between primary and secondary ecological successions.

(b) Explain the different steps of xerarch succession occurring in nature.