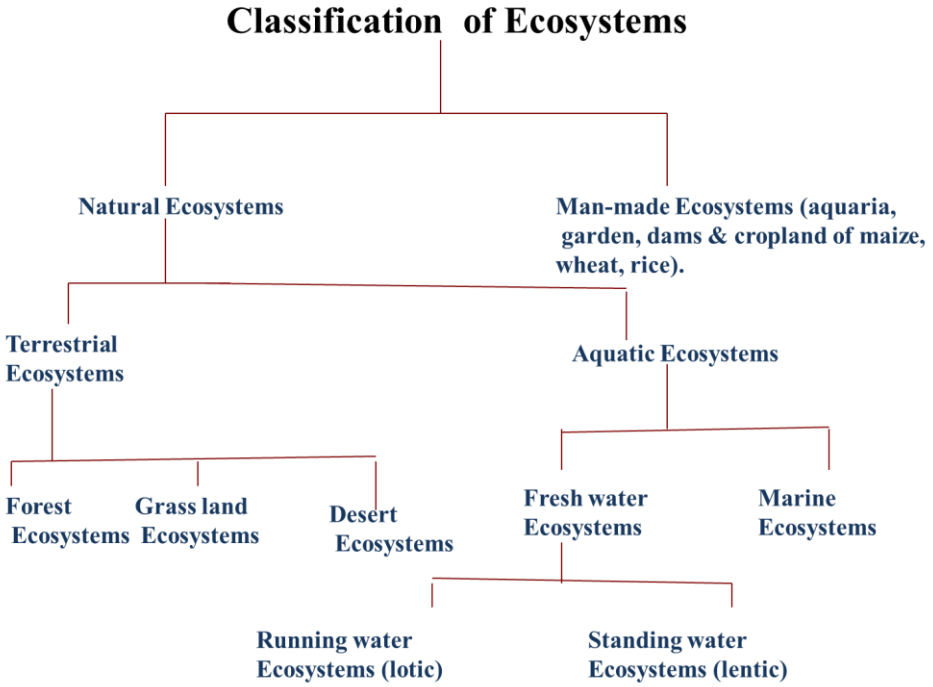
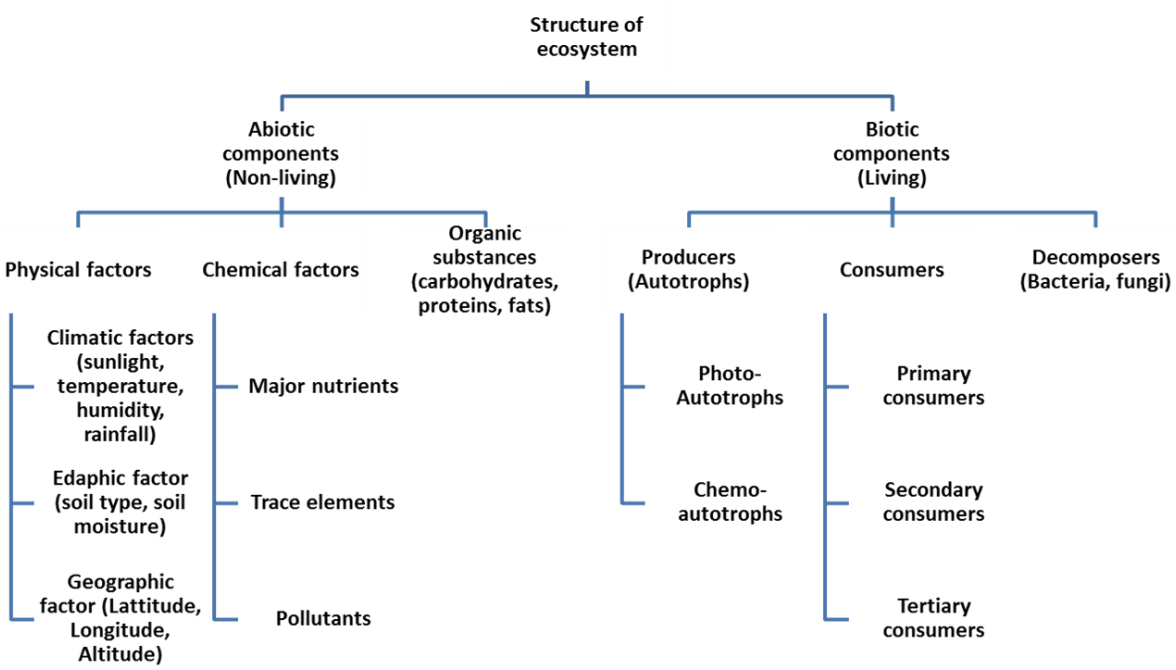
Points to remember

Unit – II-1 (CHE120)

1. Ecosystem is a system that arises from the integration of all living and non-living factors of the environment.
2. Classification of ecosystem:



3. Structure of ecosystem:



4. Limiting factors: Limiting factors are environmental conditions that limit the growth, abundance, or distribution of an organism or a population of organisms in an ecosystem. E.g., food supply, water, shelter, space etc.
5. Functional components of ecosystem: Food chain, food web, trophic level, energy flow, nutrient cycles, primary and secondary production.
6. Food chain: The transfer of food energy from the source through a series of organisms by a sequence of eating and being eaten up is referred as food chain.
7. Food web: The network formed by several food chains that are linked together is called a food web.
8. Types of Food Chain: (a) Grazing Food Chain and (b) Detritus Food Chain
9. Grazing Food Chain: Food chains that start with producers.
10. Detritus Food Chain: Food chain that starts with detritus (dead organic materials).
11. Significance of food chain: maintaining and regulating the population size, Ecological balance, biomagnification.
12. Biomagnification: There are several pesticides (E.g. DDT), heavy metals and other chemicals that are non-biodegradable in nature. Such chemicals keep on passing from one trophic level to another. At each trophic level, they keep on increasing in concentration. This phenomenon is called biomagnification.
13. Ten-percent Rule of Energy: Only 10% of food energy is transferred from one trophic level to another.
14. Trophic level: The trophic level is the position that an organism occupies in a food chain.
15. Ecological Pyramid: The graphical representations of different trophic levels in an ecosystem.
16. Shapes of Ecological Pyramids: (a) Upright, (b) Inverted and (c) Spindle shaped
17. Types of Ecological Pyramids: (a) Pyramid of number, (b) Pyramid of biomass and (c) Pyramid of energy.
18. Pyramid of Number: Pyramid of number is used to show the number of individuals in each trophic level.
19. Pyramid of Biomass: The pyramid of biomass is used to show the total biomass of individuals at each trophic level.
20. Pyramid of biomass is upright in case of grassland and forest ecosystems and inverted in case of pond ecosystems

21. It is upright in case of grassland and pond ecosystems, pyramid of number is inverted in parasitic food chain.
22. Pyramid of energy: Pyramid of energy is used to show the amount of energy transferred between trophic levels.
23. The pyramid of energy flow is always upright because there is always loss of energy while moving from lower trophic level to higher trophic level.
24. Primary production: Primary production is the synthesis of new organic material from inorganic molecules by the process of photosynthesis.
25. Secondary production: Secondary production is the generation of biomass of heterotrophic (consumer) organisms by the transfer of organic material between trophic levels.
26. Ecological Succession: Ecological succession is the gradual process by which ecosystems change and develop over time.
27. Types of Succession: Primary succession and Secondary succession.
28. Primary succession: A series of community changes which occur on an entirely new habitat which has never been colonized before.
29. Secondary succession: a series of community changes which take place on a previously colonized, but disturbed or damaged habitat.
30. Process of ecological succession: nudation (development of bare area), Invasion (involves migration or dispersal, ecesis or establishment, aggregation), Competition, Stabilization (Attaining a stable community [climax community]).
31. Homeostasis: Inherent property of all living systems to resist change (by negative feedback mechanism).
32. Important features of tropical rain forests: found in tropical regions, high plant biodiversity, tall tree, dense canopy.
33. Notable biotic components of tropical rain forests: small mammals, reptiles, birds, monkeys, predators like tigers, jaguars etc.
34. Notable biotic components of temperate rain forests: coniferous trees (E.g., pines, firs, redwood), some broad-leaf evergreen trees.
35. Notable biotic components of temperate deciduous forests: broad-leaf deciduous plants (oaks, maples), some coniferous plants, ferns, lichens and mosses are also found.)
36. Important features of temperate Forest: found in mid-latitudes with moderate temperature, moderate amounts of moisture, distinct vertical strata (trees, understory shrubs, herbaceous sub-stratum). In

case of temperate deciduous forests, trees lose their leaves in cold, many animals hibernate or migrate then.

37. Notable biotic components of evergreen coniferous forests (south of arctic tundra): coniferous trees (pines, firs, spruce, cedar), mosses, lichens, grasses and some dwarf trees; animals like arctic foxes, hares, snowy owls.
38. Important features of evergreen coniferous forests: found in south of arctic tundra, less sunlight, less biodiversity, poor soil.
39.
40. Important features of tropical grassland (savanna): found near the border of tropical rain forest, high temperature, low or moderate rainfall.
41. Important features of temperate grassland (prairies, pampas, velds, steppes): hot during summer and very cold during winter, frequent summer fire.
42. Notable biotic components of tropical or temperate grassland: grass, few trees, grazing animals like buffalo, wild horses, kangaroos, zebra as well as predators like wolves, cheetahs etc.
43. Important features of polar grassland: found in arctic tundra, permafrost (permanent frozen ground), bitter cold, high winds and thus no trees.
44. Notable biotic components of polar grassland: mosses, lichens, insects, mosquitos, migratory birds etc.
45. Types of desert: tropical desert, temperate desert, cold desert.
46. Notable biotic components of desert: thorny shrubs, cactus, insects, lizards, reptiles, nocturnal rodents, birds, etc.
47. Notable biotic components of pond and lake: phytoplanktons, zooplankton, submerged floating and emergent aquatic plants. (E.g., nelumbo, hydrilla, chara, etc., small fishes, beetles, mollusca, crustaceans, etc.)
48. Zones of lake: Littoral zone (shallow water zone), Limnetic zone (the region where sunlight reaches), Profundal zone (the region where sunlight does not reach).