CUET MCQ Questions from UNIT 5 (2)

1. **What is ecological succession?**
   A. Replacement of animal species over time.
   B. Gradual and predictable change in the composition of species in an area.
   C. Random distribution of species in an area.
   D. Permanent loss of species in a habitat.

2. **Primary succession occurs in areas:**
   A. Previously occupied by living organisms.
   B. Without any previous soil or life, like bare rock.
   C. Destroyed by human activity.
   D. Occupied only by plants.

3. **Secondary succession occurs:**
   A. In areas devoid of soil.
   B. On previously inhabited areas after disturbances like fire or flood.
   C. Only in aquatic ecosystems.
   D. In areas with pioneer species.

4. **What are pioneer species?**
   A. Species that dominate climax communities.
   B. First species to colonize barren environments.
   C. Animal species that follow plants in succession.
   D. Invasive species in an ecosystem.

5. **A climax community is:**
   A. A temporary stage in succession.
   B. The stable, final stage of succession.
   C. Dominated by pioneer species.
   D. The starting point of primary succession.

6. **Carbon fixation occurs during:**
   A. Photosynthesis
   B. Respiration
   C. Decomposition
   D. Combustion

7. **Pollination is essential because it:**
   A. Provides oxygen to the atmosphere.
   B. Facilitates seed and fruit production in plants.

C. Helps in nutrient cycling.
D. Converts CO_2 to glucose.

8. What is the primary source of oxygen released into the atmosphere?
A. Decomposers
B. Photosynthesis in plants
C. Respiration in animals
D. Combustion of fossil fuels

9. Why is carbon fixation important for ecosystems?
A. It removes oxygen from the atmosphere.
B. It provides the basis for the food chain.
C. It accelerates decomposition.
D. It eliminates greenhouse gases.

10. What role do decomposers play in succession?
A. Consuming primary producers.
B. Recycling nutrients back into the ecosystem.
C. Limiting population growth.
D. Producing oxygen.

11. In ecological succession, nitrogen-fixing bacteria are crucial because:
A. They prevent soil erosion.
B. They enrich soil by converting atmospheric nitrogen into usable forms.
C. They promote oxygen release.
D. They act as decomposers.

12. How does energy flow in an ecosystem during succession?
A. Randomly between organisms.
B. From producers to consumers in a unidirectional manner.
C. From decomposers to herbivores.
D. Cyclically between all organisms.

13. A keystone species:
A. Always dominates numerically.
B. Has a disproportionately large effect on its ecosystem.
C. Is always a primary consumer.
D. Initiates primary succession.

14. Secondary succession is faster than primary succession because:

A. Soil is already present.
B. The climate is more favourable.
C. Pioneer species are not needed.
D. It occurs in aquatic ecosystems.

15. Bees contribute to ecological services by:
A. Fixing nitrogen in the soil.
B. Decomposing organic matter.
C. Pollinating flowers, aiding plant reproduction.
D. Recycling carbon.

16. Biodiversity refers to:
A. The total number of individuals in an ecosystem.
B. The variety of all forms of life on Earth.
C. Only the plant species in a forest.
D. The number of organisms in an ecosystem.

17. Biodiversity is highest in which region?
A. Temperate regions
B. Polar regions
C. Tropical rainforests
D. Deserts

18. Biodiversity is crucial because it:
A. Increases the number of predators.
B. Supports ecosystem services and human survival.
C. Reduces genetic variation.
D. Eliminates competition in ecosystems.

19. Biodiversity hotspots are regions:
A. With low species diversity.
B. With high species richness and endemism.
C. Primarily located in polar regions.
D. That lack endangered species.

20. The primary cause of biodiversity loss is:
A. Natural disasters
B. Habitat destruction due to human activities
C. Genetic mutations
D. Soil erosion

21. An endangered species is:

A. A species with a stable population.
B. At high risk of extinction.
C. Commonly found worldwide.
D. Increasing in population.

22. The Red Data Book is published by:

A. UNEP
B. IUCN
C. WWF
D. UNESCO

23. An example of in-situ conservation is:

A. Zoos
B. Gene banks
C. National parks
D. Seed banks

24. Ex-situ conservation includes:

A. National parks
B. Sacred groves
C. Botanical gardens
D. Biosphere reserves

25. Biosphere reserves aim to:

A. Protect only endangered species.
B. Combine biodiversity conservation with sustainable development.
C. Focus only on genetic diversity.
D. Replace natural ecosystems with artificial ones.

26. National parks primarily protect:

A. Endangered plants only.
B. Entire ecosystems.
C. Specific animal species.
D. Non-renewable resources.

27. Sacred groves are significant because:

A. They are sites for industrial development.
B. They protect forests through cultural and religious practices.

C. They eliminate invasive species.
D. They reduce pollution levels.

28. Extinction refers to:
A. Migration of species.
B. Loss of a species forever.
C. Natural increase in population.
D. Gradual evolution of species.

29. Genetic diversity refers to:
A. Variety of ecosystems.
B. Variability within a species.
C. Total number of species.
D. Number of endemic species.

30. Habitat loss affects biodiversity by:
A. Increasing species richness.
B. Decreasing the available resources for species survival.
C. Promoting invasive species.
D. Stabilizing the ecosystem.

31. Which of the following is a primary air pollutant?
A. Ozone
B. Sulfur dioxide
C. Smog
D. Acid rain

32. Eutrophication in water bodies is caused by:
A. Heavy metals
B. Excess nutrients like nitrogen and phosphorus
C. Plastic waste
D. Thermal pollution

33. Excessive use of agrochemicals leads to:
A. Improved soil health
B. Groundwater contamination
C. Increased biodiversity
D. Reduced crop yield

34. The best method for solid waste management is:

A. Landfilling
B. Recycling
C. Incineration
D. Open dumping

35. Acid rain is primarily caused by:
A. Carbon dioxide and methane emissions
B. Nitrogen oxides (NOx) and sulfur dioxide (SO_2)
C. Volatile organic compounds (VOCs)
D. Particulate matter

36. Biodegradable waste includes:
A. Plastics
B. Food scraps
C. Glass
D. Metal cans

37. The greenhouse effect is caused by:
A. Particulate matter
B. Greenhouse gases trapping heat
C. Depletion of the ozone layer
D. Increased rainfall

38. Photochemical smog is mainly caused by:
A. Heavy rainfall
B. Interaction of sunlight with pollutants like NOx and VOCs
C. Soil erosion
D. Ozone layer depletion

39. Bioaccumulation refers to:
A. Growth of plants in polluted soil
B. Accumulation of pollutants in an organism over time
C. Recycling of solid waste
D. Decomposition of organic matter

40. A major source of noise pollution in urban areas is:
A. Lightning storms
B. Vehicular traffic
C. Photosynthesis
D. Soil erosion

41. Composting is a method to manage:

A. Electronic waste
B. Organic waste
C. Plastic waste
D. Radioactive waste

42. Carbon footprint refers to:

A. The amount of water used by a person
B. Total greenhouse gases emitted by an individual or organization
C. Soil erosion in an area
D. Noise levels in a city

43. Water treatment plants remove:

A. Only organic pollutants
B. Both organic and inorganic pollutants
C. Noise from water sources
D. Nutrients like nitrogen and phosphorus

44. Persistent use of pesticides leads to:

A. Enhanced soil fertility
B. Pest resistance
C. Reduced crop yield
D. Increased water availability

45. Thermal pollution is caused by:

A. Increased use of fertilizers
B. Discharge of heated water from industrial plants
C. Plastic waste in oceans
D. Oil spills in rivers

46. The harmful pollutants in agrochemicals are:

A. Pesticides and herbicides
B. Carbon dioxide and methane
C. Sulfur dioxide and nitrogen oxides
D. Volcanic ash

47. Sanitary landfills differ from open dumps because:

A. They use incinerators
B. They prevent leachate from contaminating groundwater

C. They are only for biodegradable waste
D. They eliminate all waste

48. Renewable energy sources help reduce:
A. Water pollution
B. Air pollution caused by fossil fuels
C. Soil erosion
D. Noise pollution

49. Bioremediation refers to the use of:
A. Chemical agents to remove waste
B. Microorganisms to clean up environmental pollutants
C. Advanced technology to treat water pollution
D. Landfilling to manage solid waste

50. A major consequence of deforestation is:
A. Improved air quality
B. Loss of biodiversity
C. Reduced soil fertility
D. Increased water levels

CUET MCQ Questions from UNIT 5

1. **What is the primary difference between habitat and niche?**
   A. Habitat is where an organism lives, and niche is its role.
   B. Habitat includes only abiotic factors.
   C. Niche is physical space only.
   D. Habitat and niche are identical.

2. **Which of the following best defines a niche?**
   A. The physical space occupied by an organism.
   B. The role and position of a species in its ecosystem.
   C. The food resources available to an organism.
   D. The mating behavior of an organism.

3. **Which statement is true about habitat?**
   A. It only includes biotic factors.
   B. It varies with seasons.
   C. It cannot overlap for different species.
   D. It is only relevant for terrestrial organisms.

4. **Which example best illustrates an organism's niche?**
   A. A deer drinking water from a river.
   B. A fox preying on rodents in a forest.
   C. A tree growing in a forest.
   D. A bird building a nest.

5. **What determines the carrying capacity of a habitat?**
   A. Availability of sunlight.
   B. Resources like food, water, and space.
   C. Reproductive rate of the species.
   D. Interaction with predators.

6. **What is an example of physiological adaptation?**
   A. Camouflage in chameleons.
   B. Hibernation in bears.
   C. Migration of birds.
   D. Thick fur in polar bears.

7. **Structural adaptations in organisms refer to:**

A. Changes in body structure to survive.
B. Changes in behavior for survival.
C. Seasonal migration to suitable habitats.
D. Changes in population density.

8. Which of the following is NOT an adaptation?
A. Long roots in desert plants.
B. Migration of fish upstream.
C. Overpopulation in a specific region.
D. Camouflage in insects.

9. Behavioural adaptation involves:
A. Formation of spines in plants.
B. Living in groups for protection.
C. Thick cuticle on leaves.
D. Growth of taproots.

10. Which adaptation is seen in desert plants?
A. Large leaves for transpiration.
B. Reduced leaves or spines.
C. Absence of roots.
D. Thin cuticle on leaves.

11. Mutualism benefits:
A. Only one species.
B. Both interacting species.
C. Neither species.
D. Predator species only.

12. Predation involves:
A. Two species living together without harming each other.
B. One species feeding on another.
C. Both species benefiting from interaction.
D. Competition for the same resource.

13. Parasitism is defined as:
A. Symbiotic interaction that harms one species.
B. Beneficial interaction for both species.
C. Competition for the same food.

D. Co-existence without any interaction.

14. Which is NOT an example of mutualism?

A. Bees and flowering plants.
B. Coral and zooxanthellae algae.
C. Cattle egrets and cattle.
D. Human gut bacteria producing vitamins.

15. Competition occurs when:

A. Two species live together peacefully.
B. Two species use the same limited resource.
C. One species benefits at the other's expense.
D. Both species benefit from the interaction.

16. Which term describes population growth under ideal conditions?

A. Logistic growth
B. Exponential growth
C. Declining growth
D. Saturation growth

17. Birth rate is defined as:

A. Number of deaths per unit time.
B. Number of births per unit time.
C. Ratio of births to deaths.
D. Growth of a population over time.

18. What does age distribution indicate in a population?

A. Proportion of individuals in different age groups.
B. Total population density.
C. Migration rates.
D. Food availability in an ecosystem.

19. Carrying capacity is:

A. Maximum population an ecosystem can support sustainably.
B. Total population size at a given time.
C. Maximum birth rate in a population.
D. Amount of food in an ecosystem.

20. Which factor does NOT directly affect population growth?

A. Birth rate

B. Death rate
C. Immigration
D. Seasonal changes

21. What role do predators play in an ecosystem?
A. They disrupt food chains.
B. They increase the prey population.
C. They regulate prey populations and promote biodiversity.
D. They consume only plants.

22. How does logistic growth differ from exponential growth?
A. Logistic growth occurs under ideal conditions.
B. Logistic growth considers carrying capacity, while exponential growth does not.
C. Logistic growth is faster than exponential growth.
D. Logistic growth does not involve resources.

23. How do ecological adaptations contribute to evolution?
A. By eliminating competition.
B. By enhancing survival and reproduction in specific environments.
C. By decreasing genetic diversity.
D. By increasing population density.

24. Which factor primarily affects the carrying capacity of an ecosystem?
A. Climate alone.
B. The reproductive rate of species.
C. Availability of resources like food, water, and space.
D. Immigration and emigration only.

25. What is the relationship between fungi and algae in lichens?
A. Predation
B. Competition
C. Mutualism
D. Parasitism

26. Which of the following best defines an ecosystem?
A. A community of organisms and their physical environment interacting as a unit.
B. Only abiotic factors in a given area.
C. A group of similar species living together.

D. Only the producers in a habitat.

27. What is Gross Primary Productivity (GPP)?

A. Total energy used by consumers.
B. Total energy fixed by plants through photosynthesis.
C. Energy available to herbivores.
D. Energy lost as heat in respiration.

28. What is the final product of decomposition?

A. Organic material
B. Humus and inorganic nutrients
C. Biomass
D. Energy

29. Energy flow in an ecosystem is:

A. Circular
B. Bi-directional
C. Unidirectional
D. Static

30. The Pyramid of Energy is always:

A. Upright
B. Inverted
C. Horizontal
D. Irregular

31. Which organism is a primary consumer?

A. Grasshopper
B. Eagle
C. Fungi
D. Oak tree

32. Which process removes carbon dioxide from the atmosphere?

A. Respiration
B. Combustion
C. Photosynthesis
D. Decomposition

33. Phosphorus is mostly stored in:

A. Atmosphere
B. Rocks and sediments
C. Ocean water
D. Living organisms

34. What does secondary productivity measure?
A. Energy flow in autotrophs
B. Energy stored in consumers
C. Total energy fixed by plants
D. Heat loss in the environment

35. The pyramid of biomass is inverted in:
A. Forest ecosystems
B. Grasslands
C. Aquatic ecosystems
D. Tundra ecosystems

36. Nutrient cycling ensures:
A. Flow of energy in ecosystems
B. Constant availability of essential elements
C. Growth of producers only
D. Biodiversity reduction

37. Which of the following begins the detritus food chain?
A. Producers
B. Primary consumers
C. Decomposers
D. Secondary consumers

38. A limiting nutrient in an ecosystem is:
A. Always abundant
B. Present in a smaller quantity relative to demand
C. Completely absent
D. Unavailable for uptake by plants

39. Which factor limits primary productivity in oceans?
A. Light and nutrients
B. Temperature
C. Salinity

D. pH

40. Accumulation of litter in an ecosystem indicates:

A. Low decomposition rate
B. High productivity
C. Rapid nutrient cycling
D. Overabundance of detritivores

41. What are the two main components of an ecosystem?

A. Producers and decomposers
B. Biotic and abiotic components
C. Flora and fauna
D. Nutrient cycles and energy flow

42. What does primary productivity in an ecosystem refer to?

A. The decomposition rate of organic matter.
B. The rate of energy storage by autotrophs.
C. The flow of energy between trophic levels.
D. The population of consumers in an ecosystem.

43. Which process is a key step in decomposition?

A. Photosynthesis
B. Fragmentation of organic matter
C. Pollination
D. Nitrification

44. How does energy flow in an ecosystem?

A. In a circular pattern.
B. From decomposers to producers.
C. In a unidirectional flow from producers to consumers.
D. By recycling between all components.

45. Which ecological pyramid can never be inverted?

A. Pyramid of number
B. Pyramid of biomass
C. Pyramid of energy
D. All of the above

46. Which process contributes to carbon release into the atmosphere?

A. Photosynthesis
B. Decomposition of organic matter
C. Absorption by oceans
D. Nutrient cycling in plants

47. Why is the phosphorus cycle considered a sedimentary cycle?
A. Phosphorus is found in the atmosphere.
B. Phosphorus primarily cycles through soil and rock.
C. It involves gaseous exchanges.
D. It includes oceanic currents.

48. Which aquatic ecosystem has the highest productivity?
A. Open Ocean
B. Coral reefs
C. Deep-sea trenches
D. Arctic waters

49. In a terrestrial ecosystem, the base of the pyramid of biomass is occupied by:
A. Secondary consumers
B. Producers
C. Decomposers
D. Primary consumers

50. What is the primary role of nutrient cycling in ecosystems?
A. To maintain biodiversity.
B. To recycle essential elements like carbon and phosphorus.
C. To increase energy flow.
D. To prevent decomposition.