Biology
Classified MCQ
Unit 8
2000 - 2020

Unit 8 – Environmental Biology

Different organizational levles and biosphere.

(1) In every eco-system
(1) I ry consumer level has the greatest vio mass.
(2) Plant and animal matter is broken down into end products which can be used again.
(3) The highest number of living beings is in the I ry producer level.
(4) The greatest amount of energy is stored in the highest nurtitional level.
(5) Decomposers play a vital role in recycling of energy. (2002)

(2) Ehich of the following is an example of a community?
(1) Veddas of Dambana (2) Elephants of Udawalawe National Park
(3) Bees of a bee hive (4) Plankton of victoria reservoir
(5) Pitcher plants of Sinharaja forest (2005)

(3) Which feature of populations contribute least for the evolution of a species?
(1) Intra specific competition (2) Inter specific competition
(3) Adaptation to different ecological niches (4) Adaptive radiation
(5) Specialization to a specific environment (2006)

(4) Which one of the following components in the atmosphere is in most variable amounts?
(1) nitrogen (2) carbon dioxide (3) ozone
(4) oxygen (5) water vapour (2007)

(5) Which of the following indicates/indicate the examples for some hierarchical levels of biological organization in correct order?
(A) DNA, nucleus, muscle fibre, circular muscles, stomach
(B) Crow, flock of crows, flock of birds, home garden, biosphere
(C) Neurilemma, axon, neurone, brain, nervous system
(D) Amino acids, endoplasmic reticulum, neutrophils, blood vessels, blood
(E) Toad, Amphibia, Chordata, Animalia, Eukariya (2018-41)

Componants and activitles of ecosystems.

(1) In a pyramid of numbers based on a food chain in an aquatic environment, which of the following shows a progressive decrease in numbers in the ascending trophies levels?

	Primary producers	Primary consumers	Secondary consumers
(1)	Phytoplankton	Zooplankton	Fish
(2)	Awuatic macrophytes	Aquatic insects	Nymphs of dragonflies
(3)	Phytoplankton	Snails	Parasites of snails
(4)	Phytoplankton	Bacteria	Fish
(5)	Unicellular green algae	Parasites of algae	Carnivorous fish

(2000)

- Questions 2 and 3 are based on the fo llowing trophic levels of an ecosystem.

A – Primary producers
B – Primary consumers
C – Secondary consumers
D – Tertiary consumers
E – Decomposers

(2) Which of the above trophic levels is represented by edible mushrooms growing in a tropical rain forest?
(1) A (2) B (3) C (4) D (5) E (2000)

(3) Which of the above trophic levels is likely to accumulate the highest concentration of non-biodegradabel insecticides?
(1) A (2) B (3) C (4) D (5) E (2000)

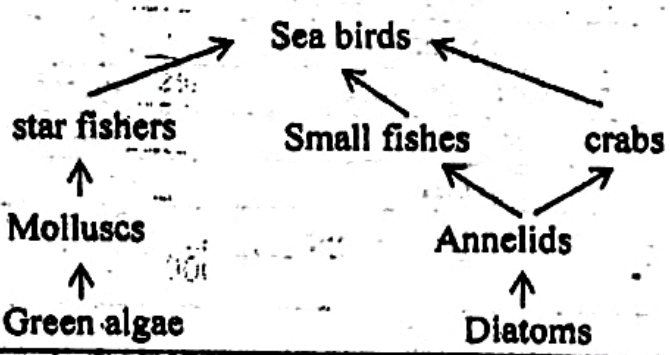
(4) Which of the following is directly responsible for recycling of mineral elements whithin an ecosystem?
(1) Primary producers (2) Primary consumers (3) Decomposers
(4) Parasites (5) Secondary consumers (2001)

(5) It is believed that the major reson for the increase in carbon dioxide concentration in the atmosphere during the last two centuries is
(1) The increase in human population.
(2) The increase in agricultural crop productivity.
(3) The decrease in plant cover.
(4) The increase in fossil fuel consumption.
(5) The increase in animal husbandry activities. (2003)

(6) Which one of the following chemical conversions in the nitrogen cycle is affected by Nitrobacter?
(1) $NO_2^- \rightarrow NO_3^-$ (2) $NH_3 \rightarrow NO_2^-$ (3) $NO_2^- \rightarrow NH_3$
(4) $NO_3^- \rightarrow N_2$ (5) $N_2 \rightarrow NH_4^+ / NH_3$ (2003)

(7) Which of the following processes decrease/decreases the amount of the nitrogen in an agricultural soil?
(A) Leaching (B) Nitrification
(C) Denitrification (D) Absorption by plants
(E) Removal of the harvest (2003)

- Question 8 and 9 are based on the simple food web given below.



(8) Which one of the following would most probably happen if the population of sea birds decreases?
(1) The small fish and annelids would decrease in number.
(2) The crabs and green algae would increase in number.
(3) The annelids and star fishes would decrease in number.
(4) The molluscs and diatoms would increase in number.
(5) The diatoms and geen algae would decrease in number. (2004)

(9) Which of the following best describes the relationship between the crabs and small fishers?
(1) Competition (2) Symbiosis (3) Predation
(4) Commensalism (5) Parasitism (2004)

(10) Which one of the following features is common to both decomposers and producers in an ecosystem?
(1) Both represent the first tropic level in different ecosystems.
(2) Both require a source of nutrients and a source of energy.
(3) Both produce oxygen for other organisms in the ecosystem.
(4) Both suppley prganic food for the biosp[here.
(5) In aquatic ecosystems their numbers are more or less equal. (2004)

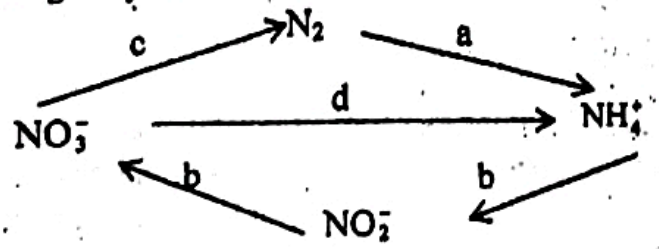
- Questions 11 and 12 are based on the trophic levels of a natural ecosystem given bellow.

A – Primary producers
B – Primary consumers
C – Secondary consumers
D – Tertiary consumers
E – Decomposers

(11) Ther tpopic level which represents mosses growing as epiphytes on a tree trunk is
(1) A (2) B (3) C (4) D (5) E (2004)

(12) The trophic level which represents mushrooms occasionally seen growing on the base of the trunks of trees is
(1) A (2) B (3) C (4) D (5) E (2004)

- Question 13 and 14 are based on the following diagram which represents some of the activities of the nitogen cycle.



(13) The processes a, b, c and d shown in the above diagram are known respectively as
(1) Denitrification, nitrogen fixation, nitrification and ammonification.
(2) Nitogen fixation, nitrification, denitrification and nitrate reduction.
(3) Denitrification, nitrification, nitrate reduction and nitrogen fization.
(4) Nitrogen fization, nitrification, nitrate reduction and ammonification.
(5) Ammonification, nitrification, nitrate reduction and denitrification. (2004)

(14) Which of the following organisms are responsible for the process a
(1) *Rhizobum* and *Azotobacter* (2) *Nitrobacter* and *Azotobacter*
(3) *Rhizobum* and *Acetobacter* (4) *Anabaena* and *Pseudomonas*
(5) *Nitrosomonas* and *Acetobacter* (2004)

(15) Which of the following is considered the major reason which led to the increase in CO_2 concentration in the atmosphere during the last century?
(1) Increase in human population
(2) Increase in the use of fossil fuels
(3) Increase in population of plants and animals
(4) Increased use of chlorofluorocatbon compounds
(5) Increase of animal husbandry (2005)

(16) In which one of the following ecosystems, is an ecological pyramid of biomass, is often an inverted pyramid?
(1) Mangroves (2) Grasslands (3) Tropical rain forests
(4) Tundra (5) Oceans (2006)

(17) Which one of the following combinations of chemical elements often limit primary productivity of the terrestrial agricultural ecosystems?
(1) C, N, P (2) N, K, P (3) S, N, C (4) S, N, P (5) N, K, S (2006)

(18) Large amount of fresh water on earth is not available for human use as it is trapped polar ice caps. This amount of fresh water as a percentage of total amount of water available on earth is epproximately
(1) 0.75% (2) 2.25% (3) 3.0% (4) 75% (5) 97% (2007)

(19) Which of the following ecological pyramids is most likely to be inverted?
(1) Pyramid of biomass in a shallow freshwater pond with dense aquatic begetation.
(2) Pyramid of numbers in a well maintained paddy field.
(3) Pyramid of biomass in the ocean.
(4) Pyramid of biomass in a tropical rain forest.
(5) Pyramid of numbers in the ocean. (2007)

(20) Which activity of man, affects carbon cycle least?
(1) hydroelectric power generation (2) use of fossil fuels
(3) lime industry (4) disposal of garbage
(5) clearing of forests (2008)

(21) Which one of the following may not occur due to over-use of water in agriculture?
(1) increased productivity (2) increase in soil salinity
(3) eutrophication (4) aquatic pollution
(5) water logging (2008)

(22) Which of the following cannot be considered as a population?
(A) Nematodes in the alimentry canal of an infected person.
(B) Mangroves in Mannar district.
(C) Elephants in Wilpattu national park.
(D) Shrimps in Negambo lagoon.
(E) *Oreochromis mossambicus* in Parakrama smudrarya. (2008)

(23) Primary productivity of the biosphere is highest in
(1) tropical rain forests (2) oceans
(3) grasslands (4) agricultural lands
(5) temperate deciduous forests (2009)

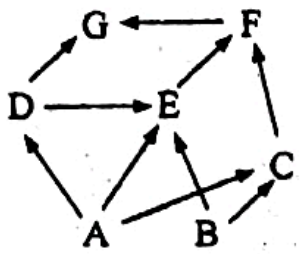
(24) Which of the following is correct regarding the energy flow in the biosphere?
(1) Energy is cycled in the biosphere.
(2) All autotrophic organisms in the biosphere do not use solar energy for carbohydrate synthesis.
(3) Approximately 90% of solar energy that falls on the biosphere is converted into chemical energy, by plants.
(4) Energy may flow in both directions between two trophic levels.
(5) The amount of energy fixrd in the highest trophic level is higher than the energy fixed at the lower trophic level. (2009)

(25) Which one of the following is correct regarding the hydrological cycle?
(1) It occurs mainly due to interactions between biotic and abiotic components of an ecosystem
(2) Human activites significantly influence it.
(3) Solar energy is essential to maintain it.
(4) It is confined to a particular area.
(5) Forests are essential to maintain it. (2010)

(26) Which of the following substance/substances can be accumulated along the food chains
(A) Chlorinated hydrocarbons (B) Heavy metals (C) Pyrethroids
(D) Organophosphates (E) Nitrates (2010)

(27) Which of the following statements regarding ecosystems is/are incorrect?
(A) Spider population in Bundala national park ecosystem may be threatened due to illegal exportation.
(B) The amount of biomass of primary producers available for primary consumers in an ecosystem is indicated by Net Primary Productivity.
(C) Biosphere consists of a large number of ecosystems on earth which are interconnected with each other.
(D) Micro-organisms are essential for the flow of energy through an ecosystem.
(E) A recent survey showed that the wild elephant population in forest ecosystems in Sri Lanka has increased. (2012)

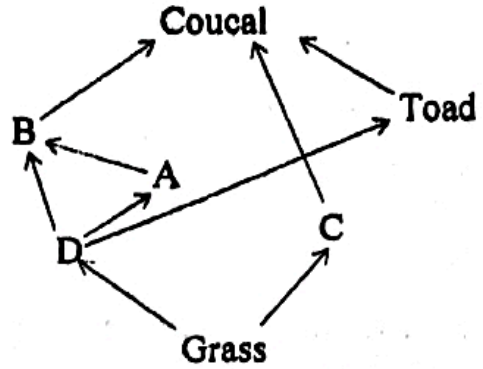
- Question no. 28 is based on the following food web of a terrestrial ecosystem.



(28) Which of the following statements regarding the above food web is/are correct?
(1) Removal of E may result in an increase of D.
(2) There are three species belonging to the third trophic level.
(3) F may be an insectivore.
(4) E is an omnivore.
(5) D may be cobra. (2015)

(29) Which of the following statements regarding the phosphorus cycle is correct?
(1) The largest accumulation of phosphorus is in the soil.
(2) HPO_4^{2-} is the most abundant form of inorganic phosphorus in the phosphorus cycle.
(3) There is an atmospheric phase in the phosphorus cycle.
(4) Plants absorb phosphorus in the form of $H_2PO_4^-$
(5) Human activities have no impact on phosphorus cycle. (2016-34)

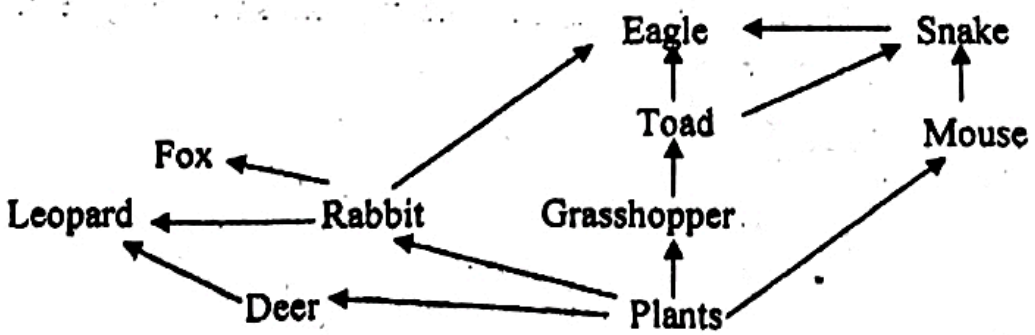
Question No. 30 is based on the following food web seen in a home garden ecosystem.



(30) Which of the following statements regarding the above ecosystem is correct?
(1) There are two primary consumers and three secondary consumers in this ecosystem.
(2) The longest food chain in this ecosystem has four trophic levels.
(3) A is a keystone species in this ecosystem.
(4) Removing C will reduce the population of coucals.
(5) B may be a lizard and C may be a snail. (2017-34)

(31) In an ecosystem, gross primary productivity and the amount of energy available at the third trophic level were determined to be 2000 kJm^{-2} $year^{-1}$ and 11 kJm^{-2} $year^{-1}$ respectively. If 90% of energy is lost when flows from one trophic level to the next, the amount of energy used for respiration by the primary producers in this ecosystem is
(1) 900 kJm^{-2} $year^{-1}$ (2) 990 kJm^{-2} $year^{-1}$ (3) 1010 kJm^{-2} $year^{-1}$
(4) 1100 kJm^{-2} $year^{-1}$ (5) 1800 kJm^{-2} $year^{-1}$ (2018-33)

(32) This question is based on the food web given below.



In the above food web, the organisms that can be considered as in the same trophic level are

(A) eagle and snake (B) leopard and fox (C) toad and mouse
(D) toad and eagle (E) grasshopper and leopard (2020-49)

Main biomes of the world.

(1) The correct order in which some of the biomes can be seen by a person walking from the northern part of earth towards the equator is
(A) Tiga, Thundra, Deciduous forests, Rain forests
(B) Deciduous forests, Tiga, Rain forests, Deserts
(C) Thundra, Tiga, Deciduous forests, Rain forests
(D) Tiga, Deciduous forests, Deserts, Tropical grasslands
(E) Thundra, Temperate grasslands, Tiga, Deserts (2002)

(2) Soils of tropical rain forests are generally poor in nutrients because
(1) biomass of decomposing leaves on the forest floor is low.
(2) microorganisms are less abundant in soil of these forests.
(3) the decomposition of organic matter and assimilation of nutrients by plants are very rapid.
(4) nutrient cycling is generally slow.
(5) high rainfall leaches the soil nutrients. (2004)

(3) Which one of the following biomes has the highest animal diversity?
(1) Taiga (2) Temperate deciduous forests
(3) Grasslands (4) Tropical rain forests (5) Savannah (2004)

(4) Which of the following statements is/are correct?
(A) Biological diversity is higher in tropical rain forests than in savannahs.
(B) Deciduous forests are present in temperate regions as well as in tropical regions.
(C) Grasslands are confined to tropical regions of the world.
(D) In wet evergreen forests, the annual rainfall is above 2000 mm.
(E) In temperate evergreen forests, the entire winter season is without daylight.(2006)

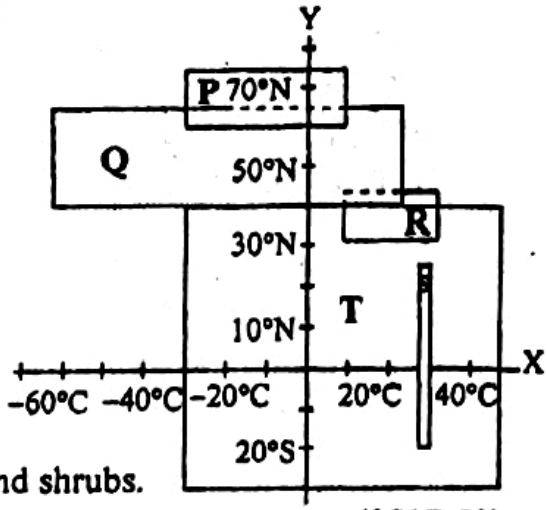
(5) When compared with tropical biomes, the temperate biomes
(1) have a higher biological diversity.
(2) have a higher plant density.
(3) have trees that do not show annual growth rings.
(4) show clear stratification of plants.
(5) have more deciduous plants. (2008)

(6) Which of the following biomes are present between the equator and tropic of cancer of the earth?
(1) Tropical rain forests, deserts, monsoon forests, savanna
(2) Tropical rain forests, tropical deciduous forests, tundra, coniferous forests
(3) Tropical rain forests, deserts, chaparral, savanna
(4) Tropical rain forests, tropical deciduous forest, coniferous forests, taiga
(5) Tropical rain forests, deserts, tropical deciduous forests, chaparral (2010)

(7) Which of the following ecosystems has evergreen trees with cntinuous canopy?
(1) Dry mixed evergreen forest (2) Thorn forest
(3) Montane forest (4) Tropical tain forest
(5) Mangrove forest (2011)

(8) Which of the following terrestrial biomes shows the least variation in temperature?
(1) Temperate grasslands (2) Temperate broad leaf forests
(3) Coniferous forests (4) Tropical forests
(5) Deserts (2016-33)

(9) Approximate ranges of temperature (X-axis) of five major terrestrial biomes labelled as P, Q, R, S and T and the latitudes of their distribution (Y-axis) are shown in the following diagram. Which of the following statements regarding the biomes P, Q, R: S and T is/are correct?



(A) Dominant plants in biome Q are conifers.
(B) If the annual rainfall is above 1000 mm, biome with the highest biodiversity is S.
(C) Largest terrestrial biome is T.
(D) Dominant plants in biome R. are small trees and shrubs.
(E) Longest food chains are found in biome P. (2017-50)

(10) Which of the following indicates/indicate a characteristic feature of each of the savannas, dry mixed evergreen forests, tropical rain forests and montane forests in correct order?
(A) Fire resistant trees, no clear stratification, continuous canopy, evergreen trees
(B) Evergreen trees, deciduous plants, clear stratification, trees with twisted trunks
(C) Grass, evergreen trees, no clear stratification, xerophytic plants
(D) Grass, fire resistant trees, evergreen trees, no clear stratification
(E) Evergreen trees, no clear stratification, stunted trees, trees with twisted trunks
(2018-50)

(11) In which of the following responses, the biomes that are encountered when traveling from the north pole towards equator are given in correct sequence?
(A) Tundra, coniferous forests, temperate grasslands, deserts; tropical forests
(B) Tundra, coniferous forests, temperate broad-leaf forests, chaparral, deserts
(C) Tundra, temperate grasslands, coniferous forests, deserts, tropical forests
(D) Tundra, temperate broad-leaf forests, coniferous forests, tropical forests, deserts
(E) Tundra, coniferous forests, chaparral, temperate grasslands, savanna (2019-48)

(12) Which of the following responses indicates the biomes in increasing order of average annual rainfall/ precipitation?
(1) Arctic tundra, temperate grasslands, temperate broad leaf forests
(2) temperate grasslands, savannas, tropical rain forests
(3) Deserts, Alpine tundra, northern coniferous forests.
(4) Arctic tundra, chaparrals, savannas
(5) tropical dry forests, chaparrals, Alpine tundra (2020-34)

Ecosystems of Sri Lanka.

(1) What is the approximate percentage of land covered by forests in Sri Lanka at present?
(1) 10 % (2) 20 % (3) 30 % (4) 40 % (5) 50 % (2001)

(2) Dry patana grasslands in Sri Lanka are seen in
(1) low country dry zone
(2) low country intermediate zone
(3) Uva basin
(4) Horton plains
(5) arid zone (2007)

(3) Which one of the following does not affect the diversity of forest ecosystems in Sri Lanka?
(1) Temperature (2) Altitude (3) Rainfall (4) Wind (5) Latitude (2009)

(4) Which one of the following, forms the basis of classification of bioclimatic zones of Sri Lanka?
(1) Rainfall
(2) Rainfall and temperature
(3) Rainfall temperature and sunlight
(4) RAinfall, temperature and natural vegetation type
(5) Rainfall, temperature and altitude (2009)

(5) Which one of the following is correct regarding tropical rain forests in Sri Lanka?
(1) They are located in areas where annual rainfall is 1200-2000 mm.
(2) Prominent plants are the evergreen and deciduous trees.
(3) Their conopy is discontinuous.
(4) There is a clear stratification of plants.
(5) There is well developed ground layer. (2010)

(6) Dry patana grasslands in Sri Lanka are found in.
(1) intermediate and wet zones.
(2) dry and intermediate zones.
(3) dry and arid zones.
(4) dry, intermediate and wet zones.
(5) arid, dry and intermediate zones. (2019-36)

Biodiversity and conservation.

(1) The most significant cause of loss of biodiversity in Sri Lanka is considered as
(1) global warming
(2) destruction of habitats
(3) destruction of the ozone layer
(4) human consumption of native plants for food
(5) accumulation of non-biodegradable chemicals along the food chains (2000)

(2) Which of the following international conventions is associated with the management of hazardous wastes?
(1) CITES (2) Basel convention (3) Ramsar convention
(4) Montreal protocola (5) Biodiversity convention (2001)

(3) Which of the following statement/statements regarding biodiversity is/are false?
(A) Increase in human population size is a root cause for the loss of biodiversity on earth.
(B) Ex – situ conservation practices have helped to conserve some endangered species of Sri Lanka.
(C) If conservation strategies are properly implemented, animals and plants can be protected from the threat of extinction.
(D) Human use of living resources always results in and increase in the rate of extinction of these resources.
(E) Evolution of certain biological processes has resulted in the expansion of biodiversity in the past. (2001)

(4) A group of students studied the species diversity in freshwater and terrestrial ecosystems and grouped the prganisms observed into different taxa. Organisms belonging to which of the following taxa/taxon may have been observed in both ecosystems?
(A) Hirudinea (B) Insecta (C) Hydrozoa
(D) Anthophyta (E) Bryophyta (2001)

(5) Flagship species are
(1) Species confined to a certain country or area.
(2) Species included in ICUN red data book.
(3) Species depicted in national flags of countries.
(4) Species which are symbolic of cultural aspects (values) of their country.
(5) Species which are protected by law. (2002)

(6) The CITES agreement is concerned with the
(1) emission of ozone depleting substances.
(2) sale of endangered plants and animals.
(3) conservation of wetlands.
(4) minimizing of greenhouse effect.
(5) protection of endemic species. (2002)

(7) What statements/s is true about extinction of species?
(A) It is a natural process
(B) According to present findings, the 1st main process of extinction that occurred on earth is the extinction of dinosaurs.
(C) Rate of extinction of species has increased during the last century.
(D) Extinction is essential to make way for new species.
(E) Rate of extinction of species is generally greater than rate of speciation. (2002)

(8) Which one of the following statements regarding biodiversity is correct?
(1) The three major divisions of biodiversity are species diversity, genetic diversity and habitat diversity.
(2) Species diversity is the diversity among the organisms within a species.
(3) Because of the increasing concern on biodiversity, all species that live on earth are most likely to be identified within the mext 10 years.
(4) The most number of animal species identified so far belong to the phylum Mollusca.
(5) Genetic diversity contributes to the development of insecticide resistant varieties among insect pests. (2003)

(9) Which one of the following correctly represents the scientific name of man according to binomial nomenclature?
(1) *Homo Sepians* (2) *Homo sapiens sapiens* (3) Homo sapiens
(4) *Homo sapiens* (5) *Homo sepians* (2003)

(10) The last mass extinction on earth resulted in the extinction of
(1) ammonites (2) trilobites (3) primitive bony fishes
(4) dinosaurs (5) mammoths (2003)

(11) Which one of the following is an in-situ method of conservation?
(1) Establishment of sanctuares (2) Establishment of turtle hatcheries
(3) Establishment of elephant orphanages (4) Establishment of seed banks
(5) Establishment of botanical gardens (2003)

(12) Which one of the following IUCN categories includes the organisms that are most likely to become extinct first?
(1) Low risk category (2) Vulnerable category
(3) Rare category (4) Conservation dependent category
(5) Data deficient category (2003)

(13) Which one of the following is the most accepted chronological sequence of origin of organisms on earth?
(1) heterotrophic bacteia, cyanobacteria, algae, fishes, trilobites
(2) bacteria, algae, invertebrates, aquatic vertebrates, terrestrial vertebrates
(3) green algae, cyanobacteria, invertebrates, fishes, amphibians
(4) bacteria, algae, cartilaginous fishes, amphibians, bony fishes
(5) algae, invertebrates, fishes, reptiles, amphibians (2004)

(14) Some categories of species considered in the study of biodiversity are as follows:
A – Relict species; B – Keystone species;
C – Endemic species; D – Flagship species
Which one of the following sequences of organisms gives the correct examples for the categories in A, B, C and D?
(1) Lamp shell, Elephant, *Dipterocarpus sp*, Leopard
(2) Elephant, Leopard, *Dipterocarpus sp*, Lamp shell
(3) *Dipterocarpus sp*, Leopard, Lamp shell, Elephant
(4) Lamp shell, Leopard, *Dipterocarpus sp*, Elephant
(5) Elephant, Lamp shell, *Dipterocarpus sp*, Leopard (2004)

(15) Which one of the following statements is correct?
(1) There are no critically endangered species in Sri Lanka.
(2) All critically endangered species kept in the zoological gardents and botanical gardents are found in natural habitats.
(3) A species included in the endangerd category mat be included in the vulnerable category in future.
(4) All critically endangered species are endemic to smal geopgraplc area.
(5) Endangerd species in Sri Landa are mainly conserved by *ex-situ* conservation methods. (2004)

(16) Which of the following ecosystems in Sri Lanka is/are protected by law with respect to biodiversity?
(A) Horton plain (B) Sinharaja forest (C) Thambalagam bay
(D) Peak wildemess (E) Galle face green (2004)

(17) In the context of biodiversity, endemic species are
(1) species found growing naturally in only one country.
(2) species that have disappeared from all but one area due to climatic changes.
(3) species that are essential to the functioning fo the ecosystem where they occur.
(4) species that serve as symbols of environmental awarencess or national culture.
(5) species that are predominantly conserved in national parks. (2005)

(18) Which of the following is not considered an ex-situ conservation method?
(1) Establishment of gene banks (2) Establishment of national parks
(3) Establishment of national botanical gardens
(4) Establishment of turtle hatcheries
(5) Establishment of elephant orphanages (2005)

(19) Which of the following is the major criterion used to determine whether the plants or animals living in or particular habitat belongs to a single species?
(1) Their continuous presence in one habitat
(2) Presence of identical number of chromosomes in their cells
(3) Presence of similar morphological features
(4) Their ability to interbreed and produce fertile offspring
(5) Presence of similar life cycles (2005)

(20) Which of the following statements is incorrect?
(1) *Betle betle* (Betel) is a flagship species in Sri Lanka.
(2) All living resources in Sri Lanka are renewable forms.
(3) Many of the major environmental problems today, are blobal in nature.
(4) Establishment of sanctuaries is an in-situ conservation method.
(5) There are no relict species in Sri Lanka because it is an island. (2006)

(21) The information on the endemicity, abundance and feeding habits of five animal species named as A, B, C, D and E are as follows:
A : Endemic, found in large numbers: the numbers have reduced in the recent past: omnivorous diet.
B : Not endimic, found in large numbers, carnivorous, specialized dietary habit.
C : Endemic, found in small numbers: numbers have reduced in the recent past: hervivorous, specialized dietary habit.
D : Not endemic, found in small numbers, herbivorous: non-specialized dietary habit.
E : Endimic, found in small numbers, omnivorous diet.
Which of the above species in most likely to be endangered in the near future?
(1) A (2) B (3) C (4) D (5) E (2006)

(22) Which of the following is least acceptable?
(1) In the early stages of earth, the atmosphere had no oxygen.
(2) First organisms that evolved on earth, respired anaerobically,
(3) All organisms on earth have evolved from a single stock of organisms.
(4) Life arose from non living matter due to natural causes in early stages of earth.
(5) Life can arise from nonliving matter due to natural causes at any time. (2006)

(23) Some of the conditions of earth at different periods in the past were as follows.
(A) Oceans with photosynthetic organisms as the only living forms.
(B) Presence of primitive bony fish.
(C) Presence of trilobites.
(D) Atmosphere with hydrogen as the major component.
(E) Atmosphere with carbon dioxide, methane and ammonia.
Which one of the following, gives the correct chronological order, of the above confitions?
(1) D, E, A, B, C (2) E, D, A, C, B (3) D, A, E, B, C
(4) D, A, E, C, B (5) D, E, A, C, B (2006)

(24) Which one of the following groups of organisms is most likely to have a large number of endemic species in an island like Sri Lanka?
(1) seaweeds (2) bats (3) birds
(4) fresh water crabs (5) marine reptiles (2007)

(25) Some international conventions and protocols to which Sril Kanka is signatory, are given in column I of the following table.
The environmental issues addressed by these conventions and protocols are given in column II of the table.

Column I – Convention/protocol	Column II – Issues addressed
A – Montreal protocol	P – Destruction of wetlands.
B – Basel convention	Q – Transboundry movement of hazardous waste.
C – Ramsar convention	R – Release of chlorofluorocarbons into the atmosphered
D - CITES	S – Trading of endangered animals and plants.

The correct order of the issues addressed by the conventions/protocols A, B, C and D is
(1) Q, R, P, S (2) R, P, Q, S (3) S, R, P, Q (4) S, R, Q, P (5) R, Q, P, S (2007)

(26) Which of the following groups of animals became extinct during the mass extinction that took place about 65 million years ago?
(A) ammonites (B) trilobites (C) flying reptiles
(D) dinosaurs (E) primitive bony fish (2007)

(27) Sri Lankan elephants are considered to be
(1) critically endangered organisms. (2) endangered organisms.
(3) vulnerable organisms. (4) conservation dependent organisms.
(5) threatened organisms. (2008)

(28) Of the following groups of organisms, which one became extinct first?
(1) Ammonites (2) Dinosaurs (3) Trilobites
(4) Flying reptiles (5) Mammoths (2008)

(29) At the time of origin of photosynthetic organisms
(1) earth had a reducing atmosphere with hydrogen as the main component.
(2) there were no continents but only oceans on earth.
(3) aerobic bacteria were abundant.
(4) earth atmosphere contained methane in significant amounts.
(5) iron oxides were one of the major components of earth curst. (2010)

(30) The plant species Alphonsea hortensis, which is an extremely rare species, was not found in any wild environment in a survey carried out recently, Which one of the following statements is most likely to be correct regarding this species?
(1) It is an extinct species now.
(2) It can be included in the critically endangered category.
(3) If it is indigenous, it can be included in the extinct in the wild category.
(4) If few plants of this species are present in a cultivation, it can be included in the extinct in the wild category.
(5) Since given information is not adequate, it can be seen in Lycophyta but not in Pterophyta? (2010)

(31) Which one of the following animals is most likely ot ve a keystone species in the Udawalawa National Park '?'
(1) Toque monkey (2) Elephant (3) Peacock
(4) Deer (5) Marsh crocodile (2010)

(32) Some categories of thereatened organisms given in the IUCN red data book with examples are given below. Which one of the following IUCN category – example combinations is correct?
(1) Extinct – Tuatara
(2) Critically endangered – Loggerhead turtle
(3) Endangered – Leatherback turtle
(4) Vulnerable – Asian elephant
(5) Near threatened – morsh crecodile (2011)

(33) Select the group/groups which contains/contain an organism that differs from the other two when endemicity, indigenicity or flagshipness in considered.
(A) Dipterocarpus zeylanicus, Garcinia quesita, Puntius nigrofasciatus
(B) Indian flycatcher, Indian pitta, barn swallow
(C) Loris tardigradus, Caryota urens, Ophicephalus striatus
(D) Oreochromis mossambicus, Chitala chitala, Ichthyophis glutinosus
(E) Bengal tiger, Giant panda, blue magpie (2012)

(34) Which one of the following animals has the highest risk of becoming extinct in the near future?
(1) Leatherback turtle (2) Asian elephant (3) Giant tortoise
(4) Lamp shell (5) Blue magpie (2013)

(35) Which of the following groups of organisms appeared on land first?
(1) Conifers (2) Insects (3) Amphibians (4) Angiosperms (5) Spiders (2013)

(36) Which of the following Acts and Conventions has helped mmost to protect the environment of Sri Lanka?
(1) National Environmental Act (2) Fauna an d Flora Protection Act
(3) CITES (4) Ramsar Convention
(5) Biodiversity Convention (2013)

(37) When the period of origin is considerd, which of the following indicates the correct order of organisms from the oldest to the most recent group?
(1) Bacteria, single celled eukaryotes, mosses, annelids
(2) Lobed fin fishes, amphibians, reptiles, ferns
(3) Vertebrates, terrestrial plants, terrestrial animals, conifers
(4) Gymnosperms, insects, lobed fin fishes, tree ferns
(5) Conifers, amphibians, placental mammals, flowering plants (2014)

(38) Species P was observed to be highly abundant in a small lagoon when sampled in May 2012. When sampled in this lagoon in May 2014, this species was not present but another species Q, which was not present in May 2012 was abundant. Which of the following is the least acceptable reason for the above observations?
(1) Q is a parasitic species which depends only on P.
(2) Q is an invasive species.
(3) P has been overexploited by man.
(4) Intense pollution has occurred in the lagoon.
(5) Salinity of the lagoon has increased. (2014)

(39) Which of the following pairs of organisms are most similar when biodiversity aspects are considered?
(1) *Puntius nigrofasciatus* and *Oreochromis mossambicus*
(2) Giant panda and *Lingula*
(3) Indian pitta and snakehead
(4) *Lantana camara* and *Chitala chitala*
(5) Blue magpie and *Hevea brasiliensis* (2015)

(40) Which of the following statements regarding the time of origin of different group of organisms is incorrect?
(1) Dinosaurs appeared during the same period in which the mammals appeared.
(2) Insects appeared during the Palaeozoic era.
(3) Modern fish originated during the Mesozoic era.
(4) Placental mammals originated during the Cretaceous period.
(5) Conifers appeared during the Mesozoic era. (2016-32)

(41) This question is based on the following species.

A – *Lantana camara* B– *Puntius nigrofasciatus*
C – *Garcinia quaesita* D – *Caretta caretta*
E – *Dermochelys coriacea* E – *Elephas maximus*

Which of the following statements regarding the above species is correct?

(1) Two of the above species are invasive.
(2) Two of the above species are endemic to Sri Lanka.
(3) Two of the above species are critically endangered.
(4) One of the above species is extinct in the wild.
(5) None of the above species is included in the vulnerable category. (2016-35)

(42) Some periods of the history of earth and several groups of organisms are given below. During one or more of these periods, at least one of the groups of organisms indicated against it/them was not living. Select that period / periods.

(A) Permian period : conifers, insects, mammals
(B) Triassic period : reptiles, mammals, modern fish
(C) Cretaceous period : flowering plants, conifers, dinosaurs
(D) Carboniferous period : Gymnosperms, trilobites, amphibians
(E) Cambrian period : terrestrial plants, crustaceans, molluscs (2017-49)

(43) Experiments of Stanley Miller

(1) provided evidence for the theory of spontaneous generation of life.
(2) showed that primodial soup contained a large amount of organic molecules.
(3) showed that organic molecules can be formed from inorganic gases.
(4) provided evidence for the theory presented by Schleiden, Schwann and Virchow.
(5) showed that life originated about 3500 million years ago. (2018-35)

(44) Select the response with three threatened organisms.

(1) Bengal tiger, dodo, Sri Lankan elephant
(2) Black ruby barb, giant tortoise, woolly mammoth
(3) Tilapia, water hyacinth, blue magpie
(4) Giant African land snail, giant panda, Indian fly catcher
(5) Maha madu, Wesak orchid, dusky-striped jungle squirrel (2020-35)

Factors affecting the environmental degradation

(1) An eutrophic lake is

(1) low in dissolved oxygen and rich in nutrients.
(2) rich in dissolved oxygen and poor in flora and fauna.
(3) rich in disolved oxygen and low in nutrients.
(4) low in dissolved oxygen and low in nutrients.
(5) rich in flora but poor in fauna and low in dissolved oxygen. (2000)

(2) Which of the following substances in motor vehicle exhaust fumes causes the most immediate harmful effect on humans?

(1) lead compounds (2) nitrogen oxides (3) carbon monoxide
(4) carbon dioxide (5) sulphur dioxide (2000)

(3) Which is the correct statement regarding air pollution?
(1) Emission of CO_2 into the atmosphere has contributed significantly, to the depletion of ozone layer.
(2) Methane liberated in activities of animal husbandry, contributes to global warming.
(3) Oxides of carbon are chiefly responsible for acid rain in industrial countries.
(4) CO and smoke emissions from vehicles, still do not make a significant contribution towards air pollution in the cities.
(5) Increase in the amount of infre-red radiation is a result of destruction of the ozone layer. (2002)

(4) Chromium was detected in water samples collected from a lagoon. This waster is most likely to be contaminated with
(1) Agrochemicals (2) Leather factory effluents
(3) Domestic sewage (4) Paper factory effluents (5) Oil (2003)

(5) Chlorofluorocarbon mainly contributes to
(1) global warming (2) ozone depletion
(3) acid rain (4) decreased transparency of the atmosphere
(5) climate change. (2004)

(6) Whcih one of the following was respondible for, the first human impact, on the environment?
(1) Domestication of cattle (2) Growing of crop plants (3) Urbanisation
(4) Industrialization (5) Use of CFCs (2006)

(7) Which of the following gases is/are responsible for acid rain?
(A) Carbon dioxide (B) Carbon monoxide (C) Sulphure dioxide
(D) Nitrogen dioxide (E) Ozone (2006)

(8) Which one of the following is least likely to contribute to the rise in sea level?
(1) Reclamation of coastal wetlands.
(2) Burning of fossil fuel.
(3) Denudation of forests.
(4) Release of chlorofluorocarbons into the atmosphere.
(5) Animal husbandry. (2007)

(9) Which one of the following is least affected by clearing of forests?
(1) biodiversity (2) global temperature (3) rainfall pattern
(4) soil pH (5) situation of water bodies (2008)

(10) Which of the following statements regarding air pollutants is correct?
(1) Sulphur dioxide, oxides of nitrogen and chlorofluorocarbon are found to be associated with high incidence of lung cancer.
(2) Hydrocarbons and ozone reduce the resistance of the human body to pneumonia.
(3) Particulate matter and hydrocarbons can be carcinogenic and may reduce primary productivity.
(4) Carbon monoxide and sulphur dioxide cause eye irritation.
(5) Ozone cannot be considered as and air pol lutant because it contributes to the maintenance of the ozone layer in the atmosphere. (2011)

(11) If coal with a high sulphur content is used in coal thermal power plants, which one of the following is most likely to happen?
(1) Reduction of crop harvest (2) Occurrence of skin cancer
(3) Erosion of buildings (4) Impaired vision
(5) Drowsiness (2014)

(12) Clearing of forests contributes to ,
(1) increase the concentration of heavy metals in plants.
(2) skin cancer.
(3) eroding of limestone monuments.
(4) sea level rise.
(5) reduce the range of spread of tropical diseases. (2018-34)

(13) Which of the following is not an environmental service value of biodiversity?
(1) Regulating climate (2) Recharging ground water
(3) Water Purification (4) Helping disaster management
(5) Prevention of soil erosion (2019-37)

Global environmental problems.

(1) Which of the following contribute/contributes to global warning?
(A) Increase in carbon dioxide in the atmosphere
(B) Large scale deforestation
(C) Depletion of ozone in the atmosphere
(D) Use of coal in thermal power plants
(E) Increased penetration of ultraviolet rays into lower levels of the atmosphere (2001)

(2) Acid rain occurs when atmosphere is polluted with
(A) Sulphur dioxide (B) Nitrogen dioxid e (C) Carbon monoxide
(D) Carbon dioxide (E) Ozone (2001)

(3) Which of the following is/are not considered as major global wnvironmental issues?
(A) Increase in CO_2 content in the atmosphere.
(B) Acid rain.
(C) Use of chemical pesticides.
(D) Use of inorganic fertiliser.
(E) Depletion of ozone layer in the upper atmosphere. (2009)

(4) Wmission of sulphur dioxide in large amounts into atmosphere may lead to
(1) sea level rise. (2) change in rainfall pattern.
(3) increase in skin cancer. (4) increase in the incidence of catatact.
(5) destruction of forests. (2010)

(5) Which of the following cannot be attributed to gloval warning?
(1) Tsunami (2) Tropical storms
(3) Spreading of malaria (4) Changes in rainfall pattern
(5) Inundation of coastal lowlands (2012)

(6) Some environmental issues, their causative factors and their impacts are given below.

	Encironmental issue	Causative factor	Impact
a.	Global warning	Water vapour	Changes in distribution of vegetation
b.	Acid rain	Oxides of nitrogen	Reduction in soil fertility
c.	Increase in UV radiation	Chlorofluorocarbon	Reduction of crop yield
d.	Ozone depletion	Methane	Increased incidences of cataract

Which of the above combinations is/are correct?

(1) b only (2) b and d only (3) a, b and d only
(4) a, b and c only (5) b, c and d only (2012)-4

(7) Which of the following air pollutants does not affect agricultural production?

(1) Carbon dioxide (2) Carbon monoxide (3) Sulphur dioxide
(4) Chlorofluorocarbons (5) Oxides of nitrogen (2017-35)

(8) Which of the following does not contribute to global warming?

(1) Depletion of ozone layer (2) Cattle farming
(3) Ozone in the lower atmosphere (4) Growth of phytoplankton
(5) Water vapour in the atmosphere (2019-38)

main protocols and conventions and sustainable use of natural resources.

(1) Which of the following statements is incorrect?

(1) Resources are materials used in everyday life for economic development.
(2) Ecosystems constiture both non – living and living resources.
(3) Soil is a renewable resource.
(4) Water is a non – renewable resource.
(5) Some non – living resources can be recycled. (2001)

(2) Out of the following resources, what can be regenerated?

(A) Forests (B) Soil (C) Oil
(D) Fresh water (E) Craphite (2002)

(3) Sustainable development is best defined as

(1) meeting the present day needs without compromising the ability of future generation to meet their own needs.
(2) The develpoment which promotes equal distribution of benefits of the use of natural resources.
(3) The development achieved with minimum environmental pollution.
(4) Achieving a good standard of living utilizing a minimum amount of resources.
(5) The development achieved with a minimum loss of vidiversity. (2003)

(4) The international convention which helps to control the trans bundary movement of hazardous waste is.

(1) Basel convention (2) Ramsar convention (3) CITES
(4) Montreal protocol (5) Biodiversity convention (2006)

(5) The sustainable development is best defined as the develppment which
(1) lasts for a very long period of tme.
(2) fulfils the needs of the present generations, without compromising the ability to meet those of future ganerations.
(3) is carried out with least usage of renewable resources.
(4) is aimed at developing natural resouces for the use of future generations.
(5) is aimed at conserving viological diversity. (2006)

(6) Which one of the following is a non-living renewable resource?
(1) Solar energy (2) Iron (3) Timber
(4) Fresh water (5) Coal (2006)

(7) Which statement is incorrect?
(1) Living resources can be managed in such a way that they are always renewable.
(2) Hydroelectricity is a renewable energy resource.
(3) Every person has a responsibility in looking after the well-being of the environment.
(4) The problem of rise in sea level, must be solved by individual countrees.
(5) Development projects cannot be carred out without harming the natural enviromment. (2008)

(8) Which one of the following is a non renewable resource?
(1) Soil (2) Coal (3) Timber (4) Fish (5) Fresh water (2009)

(9) Soil is
(1) a non-living non-reneeable resource (2) a non-living renewagle resource.
(3) a non-living inexhaustivle resource. (4) a living renewable resource.
(5) a living non-renewable resource. (2010)

(10) Which of the following international conventions/protocols is concerned with global climatic change?
(1) Basel convention (2) Ciprofloxacin (3) Polymyxin
(4) Erythromycin (5) Clotrimazole (2011)

(11) This question is based on the following statements regarding natural resources.
(a) All non-exhaustible resources are non-living.
(b) All recyclable resources are non-living.
(c) All renewable resources are living.
(d) All living resources are renewable.
(e) All non-living resources are recyclable.
Which of the above statements are correct?
(1) (a) and (b) only (2) (b) and (d) only
(3) (a), (b), (c) and (d) only (4) (a), (b) and (d) only
(5) (a), (b), (d) and (e) only (2012)

(12) Which of the following international agreements may contribute to reduce global warming?
A – Kyoto protocol
B – Basel convention
C – Montreal protocol
D – Cartagena protocol
(1) A only (2) A and B only (3) A and C only
(4) A, B and C only (5) A, B and D only (2020-36)

Unit 8 – Environmental Biology

Different organizational levles and biosphere.

(1) 2 (2) 4 (3) 5 (4) 5 (5) 3

Componants and activities of ecosystems.

(1)	1	(2)	5	(3)	4	(4)	3	(5)	4	(6)	1
(7)	5	(8)	2	(9)	1	(10)	2	(11)	1	(12)	5
(13)	2	(14)	1	(15)	2	(16)	5	(17)	2	(18)	2
(19)	3	(20)	1	(21)	1	(22)	3	(23)	1/2	(24)	2
(25)	3	(26)	3	(27)	2	(28)	5	(29)	4	(30)	5
(31)	1	(32)	1								

Main biomes of the world.

(1)	4	(2)	3	(3)	4	(4)	1	(5)	5	(6)	1
(7)	4	(8)	4	(9)	3	(10)	5	(11)	3	(12)	1

Ecosystems of Sri Lanka.

(1) 2 (2) 3 (3) 5 (4) 5 (5) 4 (6) 1

Biodiversity and conservation.

(1)	2	(2)	2	(3)	4	(4)	1	(5)	4	(6)	2
(7)	2	(8)	5	(9)	4	(10)	4	(11)	1	(12)	2
(13)	2	(14)	4	(15)	2/3	(16)	1	(17)	1	(18)	2
(19)	4	(20)	5	(21)	3	(22)	5	(23)	5	(24)	4
(25)	5	(26)	2	(27)	2	(28)	3	(29)	4	(30)	4
(31)	2	(32)	5	(33)	4	(34)	3	(35)	5	(36)	1
(37)	3, 4	(38)	1	(39)	4	(40)	5	(41)	2	(42)	5
(43)	3	(44)	5								

Factors affecting the environmental degradation

(1)	1	(2)	3	(3)	2	(4)	2	(5)	2	(6)	1
(7)	4	(8)	1	(9)	4	(10)	3	(11)	3	(12)	4
(13)	4										

Global environmental problems.

(1)	5	(2)	3	(3)	4	(4)	5	(5)	1	(6)	4
(7)	2	(8)	4								

main protocols and conventions and sustainable use of natural resources.

(1)	4	(2)	1	(3)	1	(4)	1	(5)	2	(6)	4
(7)	4	(8)	2	(9)	2	(10)	4	(11)	4	(12)	3