

60 DAY RAPID REVISION (RARE) SERIES

UPSC/IAS Prelims 2022

Daily Test Compilation

Week 1 & 2

Environment



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Q.1) Which of the following are examples of adaptations found in the animals?

1. Long curved and sharp claws in Polar bears
2. Large ears of Elephants
3. Huddling behaviour of Penguins
4. Long beak of Toucan bird in rainforests

Select the correct answer using the code given below:

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

Q.1) Solution (d)**Statement Analysis:**

Statement 1	Statement 2	Statement 3	Statement 4
Correct	Correct	Correct	Correct
Polar bears have long curved and sharp claws which help them in walking on ice and to catch and hold prey. Presence of white fur reduces their visibility in the snowy background which helps them in catching prey. It also protects them from the extreme cold.	Elephants have large ears which help the elephant to keep cool in the hot and humid climate of the rainforest. They also help them to hear even very soft sounds.	To prevent themselves freezing to death, penguins huddle together in tightly-packed groups to conserve heat and shelter themselves from the intense winds of the Antarctica. Penguins on the outskirts regularly muscle their way inside the huddle.	As there is competition for food in rainforests, some animals are adapted to get food which is not easily reachable. A striking example is that of the bird Toucan, which possesses a long, large beak. This helps a toucan to reach the fruits on branches which are otherwise too weak to support its weight.

Notes:

Adaptations are found in the natural world among animals, which help them in surviving in their habitat.

Other adaptations found in the animals- are-

Polar bears -

- They also have a layer of fat under their skin. They are so well-insulated that they have to move slowly and rest often to avoid getting overheated. Physical activities on warm days necessitate cooling. So, the polar bear goes for swimming.
- They have a strong sense of smell so that they can catch their prey for food.

Penguins -

- They also have a thick skin and a lot of fat to protect them from cold. Like polar bears, penguins are also good swimmers. Their bodies are streamlined and their feet have webs, making them good swimmers.

Q.2) Consider the following pairs of organisms and their mode of nutrition:

Organism	Mode of nutrition
1. Mushroom	Saprotrophic
2. Insectivorous plants	Parasitic
3. Algae	Autotrophic

Which of the pairs given above is/are correctly matched?

- 1 and 3 only
- 1 and 2 only
- 3 only
- 1, 2 and 3

Q.2) Solution (a)

Statement Analysis:

1.	2.	3.
Mushroom	Insectivorous Plants	Algae
Correct	Incorrect	Correct
Mushroom is a Saprotroph, which means it takes its nutrition from dead and decaying organic matter. It falls under the category of fungus.	Insectivorous plants are partial heterotrophs whereas other plants are autotrophs. Insectivorous plants are not the examples of parasitic nutrition in plants. Parasitic plants cannot photosynthesize and hence, are depended on other living organisms for their nutrition. Insectivorous plants can photosynthesize but lack only	Algae contains chlorophyll can also prepare its own food by photosynthesis. The mode of nutrition in which organisms make food themselves from simple substances is called autotrophic nutrition.

	in nitrogen. So, to fulfil this requirement, they consume the digestive nutrients in the insects.	
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Q.3) Consider the following statements:

1. Fungi lives in symbiosis with the plant and passes phosphorus from the soil to the plant.
2. Azotobacter and Azospirillum are free-living bacteria that fix atmospheric nitrogen in the soil.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.3) Solution (c)**Statement Analysis:**

Statement 1	Statement 2
Correct	Correct
Fungi are known to form symbiotic associations with plants (mycorrhiza) where the fungi absorbs phosphorus from soil and passes it to the plant. Plants having such associations show other benefits also, such as resistance to root-borne pathogens, tolerance to salinity and drought, and an overall increase in plant growth and development.	In addition to nitrogen-fixing bacteria like Rhizobium that live in the plant roots, there are some free-living bacteria in the soil like Azospirillum and Azotobacter that fix atmospheric nitrogen in the soil. These bacteria fix atmospheric nitrogen into organic forms, which is used by the plant as nutrient.

Q.4) Consider the following statements:

1. Detritus food chain begins with dead organic matter.
2. Detritus food chain is made up of decomposers.
3. Decomposers are also known as saprotrophs.

Which of the above statements is/are correct?

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

Q.4) Solution (d)**Statement Analysis:**

Statement 1	Statement 2	Statement 3
Correct	Correct	Correct
Detritus food chain begins with dead organic matter.	Detritus food chain is made up of decomposers.	Decomposers are also known as saprotrophs.

Notes:**Detritus food chain-**

- This type of food chain starts from organic matter of dead and decaying animals and plant bodies from the grazing food chain.
- Dead organic matter or detritus feeding organisms are called detritivores or decomposers.
- The detritivores are eaten by predators.
- In an aquatic ecosystem, the grazing food chain is the major conduit for energy flow.
- As against this, in a terrestrial ecosystem, a much larger fraction of energy flows through the detritus food chain than through the grazing food chain.
- Decomposers are also known as saprotrophs.

Q.5) Consider the following statements regarding Ecological niche:

1. Ecological niche may be defined as the functional role and position of species in its ecosystem.
2. The greater the niche diversity, the less is ecosystem stability.
3. Dominant species occupy an extensive and broader ecological niche in comparison to less dominant species.

Which of the statements given above are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.5) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
Ecological niche may be defined as the functional role and position of species in its ecosystem.	The greater the niche diversity, the more is ecosystem stability because of the larger number of pathways for the flow of energy and less fluctuation of the species population.	Dominant species occupy an extensive and broader ecological niche in comparison to less dominant species.

Notes:**Ecological niche-**

- Ecological niche is a term for the position of a species within an ecosystem, describing both the range of conditions necessary for persistence of the species, and its ecological role in the ecosystem.
- Ecological niche subsumes all of the interactions between a species and the biotic and abiotic environment, and thus represents a very basic and fundamental ecological concept.
- The reason is that ecology is about interactions between organisms, and if persistence of a species is determined by the presence of other species (food sources, competitors, predators, etc.); all species are naturally both affected by environment, and at the same time affect the environment for other species.
- Ecological niche may be defined as the functional role and position of species in its ecosystem.
- Dominant species occupy an extensive and broader ecological niche in comparison to less dominant species.

Q.6) Consider the following statements regarding interdependence of ecological community:

1. Demand for a common resource by different organisms results in competition.
2. Stratification is a practical strategy to minimise intra-specific competition.
3. The dependent species will die if the dominant species are eliminated.

Which of the above statements are correct?

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only

d) 1, 2 and 3

Q.6) Solution (a)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
Demand for a common resource by different organisms results in competition.	Stratification is a practical strategy to minimise interspecific competition i.e competition between different species.	The dependent species will die if the dominant species are eliminated.

Notes:

Interdependence of Ecological Community-

Mutual interdependence includes all the direct and indirect effects that organisms have upon each other. The three such relationships are (a) competition, (b) stratification, and (c) dependence.

- Competition:** Demand for a common resource by different organisms results in competition. Competition between individuals of different species is called interspecific; when it occurs between individuals of the same species it is called intraspecific.
- Stratification:** Different organisms in a community develop a characteristic pattern of stratification to minimise competition and conflict among the members of the community. Plants and animals of each layer differ in size, behaviour and adaptation from those of other layers. Stratification is a practical strategy to minimise interspecific competition i.e competition between different species.
- Dependence:** In a community there are some species which are wholly dependent on the dominant member for survival. Bryophytes, thallophytes and a few vascular small plants are examples of such organisms. These dependent organisms require special conditions such as shade and moisture provided by the dominant species. The dependent species will die if the dominant species are eliminated.

Q.7) Consider the following statements regarding ecological succession:

- In the successive seral stages there is a change in the diversity of species of organisms as well as their biomass.
- At any time during primary or secondary succession, a particular seral stage of succession cannot return to an earlier stage.
- Both hydrarch and xerarch successions lead to mesic community.

4. Climax is reached more quickly in secondary succession than in the primary succession.

Which of the above statements are correct?

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

Q.7) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
Correct	Incorrect	Correct	Correct
In the successive seral stages there is a change in the diversity of species of organisms as well as their biomass.	Natural or human induced disturbances can convert a particular seral stage of succession to an earlier stage.	Both hydrarch and xerarch successions lead to mesic community.	Climax is reached more quickly in secondary succession than in the primary succession.

Notes:

Ecological Succession-

- The gradual and fairly predictable change in the species composition of a given area is called ecological succession.
- During succession some species colonise an area and their population become more numerous whereas populations of other species decline and even disappear.
- The entire sequence of communities that successively change in a given area are called sere(s). The individual transitional communities are termed seral stages or seral communities. In the successive seral stages there is a change in the diversity of species of organisms, increase in the number of species and organisms as well as an increase in the total biomass.
- The present day communities in the world have come to be because of succession that has occurred over millions of years since life started on earth. Actually succession and evolution would have been parallel processes at that time. Succession is hence a process that starts in an area where no living organisms are there – these could be areas where no living organisms ever existed, say bare rock; or in areas that somehow, lost all the living organisms that existed there. The former is called primary succession, while the latter is termed secondary succession.
- Examples of areas where primary succession occurs are newly cooled lava, bare rock, newly created pond or reservoir. The establishment of a new biotic community is

generally slow. Before a biotic community of diverse organisms can become established, there must be soil. Depending mostly on the climate, it takes natural processes several hundred to several thousand years to produce fertile soil on bare rock.

- Secondary succession begins in areas where natural biotic communities have been destroyed such as in abandoned farm lands, burned or cut forests, lands that have been flooded. Since some soil or sediment is present, succession is faster than primary succession.
- At any time during primary or secondary succession, natural or human induced disturbances (fire, deforestation, etc.), can convert a particular seral stage of succession to an earlier stage. Also such disturbances create new conditions that encourage some species and discourage or eliminate other species.
- Based on the nature of the habitat – whether it is water (or very wet areas) or it is on very dry areas – succession of plants is called hydrarch or xerarch, respectively. Hydrarch succession takes place in wet areas and the successional series progress from hydric to the mesic conditions. As against this, xerarch succession takes place in dry areas and the series progress from xeric to mesic conditions. Hence, both hydrarch and xerarch successions lead to medium water conditions (mesic) – neither too dry (xeric) nor too wet (hydric).
- The species that invade a bare area are called pioneer species. In primary succession on rocks these are usually lichens which are able to secrete acids to dissolve rock, helping in weathering and soil formation. In primary succession in water, the pioneers are the small phytoplanktons, which are replaced with time by rooted-submerged plants, rooted-floating angiosperms followed by free-floating plants, then reedswamp, marsh-meadow, scrub and finally the trees. The climax again would be a forest.
- In secondary succession the species that invade depend on the condition of the soil, availability of water, the environment as also the seeds or other propagules present. Since soil is already there, the rate of succession is much faster and hence, climax is also reached more quickly.
- All succession whether taking place in water or on land, proceeds to a similar climax community – the mesic.

Q.8) Consider the following statements regarding Biomagnifications:

1. It is the process of a build up of certain chemical substances or toxins at the higher trophic levels of a food chain.
2. In order for biomagnifications to occur, the pollutants must be short-lived.

Which of the above statements is/are *incorrect*?

- a) 1 only
- b) 2 only

- c) Both 1 and 2
- d) Neither 1 nor 2

Q.8) Solution (b)**Statement Analysis:**

Statement 1	Statement 2
Correct	Incorrect
Biomagnification is the process of a build up of certain chemical substances or toxins at the higher trophic levels of a food chain.	In order for biomagnifications to occur, the pollutants must be long-lived.

Notes:**Biomagnifications-**

- It refers to the tendency of pollutants to concentrate as they move from one trophic level to the next.
- In biomagnifications there is an increase in concentration of a pollutant from one link in a food chain to another. In order for biomagnifications to occur, the pollutant must be:
 - long-lived
 - Mobile
 - soluble in fats
 - Biologically active
- It can be seen in the case of Mercury or DDT. The concentration of Mercury/DDT increases at the successive trophic levels. DDT concentration in zooplankton gets magnified when DDT contaminated water is consumed by the Zooplanktons. In the successive trophic levels like, small fish, big fish, and at top carnivore, the magnification is much higher, which proves the event of Biomagnifications.
- A pollutant having properties like long life, mobile, soluble in fat, biologically active will lead to the process of biomagnifications.

Q.9) Consider the following statements regarding organic farming:

1. India ranks first in number of organic farmers and ninth in terms of area under organic farming.
2. Major organic exports from India are flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses.

Which of the above statements is/are correct?

- a) 1 only

- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.9) Solution (c)**Statement Analysis:**

Statement 1	Statement 2
Correct	Correct
India ranks first in number of organic farmers and ninth in terms of area under organic farming.	Major organic exports from India are flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses.

Notes:**Organic Farming-**

- India ranks first in number of organic farmers and ninth in terms of area under organic farming.
- Sikkim became the first State in the world to become fully organic and other States including Tripura and Uttarakhand have set similar targets.
- With the aim of assisting farmers to adopt organic farming and improve remunerations due to premium prices, two dedicated programs namely Mission Organic Value Chain Development for North East Region (MOVCD) and Paramparagat Krishi Vikas Yojana (PKVY) were launched in 2015 to encourage chemical free farming.
- With the simultaneous thrust given by the Agri-export Policy 2018, India can emerge as a major player in global organic markets.
- The major organic exports from India have been flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses, which were instrumental in driving an increase of nearly 50% in organic exports in 2018-19.

Q.10) Consider the following statements:

1. Photosynthesis
2. Respiration
3. Decay of organic matter
4. Volcanic action

Which of the above add carbon dioxide to the carbon cycle on Earth?

- a) 1 and 4 only
- b) 2 and 3 only

- c) 2, 3 and 4 only
d) 1, 2, 3 and 4

Q.10) Solution (c)**Statement Analysis:**

1.	2.	3.	4.
Photosynthesis	Respiration	Decay of organic matter	Volcanic action
Incorrect	Correct	Correct	Correct
Photosynthesis takes out CO ₂ from the carbon cycle.	Respiration adds CO ₂ to the carbon cycle on Earth.	Decay of organic matter adds CO ₂ to the carbon cycle on Earth.	Volcanic action adds CO ₂ to the carbon cycle on Earth.

Notes:**Carbon cycle-**

- Carbon is a minor constituent of the atmosphere as compared to oxygen and nitrogen.
- However, without carbon dioxide life could not exist because it is vital for the production of carbohydrates through photosynthesis by plants.
- It is the element that anchors all organic substances from coal and oil to DNA (deoxyribonucleic acid: the compound that carries genetic information).
- Carbon is present in the atmosphere, mainly in the form of carbon dioxide (CO₂).
- Carbon cycle involves a continuous exchange of carbon between the atmosphere and organisms.
- Carbon from the atmosphere moves to green plants by the process of photosynthesis, and then to animals.
- By process of respiration and decomposition of dead organic matter, it returns to the atmosphere. It is usually a short term cycle.
- Some carbon also enters a long term cycle. It accumulates as un-decomposed organic matter in the peaty layers of marshy soil or as insoluble carbonates in bottom sediments of aquatic systems which take a long time to be released.
- In deep oceans, such carbon can remain buried for millions of years till geological movement may lift these rocks above sea level.
- These rocks may be exposed to erosion, releasing their carbon dioxide, carbonates and bicarbonates into streams and rivers.
- Fossil fuels such as coals, oil and natural gas etc. are organic compounds that were buried before they could be decomposed and were subsequently transformed by time and geological processes into fossil fuels. When they are burned the carbon stored in them is released back into the atmosphere as carbon dioxide.

Q.11) Nitrogen deficiency can be prevented by using organic methods which requires time, but it result in a more even distribution of the added nitrogen over time. Which of the following organic methods are used for adding nitrogen to the soil:

1. Adding composted manure to the soil
2. Planting a green manure crop, such as borage
3. Planting nitrogen fixing plants like peas or beans
4. Adding coffee grounds to the soil
5. Adding Nitrogen as a Plant Fertilizer

Select the correct code:

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

Q.11) Solution (d)

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4	Statement 5
Correct	Correct	Correct	Correct	Incorrect
Organic method	Organic method	Organic method	Organic method	Non-organic method

Notes:

Nitrogen fixation-

- Plants need nitrogen to make themselves. Without nitrogen, a plant cannot make the proteins, amino acids and even its very DNA.
- This is why when there is a nitrogen deficiency in the soil, plants are stunted. They simply cannot make their own cells. If there is nitrogen all around us, as it makes up 78 percent of the air we breathe.
- In order for plants to use the nitrogen in the air, it must be converted in some way to nitrogen in the soil. This can happen through nitrogen fixation, or nitrogen can be 'recycled' by composting plants and manure.
- There are two routes to go when fixing a nitrogen deficiency in the soil, either organic or non-organic.
 - **Organic:**
To correct a nitrogen deficiency using organic methods requires time, but will result in a more even distribution of the added nitrogen over time.
 - Adding composted manure to the soil

- Planting a green manure crop, such as borage
- Planting nitrogen fixing plants like peas or beans
- Adding coffee grounds to the soil
- **Non-Organic:**
Using a nitrogen fertilizer to fix a nitrogen deficiency in the soil will give a big, fast boost of nitrogen to the soil, but will fade quickly.

Q.12) Which of the following statements is/are correct regarding Ecological Pyramids?

1. The pyramid of number is upward in the forest ecosystem.
2. The pyramid of biomass is inverted in aquatic ecosystem.
3. Pyramid of number is inverted in grassland ecosystem.
4. Pyramid of biomass is upright in grassland ecosystem.

Select the correct answer using the code given below:

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

Q.12) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
Correct	Correct	Incorrect	Correct
The pyramid of number is upward in the forest ecosystem.	The pyramid of biomass is inverted in aquatic ecosystem.	A pyramid of numbers is upright in grassland ecosystem.	Pyramid of biomass is upright in grassland ecosystem.

Notes:

Ecological Pyramids-

- Pyramid of numbers shows the number of the producers, herbivores and the carnivores at their successive Trophic levels. This pyramid can be either upright, or inverted or partially upright.
- In a forest ecosystem, the producers are large size trees which make the base of Pyramid. The herbivores such as fruit eating birds, deer, elephants etc. make the primary consumers and are less than primary producers. After that, the number goes down at each successive level. Thus the pyramid of number is upright in the forest ecosystem.

- In a grassland ecosystem, the number of producers (mainly grasses) is always maximum, followed by decreasing numbers at second Trophic level (herbivores), third Trophic level (carnivores) and least number of apex predators. Thus, a pyramid of numbers is upright in grassland ecosystem.
- Pyramid of Biomass shows the biomass of the producers, herbivores and the carnivores at their successive Trophic levels.
- Pyramid of biomass for terrestrial ecosystems (grasslands, forests) the biomass generally decreases at each higher Trophic level from plants via herbivores to carnivores. Thus the Pyramid of biomass is upright in grassland ecosystem.
- In the aquatic system, the biomass can increase at higher Trophic levels. For example, in Oceans, the food chain typically starts with phytoplankton and ends at predatory fish, which has largest biomass. Thus, the pyramid of biomass is inverted in the aquatic systems including marine, ponds etc.

Q.13) Consider the following statements regarding Food Chain and Food Web:

1. A food chain represents only one part of the food or energy flow through an ecosystem.
2. Food web is a connection of multiple food chains whereas Food chain is a linear sequence of organisms.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.13) Solution (c)

Statement Analysis:

Statement 1	Statement 2
Correct	Correct
A food chain represents only one part of the food or energy flow through an ecosystem.	Food web is a connection of multiple food chains whereas Food chain is a linear sequence of organisms.

Notes:

Food Chain and Food web-

- Organisms in the ecosystem are related to each other through feeding mechanism or trophic levels, i.e. one organism becomes food for the other. A sequence of organisms that feed on one another, form a food chain.
- Food chain is a linear sequence of organisms which starts from producer organisms and ends with decomposer species.
- Food web is a connection of multiple food chains. Food chain follows a single path whereas food web follows multiple paths.
- From the food chain, we get to know how organisms are connected with each other.
- Food chain and food web form an integral part of this ecosystem
- A food chain represents only one part of the food or energy flow through an ecosystem and implies a simple, isolated relationship.
- An ecosystem may consist of several interrelated food chains. More typically, the same food resource is part of more than one chain, especially when that resource is at the lower trophic levels.
- A food web illustrates, all possible transfers of energy and nutrients among the organisms in an ecosystem, whereas a food chain traces only one pathway of the food.

Q.14) Consider the following statements regarding Organic Farming:

1. Organic farming is an integrated farming system that strives for sustainability, enhancement of soil fertility and biological diversity.
2. It relies primarily on local renewable resources.
3. It maximizes recycling of plant nutrients and organic matter.
4. It uses genetically modified organisms and plant growth regulators to optimize agricultural productivity.

Which of the above statements are correct?

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

Q.14) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
Correct	Correct	Correct	Incorrect

Organic farming is an integrated farming system that strives for sustainability, enhancement of soil fertility and biological diversity.	It relies primarily on local renewable resources.	It maximizes recycling of plant nutrients and organic matter.	Genetically modified organisms and plant growth regulators are prohibited in Organic Farming.
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Notes:**Organic farming-**

Organic farming is a holistic system designed to optimize the agricultural productivity and to reduce the impacts on diverse communities like soil organisms, plants, livestock and humans. Organic farming is a contemporary method of crop and livestock production that involves tools which do not use chemicals and artificial tools of cropping. It is an integrated farming system that strives for sustainability, enhancement of soil fertility and biological diversity.

Key characteristics of organic farming are:

- It relies primarily on local, renewable resources
- It makes efficient use of solar energy and the production potential of biological systems
- It maintains the fertility of the soil
- It maximizes recycling of plant nutrients and organic matter
- It does not use organisms or substances foreign to nature (e.g GMOs, chemical fertilizers or pesticides)

Substances which are prohibited in organic farming are:

- Chemical fertilizers and pesticides
- Genetically modified organisms
- Nanomaterials

Q.15) An invasive species can be any kind of living organism that is not native to an ecosystem and causes harm. Consider the following statements:

1. An invasive species does not have to come from another country.
2. Higher average temperatures and changes in rain and snow patterns caused by climate change will enable some invasive plant species to move into new areas.

Which of the above statement/s is/are correct?

- a) 1 only
- b) 2 only

- c) Both 1 and 2
- d) Neither 1 nor 2

Q.15) Solution (c)**Statement Analysis:**

Statement 1	Statement 2
Correct	Correct
An invasive species does not have to come from another country.	Higher average temperatures and changes in rain and snow patterns caused by climate change will enable some invasive plant species to move into new areas.

Notes:**Invasive Species-**

- Invasive species have devastating effects on wildlife.
- Human health and economies are also at risk from invasive species. Many of our commercial, agricultural, and recreational activities depend on healthy native ecosystems.
- Species that grow and reproduce quickly, and spread aggressively, with potential to cause harm, are given the label “invasive.”
- An invasive species does not have to come from another country.
- Invasive species are primarily spread by human activities, often unintentionally. People, and the goods we use, travel around the world very quickly, and they often carry uninvited species with them.
- When a new and aggressive species is introduced into an ecosystem, it may not have any natural predators or controls.
- It can breed and spread quickly, taking over an area. Native wildlife may not have evolved defenses against the invader, or they may not be able to compete with a species that has no predators.
- One way to curb the spread of invasive species is to plant native plants and remove any invasive plants in your garden.

Q.16) ‘Ecotone is a transitional area between two different ecosystems’, consider the following statements with respect to the Ecotone:

1. An Ecotonal area has a higher density organism of one species and a greater number of species than are found in either flanking community.
2. Ecotones don’t appear where one body of water meets another.
3. Grasslands represent an ecotone between forest and desert ecosystem.

Which of the above statements are correct?

- a) 2 and 3 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.16) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
An Ecotonal area has a higher density organism of one species and a greater number of species than are found in either flanking community.	Ecotone also appears where one body of water meets another at boundary between the water and land.	Grasslands represent an ecotone between forest and desert ecosystem.

Notes:

Ecotone-

- An Ecotone is a transitional area of different Ecosystems, such as forest and grasslands.
- An Ecotone may exist along a broad belt or in a small pocket, such as forest clearing, whereas two local communities blend together. Ecotone may be very narrow or quite wide. It has conditions intermediate to the adjacent ecosystems. Hence it is a zone of tension.
- An Ecotonal area often has a higher density organism of one species and a greater number of species than are found in either flanking community. This tendency for increased diversity within the ecosystem is referred to as the 'Edge effect'.
- Ecotone often has a large number of species and larger population densities than the communities on either side.
- Ecotone also appears where one body water meets another at boundary between the water and land ex: marshes.
- Grasslands is an ecotone between forest and desert ecosystem.

Q.17) In the context of environment and ecology, consider the following statements regarding 'standing crop':

1. It is the total amount of food grains available in a region at a given point intime.
2. It is measured in terms of the mass of living organisms.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.17) Solution (b)

Statement Analysis:

Statement 1	Statement 2
Incorrect	Correct
Each trophic level has a certain mass of living material at a particular time called as the standing crop. A standing crop is the total dried biomass of the living organisms present in a given environment. It is not limited to the food grains.	The standing crop is measured as the mass of living organisms (biomass) or the number in a unit area. The biomass of a species is expressed in terms of fresh or dry weight.

Note:

The total amount or weight, or energy content, of (a portion of) organisms existing in a specific area at a particular time, is known as standing crop.

Q.18) With reference to the phosphorous cycle, consider the following statements:

1. Rocks are the natural reservoir of phosphorous.
2. Phosphorous is primarily exchanged between organisms and the environment through respiration.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.18) Solution (a)

Statement Analysis:

Statement 1	Statement 2
Correct	Incorrect

The natural reservoir of phosphorus is rock, which contains phosphorus in the form of phosphates.

Unlike carbon cycle, there is no respiratory release of phosphorus into the atmosphere.

Notes:

Phosphorus Cycle-

- Phosphorus is a major constituent of biological membranes, nucleic acids and cellular energy transfer systems. Many animals also need large quantities of this element to make shells, bones and teeth. The natural reservoir of phosphorus is rock, which contains phosphorus in the form of phosphates.
- When rocks are weathered, minute amounts of these phosphates dissolve in soil solution and are absorbed by the roots of the plants. Herbivores and other animals obtain this element from plants. The waste products and the dead organisms are decomposed by phosphate-solubilising bacteria releasing phosphorus.
- Unlike carbon cycle, there is no respiratory release of phosphorus into the atmosphere. The other two major and important differences between carbon and phosphorus cycle are firstly, atmospheric inputs of phosphorus through rainfall are much smaller than carbon inputs, and, secondly, gaseous exchanges of phosphorus between organism and environment are negligible.

Q.19) Consider the following pairs:

Name of Interaction

Activity

- | | |
|-----------------------|-------------------------------------|
| 1. Mutualism | Both the species are benefitted |
| 2. Amensalism | Both the species are unaffected. |
| 3. Competition | Both the species are disadvantaged. |

Which of the pairs given above is/are correctly matched?

- 1 only
- 1 and 3 only
- 2 and 3 only
- 1 and 2 only

Q.19) Solution (b)

Statement Analysis:

1.	2.	3.
Mutualism	Amensalism	Competition
Correct	Incorrect	Correct

Both the species are benefitted	One species is harmed whereas the other is unaffected	Both the species are disadvantaged.
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Notes:

Species A	Species B	Name of Interaction
+	+	Mutualism
-	-	Competition
+	-	Predation
+	-	Parasitism
+	0	Commensalism
-	0	Ammensalism

Q.20) With reference to 'Carrying Capacity' of an environment, consider the following statements:

1. It is the maximum population size of biological species that can be sustained in that specific environment.
2. The carrying capacity is different for each species in a given habitat.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.20) Solution (c)

Statement Analysis:

Statement 1	Statement 2
Correct	Correct
It is the maximum population size of biological species that can be sustained in that specific environment.	The carrying capacity is different for each species in a given habitat.

Notes:

The carrying capacity of an environment is the maximum population size of a biological species that can be sustained in that specific environment, given the food, habitat, water, and other resources available.

The carrying capacity is different for each species in a habitat because of that species' particular food, shelter, and social requirements. Disease, competition, predator-prey interaction, resource use and the number of populations in an ecosystem all affect carrying capacity. It does not relate to the diversity of species. Important direct drivers affecting biodiversity are habitat change, climate change, invasive species, overexploitation, and pollution.

Populations grow through births and immigration and decline through deaths and emigration. When resources are unlimited, the growth is usually exponential but when resources become progressively limiting, the growth pattern turns logistic. The intrinsic rate of natural increase (r) is a measure of the inherent potential of a population to grow. The 'intrinsic rate of natural increase' is a very important parameter chosen for assessing impacts of any biotic or abiotic factor on population growth.

Q.21) Arrange the following organisms chronologically in terms of their evolutionary periods:

1. Fishes
2. Birds
3. Corals
4. Flowering plants

Select the correct answer using the code given below:

- a) 3-1-2-4
- b) 3-1-4-2
- c) 1-3-2-4
- d) 1-3-4-2

Q.21) Solution (a)

Explanation:

Chronologically, the following organisms evolved in the sequence given below -

- Corals
- Fishes
- Birds
- Flowering plants

Q.22) Which of the following statements is correct regarding Wetlands as mentioned in the Wetlands (Conservation and Management) Rules, 2017?

- a) A wetland includes areas of marine water, the depth of which at low tide does not exceed six meters.

- b) A wetland includes river channels and paddy fields.
- c) A wetland includes man-made water bodies/tanks specifically constructed for drinking water purposes.
- d) A wetland includes man-made structures specifically constructed for aquaculture and salt production.

Q.22) Solution (a)**Explanation:****Wetlands (Conservation and Management) Rules, 2017:**

- A wetland includes areas of marine water the depth of which at low tide does not exceed six meters.
- According to the Convention, wetlands include almost any habitat where water is a key to the environment and its wildlife.
- Wetlands include swamps, marshes, billabongs, lakes, salt marshes, mud flats, mangroves, coral reefs, fens, peat bogs, or bodies of water - whether natural or artificial, permanent or temporary.
- Water within these areas can be static or flowing; fresh, brackish or saline; and can include inland rivers and coastal or marine water to a depth of six metres at low tide. There are even underground wetlands.
- Anywhere from estuaries, lakes and rivers to underground aquifers, mangroves, coral reefs and rice paddies count.

Q.23) Consider the following statements:

1. Benthos is unattached organisms that live at the air-water interface.
2. Nektons are those animals that are able to swim and move independently of water currents.
3. Neustons are organisms that live at the bottom of the water mass.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

Q.23) Solution (b)**Statement Analysis:**

Statement 1	Statement 2	Statement 3
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Incorrect	Correct	Incorrect
Benthic organisms are those found living at the bottom of the water mass.	Nektons are those animals that are able to swim and move independently of water currents.	Neustons live at the air-water interface, e.g floating plants.

Notes:

Periphyton: These are organisms which remain attached to stems and leaves of rooted plants or substances emerging above the bottom mud such as sessile algae.

Plankton: Microscopic floating organisms such as algae, diatoms, protozoans and larval forms are called plankton. This group includes both microscopic plants like algae (phytoplankton) and animals like crustaceans and protozoans (zooplankton).

Q.24) Consider the following statements regarding coral reefs:

1. Corals generally flourish in clear temperate oceans.
2. Warmer water temperatures can result in coral bleaching.
3. Not all bleaching events are due to warm water.

Which of the statements given above are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.24) Solution (b)**Statement Analysis:**

Statement 1	Statement 2	Statement 3
Incorrect	Correct	Correct
Corals generally flourish in clear tropical oceans usually between 30°N and 30°S of the equator.	Warmer water temperatures can result in coral bleaching. When water is too warm, corals will expel the algae (zooxanthellae) living in their tissues causing the coral to turn completely white.	Not all bleaching events are due to warm water.

Q.25) Consider the following statements:

1. Wular Lake is one of the biggest freshwater lakes in Asia.
2. Chilika Lake is the largest saline water lake in India.
3. Vembanad Lake is a notified National Geo-heritage Monument.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.25) Solution (a)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Correct	Incorrect
Wular Lake is one of the biggest freshwater lakes in Asia.	Chilika Lake is the largest saline water lake in India.	Lonar Lake is a notified National Geo-heritage Monument, saline, soda lake, located at Lonar in Buldhana district, Maharashtra.

Q.26) Consider the following statements regarding Ramsar Convention:

1. It is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
2. Bird life international provides administrative services to it.
3. 2nd February is celebrated as World Wetlands Day.
4. Recently, all the UN member states have acceded to become 'Contracting Parties'.

Which of the above statements are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 and 4 only
- d) 2 and 3 only

Q.26) Solution (b)

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
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Correct	Incorrect	Correct	Incorrect
It is an intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.	IUCN provides administrative services to it.	2nd February is celebrated as World Wetlands Day.	Almost 90% of UN member states, from all the world's geographic regions, have acceded to become 'Contracting Parties'.

Notes:**Ramsar convention:**

- The Convention on Wetlands is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
- The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Since then, almost 90% of UN member states, from all the world's geographic regions, have acceded to become 'Contracting Parties'.
- Every three years, representatives of the contracting parties meet as the Conference of the Contracting Parties (COP), the policy-making organ of the convention which adopts decisions (resolutions and recommendations) to administer the work of the convention and improve the way in which the parties are able to implement its objectives.
- The Ramsar Convention works closely with six other organisations known as International Organization Partners (IOPs). These are:
 1. BirdLife International.
 2. International Union for Conservation of Nature (IUCN).
 3. International Water Management Institute (IWMI)
 4. Wetlands International
 5. WWF International
 6. Wildfowl & Wetlands Trust (WWT)

Q.27) Consider the following statements regarding Photic and Aphotic Zone of aquatic ecosystem:

1. Photic Zone is the upper layer of the aquatic ecosystems
2. Only photosynthesis takes place in the photic zone.
3. Aphotic zone is a region of oxygen consumption.

Which of the above statements are correct?

- a) 1 and 2 only

- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.27) Solution (c)**Statement Analysis:**

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
Photic Zone is the upper layer of the aquatic ecosystems.	Both photosynthesis and respiration activity takes place in Photic Zone.	Aphotic zone is a region of oxygen consumption.

Notes:**Photic zone:**

- It is the upper layer of the aquatic ecosystems, up to which light penetrates and within which photosynthetic activity is confined.
- The depth of this zone depends on the transparency of water. Both photosynthesis and respiration activity takes place.
- Photic (or 'euphotic') zone is the lighted and usually well-mixed portion that extends from the lake surface down to where the light level is 1% of that at the surface.

Aphotic zone:

- The lower layers of the aquatic ecosystems, where light penetration and plant growth are restricted form the aphotic zone. Only respiration activity takes place.
- Aphotic zone is positioned below the littoral and photic zones to bottom of the lake where light levels are too low for photosynthesis.
- Respiration occurs at all depths so the aphotic zone is a region of oxygen consumption. This deep, unlit region is also known as the profundal zone.

Q.28) Which of the following statements are correct regarding Mangroves?

1. Mangrove plants have Pneumatophores roots which help to enhance deposition of sediment in area.
2. Mangroves grow in areas with low oxygen soil.
3. They occur only in shallow Tropical areas where the sea water is clean, clear and warm.

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.28) Solution (b)**Statement Analysis:**

Statement 1	Statement 2	Statement 3
Incorrect	Correct	Correct
Mangroves have breathing roots also called aerial roots which is defined as a root which, for part of the day, is exposed to the air.	Mangroves grow in areas with low oxygen soil.	They occur only in shallow Tropical areas where the sea water is clean, clear and warm.

Q.29) Which of the following is/are the causes of coral bleaching?

1. Excessive sedimentation in the reef ecosystem.
2. Excess nutrients like ammonia and nitrates entering the reef system.
3. Increased exposure to Ultraviolet (UV) radiation.

Select the correct answer using the code given below.

- a) 1 only
- b) 1 and 2 only
- c) 2 only
- d) 1, 2 and 3

Q.29) Solution (d)**Explanation:****Causes of coral bleaching:**

- There are a number of stresses or environmental changes that may cause bleaching. These causes include disease, excess shade, increased levels of ultraviolet radiation, sedimentation, pollution, salinity changes, and increased temperatures.
- Increased exposure to ultraviolet (UV) radiation;
- Large amounts of stormwater from heavy rains flooding the reef;
- The exposure of coral to certain chemicals or diseases;
- Sediments such as sand or dirt covering the coral;

- Excess nutrients such as ammonia and nitrate from fertilizers and household products entering the reef ecosystem. (The nutrients might increase the number of zooxanthellae in the coral, but it is possible that the nutrient overload increases the susceptibility of coral to diseases.)

Q.30) Which of the following are examples of a lotic water ecosystem?

1. Rivers
2. Creeks
3. Springs
4. Marshes

Select the correct answer using the code given below.

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

Q.30) Solution (a)

Statement Analysis:

1. Rivers	2. Creeks	3. Springs	4. Marshes
Correct	Correct	Correct	Incorrect
Lotic	Lotic	Lotic	Lentic

Notes:

Freshwater ecosystems can be divided into two categories:

Lentic ecosystem:

- It entails a body of standing water, ranging from ditches, seeps, ponds, seasonal pools, basin marshes, swamp and lakes.
- These are also known as Pond ecosystem.

Lotic ecosystem:

- It can be any kind of moving water, such as a run, creek, brook, river, spring, channel or stream.
- The water in a lotic ecosystem, from source to mouth, must have atmospheric gases, turbidity, longitudinal temperature gradation and material dissolved in it.

Q.31) Consider the following statements to Society of Integrated Coastal Zone Management (SICOM):

1. SICOM is the National Project Management Unit of the Integrated Coastal Zone Management (ICZM) project.
2. Its objective is to check violations to CRZ (Coastal Regulation Zone) through improved technology-enabled enforcement.
3. It has been established under the aegis of the Ministry of Environment, Forests and Climate Change.

Which of the statements given above are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.31) Solution (d)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Correct	Correct
SICOM is the National Project Management Unit of the Integrated Coastal Zone Management (ICZM) project.	Its objective is to check violations to CRZ (Coastal Regulation Zone) through improved technology-enabled enforcement.	It has been established under the aegis of the Ministry of Environment, Forests and Climate Change.

Q.32) Which of the following statement is *incorrect* regarding the Phytoplanktons?

- a) It refers to the group of organisms which float in the surface waters of rivers and oceans.
- b) Phytoplanktons can be bacteria, protists or single-celled plants.
- c) They are limited to the uppermost layers of the oceans where light intensity is sufficient for photosynthesis to occur.
- d) They do not require any inorganic nutrients for growth and reproduction.

Q.32) Solution (d)

Statement Analysis:

a)	b)	c)	d)
Correct	Correct	Correct	Incorrect
Phytoplanktons refer to the group of organisms which float	Phytoplanktons can be bacteria, protists	They are limited to the uppermost layers of the oceans where	They do require inorganic nutrients

in the surface waters of rivers and oceans.	or single-celled plants.	light intensity is sufficient for photosynthesis to occur.	is for growth and reproduction.
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Q.33) Consider the following statements about Subtidal Zone:

1. It is the upper most part of neritic zone and below the ocean's intertidal zone.
2. This zone is never exposed to the atmosphere.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.33) Solution (b)

Statement Analysis:

Statement 1	Statement 2
Incorrect	Correct
Subtidal zone is the Lower most part of neritic zone and below the ocean's intertidal zone.	This zone is never exposed to the atmosphere.

Notes:

Zones of the ocean:

- **Infralittoral zone**- This zone is dominated by the algae and has depth of about 16.40 feet below the low water mark.
- **Circalittoral zone**- This zone is dominated by the sessile animals like Oysters.
- **Subtidal zone**- It is the lower most part of neritic zone and below the ocean's intertidal zone. This zone is never exposed to the atmosphere.

Q.34) If a wetland of international importance is brought under the 'Montreux Record', what does it imply?

- a) Changes in ecological character have occurred, are occurring or likely to occur in the wetland as a result of human interference.

- b) The country in which the wetland is located should enact a law to prohibit any human activity within 5 kilometers from the wetland.
- c) It is given the status of 'world heritage site'.
- d) None of the above.

Q.34) Solution (a)**Explanation:****Montreux record:**

- The Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- It is the principle tool under the Ramsar convention for highlighting wetlands sites in need of priority conservation status. It is maintained as part of the Ramsar Database and is subject to continuous review.
- It is maintained as part of the Ramsar List.
- At present 2 Indian sites are listed under it. (Loktak Lake, Manipur and Keoladeo National Park, Rajasthan)
- In 1993 Chilka lake was also listed in Montreux record due to problem of Siltation. But later in 2002, it was removed from the list as problem tackled by government actions.

Q.35) Which of the following biomes is/are present in India?

1. Coniferous Forests
2. Alpine Meadows
3. Temperate Forests
4. Tropical Humid Forests

Select the correct answer using the code given below:

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

Q.35) Solution (c)**Statement Analysis:**

Biomes	Status
Coniferous Forests	Present

Alpine Meadows	Present
Temperate Forests	Not Present
Tropical Humid Forests	Present

Biomes of India:

- The term biome means the main groups of plants and animals living in areas of certain climate patterns.
- It includes the way in which animals, vegetation and soil interact together.
- The plants and animals living in the area are adapted to that environment.
- The five biomes of India are:
 1. Tropical Humid Forests
 2. Tropical Dry or Deciduous Forests (including Monsoon Forests)
 3. Warm deserts and semi-deserts
 4. Coniferous forests and
 5. Alpine meadows

Q.36) Which of the following statements is/are correct regarding Coastal Regulation Zone?

1. The Coastal Regulation Zone-I is Ecologically Sensitive Area which lie between low and high tide line.
2. The Coastal Regulation Zone IV is the territorial area under which Exploration of natural gas and extraction of salt are permitted.
3. States have the authority to approve proposals for urban (CRZ-II) and rural (CRZ-III) areas.

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.36) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
The Coastal Regulation Zone-I is Ecologically Sensitive Area which lie between low and high tide line.	The Coastal Regulation Zone I is the territorial area under which Exploration of natural gas and extraction of salt are permitted.	States have the authority to approve proposals for urban (CRZ-II) and rural (CRZ-III) areas.

Coastal Regulation Zone:

CRZ along the country has been placed in four categories, which are as follows:

1. CRZ I - Ecologically Sensitive Areas

- They lie between low and high tide line.
- Exploration of natural gas and extraction of salt are permitted.

2. CRZ II - Shore Line Areas

- The areas that have been developed up to or close to the shoreline.
- Unauthorized structures are not allowed to construct in this zone.

3. CRZ III - Undisturbed Area

- Rural and Urban localities which fall outside I and II.
- Only certain activities related to agriculture even some public facilities are allowed in this zone.

4. CRZ IV - Territorial Area

- An area covered between Low Tide Line and 12 Nautical Miles seaward.
- Fishing and allied activities are permitted in this zone.
- Solid waste should be let off in this zone.

Changes made to the regulatory framework-

- The system of granting clearances has been changed. States will have the authority to approve proposals for urban (CRZ-II) and rural (CRZ-III) areas.
- The Ministry of Environment, Forests and Climate Change will grant clearances for ecologically sensitive areas (CRZ-I), and areas falling between the low tide line and 12 nautical miles seaward.
- The modifications also include demarcation of a 20-metre no development zone for all islands and guidelines to deal with sensitive areas.

Q.37) Which of the following are the adaptations by plants in desert areas?

1. Thick cuticle on their leaf surfaces
2. Stomata are arranged in deep pits
3. Stomata to remain closed during day time
4. Flattened stems

Select the correct answer using the code given below:

- a) 1, 2 and 3 only

- b) 2, 3 and 4 only
- c) 1, 2 and 4 only
- d) 1, 2, 3 and 4

Q.37) Solution (d)**Explanation:**

Adaptation is any attribute of the organism (morphological, physiological, behavioural) that enables the organism to survive and reproduce in its habitat. Many adaptations have evolved over a long evolutionary time and are genetically fixed.

Adaptations by plants in desert areas:

1. Thick cuticle on their leaf surfaces
2. Stomata are arranged in deep pits
3. Stomata to remain closed during day time
4. Flattened stems

Q.38) Consider the following States:

1. Mizoram
2. Madhya Pradesh
3. Maharashtra
4. Arunachal Pradesh

With reference to the States mentioned above, in terms of percentage of forest cover to the total area of State, which one of the following is the correct ascending order?

- a) 2-3-1-4
- b) 2-3-4-1
- c) 3-2-4-1
- d) 3-2-1-4

Q.38) Solution (c)**Explanation:**

State	% Forest Cover
Maharashtra	20.01%
Madhya Pradesh	28.27%
Arunachal Pradesh	79.63%
Mizoram	85.41%

Q.39) Consider the following statements with respect to the ‘Estuaries’:

1. An estuary is a coastal body of water where flow of freshwater from river mixes with saltwater of ocean.
2. Estuaries are homes to plants & animals which have low salt tolerance.
3. Estuaries create a natural barrier that absorbs the energy of the waves and prevents them from flooding cities.

Which of the above statements is/are correct?

- a) 1 and 3 only
- b) 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

Q.39) Solution (a)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	Incorrect	Correct
An estuary is a coastal body of water where flow of freshwater from river mixes with saltwater of ocean.	Estuaries are homes to plants & animals which have high salt tolerance.	Estuaries create a natural barrier that absorbs the energy of the waves and prevents them from flooding cities.

Q.40) Consider the following statements regarding Ramsar sites in India:

1. There are 42 Ramsar sites in India.
2. Kabartal in Jharkhand has been recognised as a wetland of international importance, the first such wetland in the state.
3. Bangladesh’s part of Sunderban is also a Ramsar site like Indian part of Sundarban.

Which of the following statements are correct?

- a) 1 and 2 only
- b) 2 only
- c) 3 only
- d) 1, 2 and 3

Q.40) Solution (c)

Statement Analysis:

Statement 1	Statement 2	Statement 3
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Incorrect	Incorrect	Correct
There are 49 Ramsar sites in India.	Kabartal in Bihar has been recognised as a wetland of international importance, the first such wetland in the state.	Bangladesh's part of Sunderban is also a Ramsar site like Indian part of Sundarban.

Notes:

Khijadia Wildlife Sanctuary in Gujarat and **Bakhira Wildlife Sanctuary** in Uttar Pradesh were announced as Ramsar sites on the occasion of World Wetland Day 2022 (2nd January 2022) held at Sultanpur National Park, a Ramsar site in Haryana.

