

Q.1) Which of the following statements best describes 'Ecotype'?

- a) It is a type of marine ecosystem that provides an alternative to a species of terrestrial for growth and survival.
- b) It is a transition area between two biomes where communities interact.
- c) It is a genetically distinct variety within a species, which is adapted to specific environmental conditions.
- d) It is a type of ecosystem in which inherent balance is maintained between autotrophs and heterotrophs.

Q.1) Solution (c)

In evolutionary ecology, an ecotype, sometimes called ecospecies, describes a genetically distinct geographic variety, population or race within a species, **which is genotypically adapted to specific environmental conditions.**

Typically, though ecotypes exhibit phenotypic differences (such as in morphology or physiology) stemming from environmental heterogeneity, they are capable of interbreeding with other geographically adjacent ecotypes without loss of fertility or vigor.

Do you know?

- Earthworms fall into four different ecotypes. Compost earthworms prefer warm and moist environments with a ready supply of fresh compost material.
- Epigeic earthworms live on the surface of the soil in leaf litter and tend not to make burrows but live in and feed on the leaf litter.
- Endogeic earthworms live in and feed on the soil, making horizontal burrows through the soil to move around and to feed and they will reuse these burrows to a certain extent.
- Anecic earthworms make permanent vertical burrows in soil, feeding on leaves on the soil surface that they drag into their burrows.

THINK!

- Ecotope

Q.2) Consider the following pairs.

Aquatic organism	Meaning
1. Plankton	Microscopic plants and animals
2. Neuston	Animals which can swim

3. Benthos	Organisms found on the bottom of the water body
4. Nekton	Floating organisms inhabiting the surface layer

Which of the following pairs is/are correctly matched?

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

Q.2) Solution (c)

Based on their life form or location, aquatic organisms (both flora and fauna) are classified into five groups:

Neustons: Unattached organisms which live at air-water interface such as floating plants etc.

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

Planktons: These are free floating species with limited powers of locomotion. This group includes microscopic plants like algae (phytoplankton) and animals like crustaceans and protozoans (zooplankton).

Nektons: This group includes animals which are swimmers. The animals range in size from the swimming insects to the largest animals, blue whale.

Benthos: These are found living in the bottom of the water mass.

Do you know?

Plankton are primarily divided into broad functional (or trophic level) groups:

- **Phytoplankton** (from Greek phyton, or plant), autotrophic prokaryotic or eukaryotic algae that live near the water surface where there is sufficient light to support photosynthesis. Among the more important groups are the diatoms, cyanobacteria, dinoflagellates and coccolithophores.
- **Zooplankton** (from Greek zoon, or animal), small protozoans or metazoans (e.g. crustaceans and other animals) that feed on other plankton. Some of the eggs and larvae of larger nektonic animals, such as fish, crustaceans, and annelids, are included here.

- **Bacterioplankton**, bacteria and archaea, which play an important role in remineralising organic material down the water column (note that prokaryotic phytoplankton are also bacterioplankton).
- **Mycoplankton**, fungi and fungus-like organisms, which, like bacterioplankton, are also significant in remineralisation and nutrient cycling.

THINK!

- Iron fertilization

Q.3) Which of the following is the correct sequence of an aquatic food chain?

- a) Dinoflagellates - Amphipod - Squid
- b) Dinoflagellates - Squid - Amphipod
- c) Amphipod - Squid - Dinoflagellates
- d) Squid - Dinoflagellates – Amphipod

Q.3) Solution (a)

Phytoplankton, also known as microalgae, is similar to terrestrial plants in that they contain chlorophyll and require sunlight in order to live and grow. Most phytoplankton are buoyant and float in the upper part of the ocean, where sunlight penetrates the water.

The two main classes of phytoplankton are dinoflagellates and diatoms. Dinoflagellates use a whip-like tail, or flagella, to move through the water and their bodies are covered with complex shells. Diatoms also have shells, but they are made of a different substance and their structure is rigid and made of interlocking parts. Diatoms do not rely on flagella to move through the water and instead rely on ocean currents to travel through the water.

In a balanced ecosystem, phytoplankton provide food for a wide range of sea creatures including Zooplankton (like Crustaceans, Protozoa), **Squid and larger fishes**. Copepods and **Amphipods are Crustaceans**.

Do you know?**Biofloc culture**

- It is an innovative and cost-effective technology in which toxic materials to the fish and shellfish such as Nitrate, Nitrite, Ammonia can be converted to useful product, i.e., proteinaceous feed. It is the technology used in aquaculture system with limited or zero water exchange under high stocking density, strong aeration and biota

formed by biofloc. The culture of biofloc will be productive in the case of culture tanks exposed to sun.

THINK!

- Biosparging

Q.4) Consider the following pairs:

Biome type	Vegetation type
1. Taiga	Devoid of trees, except stunted shrubs
2. Savannah	Grasses with scattered trees and fire resisting thorny shrubs
3. Temperate	Broad-leaved trees with less diversity of plant species

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

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

Q.4) Solution (b)

In the higher latitudes (50°-70°) of Northern hemisphere, the Coniferous forests are found. These are also called as Taiga. These forests are also seen in the higher altitudes.

In Tundra type of vegetation, the growth of natural vegetation is very limited. Only mosses, lichens and very small shrubs are found here. It grows during the very short summer. This is called Tundra type of vegetation. This vegetation is found in the polar areas of Europe, Asia and North America.

Tropical grasslands: These grow on either side of the equator and extend till the tropics. This vegetation grows in the areas of moderate to low amount of rainfall. They can grow very tall, about 3 to 4 metres in height. Savannah grasslands of Africa are of this type. Savannah shrubs are fire-resistant which helps them survive periodic, natural fire spread in forests. Thus, pair 2 is correctly matched.

Temperate forests have moderately dense broad-leaved trees and have less diversity of plant species. Oak, Beach, Maple etc. are some common species. Thus, pair 3 is correctly matched.

Do you know?

- Tropical rainforests are rainforests that occur in areas of tropical rainforest climate in which there is no dry season – all months have an average precipitation of at least 60 mm – and may also be referred to as lowland equatorial evergreen rainforest.
- True rainforests are typically found between 10 degrees north and south of the equator (see map); they are a sub-set of the tropical forest biome that occurs roughly within the 28-degree latitudes (in the equatorial zone between the Tropic of Cancer and Tropic of Capricorn).

THINK!

- Monsoon forest

Q.5) With reference to cold water corals, which of the following statements is/are correct?

1. They do not require Zooxanthellae to survive.
2. Worldwide distribution of cold water coral reef is greater than tropical reef.

Select the correct answer using the code given below.

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

Q.5) Solution (c)

Cold-water corals extend to deeper, darker parts of the oceans than tropical corals, ranging from near the surface to the abyss, beyond 2,000 meters where water temperatures may be as cold as 4 °C. They inhabit deep water, not shallow water. **Like tropical corals, they provide habitat to other species, but deep-water corals do not require zooxanthellae to survive.**

United Nations Environment Programme reports that there are more cold-water coral reefs worldwide than tropical reefs. Their extent is much larger than their tropical counterpart. Some, as the various individual reefs stretching from Norway as far south as West Africa, are when combined far bigger than more famous tropical ones such as Australia's Great Barrier Reef.

Do you know?

- **Cays** – small, low-elevation, sandy islands formed on the surface of coral reefs from eroded material that piles up, forming an area above sea level; can be stabilized by plants to become habitable; occur in tropical environments throughout the Pacific, Atlantic and Indian Oceans (including the Caribbean and on the Great Barrier Reef and Belize Barrier Reef), where they provide habitable and agricultural land.

THINK!

- Habili

Q.6) Consider the following statements regarding dissolved oxygen in an aquatic ecosystem:

1. It increases with increase in temperature of a water-body.
2. Its concentration in fresh water is usually more than the concentration of oxygen in air.
3. Snow cover of ice on water reduces dissolved oxygen concentration.

Which of the statements given above is/are correct?

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

Q.6) Solution (b)

The solubility of oxygen decreases as temperature increases. Warm water also enhances the decomposer activity. There dissolved oxygen concentration decreases, not increases, with increase in temperature of water-body.

Its concentration in fresh water is usually more than 100 times less than the concentration of Oxygen in air.

Snow cover doesn't allow transfer of oxygen from atmosphere. It also reduces the photosynthesis activities by aquatic plants. Thus, there is reduction in dissolved oxygen concentration.

Do you know?

- In environmental chemistry, the chemical oxygen demand (COD) is an indicative measure of the amount of oxygen that can be consumed by reactions in a measured

solution. It is commonly expressed in mass of oxygen consumed over volume of solution which in SI units is milligrams per litre (mg/L).

- COD test can be used to easily quantify the amount of organics in water. The most common application of COD is in quantifying the amount of oxidizable pollutants found in surface water (e.g. lakes and rivers) or wastewater. COD is useful in terms of water quality by providing a metric to determine the effect an effluent will have on the receiving body, much like biochemical oxygen demand (BOD).

THINK!

- Carbonaceous biochemical oxygen demand

Q.7) With reference to 'Algal Blooms', which of the following statements is/are correct?

1. They are always harmful for aquatic ecosystem.
2. They are called 'Red Tides'.
3. Algal blooms can occur in freshwater as well as marine environments.

Select the correct answer using the code given below.

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

Q.7) Solution (c)

Not all algal blooms are harmful, some can actually be beneficial. Phytoplankton (Algae) are found at the base of the marine food chain therefore all other life in the ocean relies on phytoplankton. **Blooms can also be a good indicator of environmental change not only in the water, but also on land.** Algal blooms may occur in freshwater as well as marine environments.

Algal blooms are commonly called as red tides because many times, they turn water red. However, algal blooms could be of other colors as well like green, blue, red or brown. Thus, scientists prefer the term - harmful algal bloom.

Do you know?

- An indicator species is an organism whose presence, absence or abundance reflects a specific environmental condition. Indicator species can signal a change in the biological condition of a particular ecosystem, and thus may be used as a proxy to

diagnose the health of an ecosystem. For example, plants or lichens sensitive to heavy metals or acids in precipitation may be indicators of air pollution.

THINK!

- Keystone species

Q.8) Second phase of National Monsoon Mission started in 2017. Which of the following statements is/are correct regarding the Mission?

1. It has been launched by Ministry of Drinking water and sanitation.
2. The objective of the program is to increase the amount of rainfall during monsoon season and increase water harvesting.

Select the code from following:

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

Q.8) Solution (d)

National Monsoon Mission

Under the National Monsoon Mission initiative, the Indian Institute of Tropical Meteorology (IITM), Pune, Indian National Centre for Ocean Information Services (INCOIS), Hyderabad and National Centre for Medium Range Weather Forecasting (NCMRWF), NOIDA have embarked upon to build a state-of-the-art coupled ocean atmospheric model for:-

(a) improved prediction of monsoon rainfall on extended range to seasonal time scale (16 days to one season) and (b) improved prediction of temperature, rainfall and extreme weather events on short to medium range time scale (up to 15 days) so that forecast skill gets quantitatively improved further for operational services of India Meteorological Department (IMD).

Note: The Mission comes under Ministry of Earth Sciences.

Q.9) Secure Himalaya Project has been launched by Ministry of Environment, Forest and Climate Change. Which of the following statements are correct regarding Secure Himalaya Project?

1. The aim of the project is to ensure conservation of locally and globally significant biodiversity, land and forest resources in the high Himalayan ecosystem.
2. The project will be implemented in all the Himalayan states from J and K to Arunachal Pradesh.
3. Protection of snow leopard and other endangered species and their habitats is one of the key components of the project,

Select the code from following:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.9) Solution (c)

Note: The project is launched in four states – Jammu and Kashmir, Himachal Pradesh, Uttarakhand and Sikkim.

The by Ministry of Environment, Forest and Climate Change launched a six-year project to ensure conservation of locally and globally significant biodiversity, land and forest resources in the high Himalayan ecosystem spread over four states in India.

Protection of snow leopard and other endangered species and their habitats is one of the key components of the project which will also focus on securing livelihoods of the people in the region and enhancing enforcement to reduce wildlife crime.

The project has been launched in association with United Nations Development Program.

Q.10) National Mission on sustainable habitat is one of the missions under National Action plan on Climate Change (NAPCC). Which of the following statements is/are NOT correct regarding National Mission on Sustainable Habitat?

1. The aim of the mission is to protect the natural habitats of Critically endangered species in India and increase their population.
2. The mission is being implemented by Ministry of Environment, Forest and Climate Change.

Select the code from following:

- a) 1 only
- b) 2 only

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

Q.10) Solution (c)

Note: Incorrect options have been asked.

National mission on sustainable habitat

It is one of the eight missions under national climate change action plan and aims to make cities sustainable through improvements in energy efficiency in buildings, management of solid waste & shift to public transport.

The National Mission for Sustainable Habitat which is a component of the National Action Plan for Climate Change will broadly cover the following aspects:

- Extension of the energy conservation building code - which addresses the design of new and large commercial buildings to optimize their energy demand;
- Better urban planning and modal shift to public transport - make long term transport plans to facilitate the growth of medium and small cities in such a way that ensures efficient and convenient public transport;
- Recycling of material and urban waste management - a special areas of focus will be development of technology for producing power form waste.

The National Mission will include a major R&D programme, focusing on bio-chemical conversion, waste water use, sewage utilization and recycling options wherever possible.

Q.11) The rate of biomass production in an ecosystem is called Productivity. Which of the following statements is/are correct regarding different Primary Productivities?

1. Gross primary productivity (GPP) of an ecosystem is the rate of production of organic matter during photosynthesis.
2. Gross primary productivity minus respiration losses, is the net primary productivity (NPP).

Select the code from following:

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

Q.11) Solution (c)**Primary production**

Primary production is defined as the amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis. It is expressed in terms of weight ($g\ m^{-2}$) or energy ($kcal\ m^{-2}$). The rate of biomass production is called productivity.

It can be divided into gross primary productivity (GPP) and net primary productivity (NPP).

Gross primary productivity of an ecosystem is the rate of production of organic matter during photosynthesis. A considerable amount of GPP is utilised by plants in respiration. Gross primary productivity minus respiration losses (R) is the **net primary productivity** (NPP).

$$GPP - R = NPP$$

Net primary productivity is the available biomass for the consumption to heterotrophs (herbivores and decomposers).

Secondary productivity is defined as the rate of formation of new organic matter by consumers.

Q.12) Which of the following statements correctly explains the term 'Saprotroph'?

- a) This is the name given to the organisms which produce their own food without sunlight.
- b) It is an organism which feeds on decaying organic matter.
- c) This is the name given to highest consumer in a food chain.
- d) It is a primary food producer in marine food chain.

Q.12) Solution (b)**Saprotrophs**

The detritus food chain (DFC) begins with dead organic matter. It is made up of decomposers which are heterotrophic organisms, mainly fungi and bacteria. They meet their energy and nutrient requirements by degrading dead organic matter or detritus. These are also known as **saprotrophs** (sapro: to decompose). Decomposers secrete digestive enzymes that breakdown dead and waste materials into simple, inorganic materials, which are subsequently absorbed by them.

Q.13) Which of the following statements correctly explains the 10 per cent law in context of ecology?

- a) Only 10 per cent of the energy is transferred to each trophic level from the lower trophic level.
- b) Biomass in one trophic level is only 10% of the lower trophic level.
- c) With 10 per cent increase in sunlight the vegetation growth in an ecosystem gets doubled.
- d) None of the above

Q.13) Solution (a)

Ten Percent Law

The Ten **percent law** of transfer of energy from one trophic level to the next was introduced by Raymond Lindeman (1942). According to this **law**, during the transfer of energy from organic food from one trophic level to the next, only about ten **percent** of the energy from organic matter is stored as flesh.

Q.14) The gradual and fairly predictable change in the species composition of a given area is called ecological succession. Which of the following statements regarding Ecological succession is/are correct?

1. Hydrarch succession takes place in wetter areas and the successional series progress from hydric to the mesic conditions.
2. Xerarch succession takes place in dry areas and the series progress from dry to mesic conditions.

Select the code from following:

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

Q.14) Solution (c)

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 wetter 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).

Think

- Pioneer species
- Climax species
- Seral stages

Q.15) Consider the following statements with reference to Wetlands:

1. Wetlands exist in every country and in every climatic zone, from the polar regions to the tropics, from high altitudes to dry regions.
2. Mangroves, peat lands, rice fields and even coral reefs can be considered a wetland.

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.15) Solution (c)

According to standard definition, “Wetlands occur where water meets land. They include mangroves, peatlands and marshes, rivers and lakes, deltas, floodplains and flooded forests, rice-fields, and even coral reefs. Wetlands exist in every country and in every climatic zone, from the polar regions to the tropics, from high altitudes to dry regions.”

Q.16) Which among the following are likely to increase after large areas of tropical rain forests are cut down?

1. erosion by rivers flowing through the areas
2. rate of nutrient loss from the areas

3. species diversity of the areas
4. average surface temperature of the soil in the areas

Select the correct code:

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

Q.16) Solution (b)

If large areas of tropical rain forests are cut down, it is likely to increase the rate of nutrient loss from the areas; increase the average surface temperature of the soil in the areas and also there will be increase in soil erosion.

However, the continuing loss of the diverse habitats found in tropical rain forests will cause a decrease in species diversity, not an increase. Hence, option (b) is correct answer.

Q.17) Consider the below characteristics:

1. Cold regions with high rainfall, strong seasonal climates with long winters and short summers.
2. Soils are characterized by thin podzols, are acidic and are mineral deficient.
3. The productivity and community stability of these forests are lower than those of any other forest ecosystem.

Identify the appropriate forest ecosystem which has above characteristics:

- a) Tundra forest
- b) Temperate forest
- c) Mediterranean forest
- d) Boreal forest

Q.17) Solution (d)

Coniferous forest (boreal forest):

- Cold regions with high rainfall, strong seasonal climates with long winters and short summers

- Evergreen plant species such as Spruce, fir and pine trees, etc and by animals such as the lynx, wolf, bear, red fox, porcupine, squirrel, and amphibians like Hyla, Rana, etc.
- Boreal forest soils are characterized by thin podzols and are rather poor. Both because, the weathering of rocks proceeds slowly in cold environments and because the litter derived from conifer needle (leaf is decomposed very slowly and is not rich in nutrients.)
- These soils are acidic and are mineral deficient.
- This is due to movement of large amount of water through the soil, without a significant counter-upward movement of evaporation, essential soluble nutrients like calcium, nitrogen and potassium which are leached sometimes beyond the reach of roots. This process leaves no alkaline oriented cations to encounter the organic acids of the accumulating litter.
- The productivity and community stability of a boreal forest are lower than those of any other forest ecosystem.

Q.18) Tropical areas have very rich biodiversity as compared to Temperate, because -

1. Over geological times the tropics have had more stable climate than the temperate zones.
2. Of warm temperatures and high humidity in most tropical areas
3. Tropical communities are older than temperate ones
4. Of greater pressure from pests, parasites and diseases in tropics

Which of the statements given above is/are correct reasons for the same?

- a) 1 and 2 only
- b) 2, 3 and 4 only
- c) 1, 2 and 3 only
- d) All of the above

Q.18) Solution (d)

Reasons why biodiversity is rich in Tropics:

1. Over geological times the tropics have had more stable climate than the temperate zones. In tropics, therefore, local species continued to live there itself, whereas in temperate they tend to disperse to other areas.
2. Tropical communities are older than temperate ones and therefore there has been more time for them to evolve. This could have allowed them greater degree of specialization and local adaptation to occur.

3. Warm temperatures and high humidity in most tropical areas provide favourable conditions for many species that are unable to survive in temperate areas.
4. In tropics there is greater pressure from pests, parasites and diseases. This does not allow any single species to dominate and thus there is opportunity for many species to co-exist. On the contrary in temperate zones there is reduced pests pressure due to cold, and there is one or few dominating species that exclude many other species.
5. Among plant, rates of out-crossing appear to be higher in tropics, which may lead to higher levels of genetic variability.
6. Tropical areas receive more solar energy over the year. Thus tropical communities are more productive or greater resource base that can support a wider range of species.

Q.19) Select the correct term related to the phrase - "The entire complement of species of organisms, plants and animals found within a given region"

- a) Community
- b) Biotype
- c) Biota
- d) Biome

Q.19) Solution (c)

Biome: A large terrestrial ecosystem characterized by specific plant communities and formations; usually named after the predominant vegetation in the region.

Biosphere: The totality of life on or near Earth's surface.

Biota: The entire complement of species of organisms, plants, and animals, found within a given region.

Biotype: A biotope is an area of uniform environmental conditions providing a living place for a specific assemblage of plants and animals. Biotope is almost synonymous with the term habitat.

In ecology, a community is an assemblage or association of populations of two or more different species occupying the same geographical area and in a particular time, also known as a **biocoenosis**.

Q.20) In the context of solving pollution problems, what is/are the advantage(s) of bioremediation technique?

1. It is a technique for cleaning up pollution by enhancing the same biodegradation process that occurs in nature.
2. Any contaminant with heavy metals such as cadmium and lead can be readily and completely treated by bioremediation using microorganisms.
3. Genetic engineering can be used to create microorganisms specifically designed for bioremediation.

Select the correct answer using the correct codes given below:

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

Q.20) Solution (c)

Bioremediation is the use of microorganisms (bacteria and fungi) to degrade the environmental contaminants into less toxic forms.

Statement 1:

- In-situ Bioremediation techniques: It involves treatment of the contaminated material at the site. Such as: Bioventing; Biosparging; Bioaugmentation
- Ex-situ Bioremediation techniques: It involves removal of the contaminated material to be treated elsewhere. Such as: Landfarming; Biopiles; Bioreactors; Composting.

Statement 2:

- Disadvantage of bioremediation is that it is limited to those compounds that are biodegradable.
- Not all compounds are susceptible to rapid and complete degradation.

Statement 3:

- Genetic engineering is also one of the approaches under which Phytoremediation that is using of plants to remove contaminants from soil and water.

Q.21) The miniature succession of micro-organic environment and different types of fungi on the fallen logs of the decaying wood, tree bark, etc. is called:

- a) Sere
- b) Mesarch

- c) Serule
- d) Pioneers

Q.21) Solution (c)

Pioneers: The first organisms to become established in an ecosystem undergoing succession are called pioneers; the stable community that ends the succession is termed the climax community.

Sere: The whole series of communities which are involved in the ecological succession at a given area. For example, from grass to shrub to forest, and which terminates in a final stable climax community, is called as sere.

Mesarch: The succession when begins in an area, where adequate moisture is present, is called mesarch.

Xerach: The succession when starts in xeric or dry habitat having minimum amounts of moisture, such as dry deserts, rocks, etc. is called xerach.

Serule: The miniature succession of micro-organic environment and different types of fungi on the fallen logs of the decaying wood, tree bark, etc. is called serule.

Q.22) Consider the following statements about Schedule H Drug

1. It is a class of drugs appearing as an appendix to the Drugs and Cosmetics Rules, 1945
2. They cannot be purchased over the counter without the prescription of a qualified doctor

Select the correct statements

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

Q.22) Solution (c)**Schedule H Drug**

- It is a class of prescription drugs in India appearing as an appendix to the Drugs and Cosmetics Rules, 1945 introduced in 1945.

- These are drugs which cannot be purchased over the counter without the prescription of a qualified doctor.
- The manufacture and sale of all drugs are covered under the Drugs and Cosmetics Act and Rules.

Schedule X Drug

- It is a class of prescription drugs in India appearing as an appendix to the Drugs and Cosmetics Rules introduced in 1945.
- These are drugs which cannot be purchased over the counter without the prescription of a qualified doctor.
- Also, the retailer has to preserve the prescription for a period of two years.

Q.23) Which of the following banks are insured by Deposit Insurance and Credit Guarantee Corporation (DICGC)?

1. Foreign banks functioning in India
2. Regional Rural Banks (RRBs)
3. Nationalised Banks

Select the correct code:

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

Q.23) Solution (d)

Deposit Insurance and Credit Guarantee Corporation (DICGC)

- It is a very old subsidiary of RBI which provides insurance to all the banks registered under the guidelines of the RBI Act.
- The aim of the DICGC Act, 1961 is to provide for the establishment of a corporation for the purpose of insurance of deposits and guaranteeing of credit facilities and various other matters which are incidental to any event occurring DICGC Act.
- No insured banks can withdraw themselves from the DICGC coverage. The deposit insurance scheme is mandatory for all the banks.
- All commercial banks including branches of foreign banks functioning in India, nationalized/local banks and RRB's are insured by the DICGC.

- At present all the co-operative banks other than those from the Union Territories of Chandigarh, Lakshadweep, the State of Meghalaya and Dadra and Nagar Haveli are covered by the DICGC.
- Primary cooperative societies are also not insured by the DICGC. Deposit insurance premium is borne entirely by all the insured banks, respectively.

What comes under DICGC insurance?

- It is important to know that the DICGC insures all the deposits such as savings, current, fixed, recurring, etc.
- Deposits which are not covered are deposits of the foreign governments, deposits of the central or the state governments, deposits of the state land development banks with the state co-operative banks, various inter-bank deposits, any amount due on account of and deposit received outside India and any amount, which has been specifically exempted by the corporation with the previous approval of RBI.

Maximum amount of deposit insured under DICGC

- Each of the depositor, who has an account in a bank, is insured up to a maximum of Rs 1 lakh for both principal and interest amount held by them as on the date of cancellation or liquidation of bank's license or the date on which the scheme of amalgamation/merger/reconstruction takes place.

DICGC liable to pay the insurance amount

- When a bank goes into liquidation then in such a case the DICGC is liable to pay to each depositor through the liquidator, the amount of his deposit up to Rs 1 lakh within two months from the date of claim list from the liquidator.
- If a bank is reconstructed or amalgamated or merged with another bank then in such a case the DICGC pays to the bank concerned.

Q.24) Consider the following statements about 'Project Dhoop'

1. It is aimed at achieving India's solar energy target of 100GW by 2022
2. It is under the aegis of Ministry of New and Renewable Energy (MNRE)
3. It calls for strong enforcement of Renewable Purchase Obligation (RPO) and for providing Renewable Generation Obligation (RGO)

Select the INCORRECT statement

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

d) All of the above

Q.24) Solution (d)

Project Dhoop

- It urges schools to shift their morning assembly to noon time, mainly between 11 am and 1 pm to ensure maximum absorption of Vitamin D in students through natural sunlight
- Launched by Food Safety and Standards Authority of India (FSSAI) to spread awareness about availing Vitamin D through natural sunlight and consuming fortified food among school-going children
- The project was implemented in collaboration with the New Delhi Municipal Council (NDMC), North MCD and several private schools through a Joint Noon Assembly.
- Vitamin D deficiency occurs due to overuse of sunscreen, wearing clothes that cover most of the skin, working all day in an air-conditioned atmosphere, and other factors.
- Sunshine from 11am to 1pm that is most beneficial in increasing Vitamin D levels in human body because of the best ultraviolet B (UVB) radiation
- Vitamin D deficiency occurs due to overuse of sunscreen, wearing clothes that cover most of the skin, working all day in an air-conditioned atmosphere, and other factors.

Source: <http://www.downtoearth.org.in/news/fssai-introduces-project-dhoop-encourages-children-to-absorb-vitamin-d-through-sunlight-60123>

Q.25) 'Sentinel Wrap', recently in news is a

- a) New Kind of bubble wrap
- b) Material used to store antiquities
- c) Space Debris Cleaner
- d) Patch that can detect if the food has gone bad

Q.25) Solution (d)

Sentinal Wrap

News: Scientists have developed a transparent patch that can detect if food has gone bad, by monitoring the presence of harmful pathogens in real time.

About

- The patch can be incorporated directly into food packaging, and signal E coli and Salmonella contamination as it happens
- It has the potential to replace the traditional "best before" date on food and drinks
- If a pathogen is present in the food or drink inside the package, it would trigger a signal in the packaging that could be read by a smartphone or other simple device.
- The test itself does not affect the contents of the package
- It would be cheap and easy to mass produce, as the DNA molecules that detect food pathogens can be printed onto the test material
- The same technology could also be used in other applications, such as bandages to indicate if wounds are infected, or for wrapping surgical instruments to assure they are sterile.

Source: <http://www.dnaindia.com/science/report-new-novel-patch-can-detect-food-contamination-in-real-time-2602655>

Q.26) Consider the following statements about 'Silappatikaram'

1. It describes 'Tamizhakam' divided into three major kingdoms, viz. Chola, Pandya and Chera
2. The focus in Silappatikaram is on the lives of Vaisyas (traders and merchants)

Select the correct statements

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

Q.26) Solution (c)

Silappatikaram is an epic similar to Mahabharata, Ramayana, Iliad and Odyssey. It is authored in the ancient Tamil language spoken during 500 BCE to 500 CE period in southern India. Its name means the 'Anklet Story' or the chapter on the history of an Anklet. 'Silappu' (Silampu) in Tamil means 'Anklet'. 'Atikaram' in Tamil means 'chapter, narrative or passage focusing on a particular topic of interest'. Like Mahabharata which forms a window of information or a time portal to the lives of people in ancient India, especially in the Indo-Gangatic plain during Kurukshetra War period (dated to around 3100 BCE), Silappatikaram forms a window to southern India during 500 BCE to 500 CE period. It describes the Tamil

country (Tamizhakam) divided into three major kingdoms, viz. Chola, Pandya and Chera (alternatively Cheral or Kerala) with their capital cities respectively Pukaar, Maturai and Vanchi. Unlike the Kuru-Panchala kingdoms of Indo Gangatic plain, described vividly in Mahabharata, the Chola, Pandya and Chera kingdoms had a maritime culture and engaged in sea trade with distant lands. These distant lands included Ionia in Greece and Rome. The Greeks and Romans were described as Yavanas and small pockets of Yavana territory existed in the Tamil country, such as in the city of Pukaar, the capital of the Chola kingdom. Indirect references reveals cultural influences in the Tamil country through trade relations via land or sea with Arabia, Israel, Egypt, Dwaraka (Gujarat of India), Lanka (Srilanka), Vanga (Bangal of India and Bangladesh), South East Asia and China.

In Mahabharata the focus is on the lives of Kshatriyas (warriors) and Brahmanas (scholars). In Silappatikaram the focus is on the lives of Vaisyas (traders and merchants). The most important person described in the epic is a Vaishya women named Kannaki who became a goddess after suffering a very painful life including the death of her husband Kovalan. She is comparable to Sita of Ramayana and Panchali of Mahabharata. Sita's abduction by Ravana and the fulfillment of her subsequent revenge caused his destruction at the city of Lanka. Panchali's humiliation by the Kauravas caused their destruction at Kurukshetra. Kannaki's revenge for the unrighteous execution of her husband by Pandya king Netunchezhiyan caused his destruction at the city of Maturai.

Read More - <http://naalanda.wikidot.com/article:silappatikaram>

Source: <http://www.thehindu.com/news/cities/Tiruchirapalli/rare-dance-panel-of-nayak-period-found-at-pathalapettai/article23487605.ece>

