

Prelimsure Detailed Test-8 Answerkey

1. C

- Eutrophication is the excessive richness of nutrients in a lake or other body of water, frequently due to run-off from the land, which causes a dense growth of plant life and algal bloom.
- Eutrophication is often induced by the discharge of nitrate or phosphate-containing detergents, fertilizers, or sewage into an aquatic system.

2. A

- Ozone-depleting substances are man-made gases that destroy ozone once they reach the ozone layer. The ozone layer sits in the upper atmosphere and reduces the amount of harmful ultraviolet radiation that reaches Earth from the sun. Ultraviolet radiation can have detrimental effects on both humans and the environment such as inducing skin cancer and cataracts, distorting plant growth and damaging the marine environment.
- Ozone-depleting substances include chlorofluorocarbons, hydrochlorofluorocarbons, hydrobromofluorocarbons, halons, methyl bromide, carbon tetrachloride and methyl chloroform.
- They have been used as refrigerants in commercial, home and vehicle air conditioners and refrigerators, foam blowing agents, components in electrical equipment, industrial solvents, solvents for cleaning (including dry cleaning), aerosol spray propellants and fumigants.

3. B

- The signing of Memorandum of Understanding between India and Bolivia in the field of Railways regarding Bioceanic Railway Integration Corridor Project: The MoU will facilitate the exchange of information, expert meetings, seminars, technical visits and implementation of jointly agreed cooperation projects
- The MoU will facilitate the exchange of information, expert meetings, seminars, technical visits and implementation of jointly agreed cooperation projects.

4. D

- A carbon sink is a natural reservoir that stores carbon-containing chemical compounds accumulated over an indefinite period of time.
- Healthy coastal ecosystems play a mitigation role against climate change, especially by capturing carbon for their development. For instance, mangroves, seagrass beds and salt marshes are significant carbon sinks.
- These ecosystems store at least ten times more carbon than continental forests when they develop by capturing carbon.

5.D

- The Ministry of Environment, Forest and Climate Change (MoEFCC) has developed the criteria of categorization of industrial sectors based on the Pollution Index which is a

function of the emissions (air pollutants), effluents (water pollutants), hazardous wastes generated and consumption of resources.

- The Pollution Index PI of any industrial sector is a number from 0 to 100 and the increasing value of PI denotes the increasing degree of pollution load from the industrial sector.
- The following are the criteria on 'Range of Pollution Index' for the purpose of categorization of industrial sectors.
 - Industrial Sectors having Pollution Index score of 60 and above - Red category
 - Industrial Sectors having Pollution Index score of 41 to 59 – Orange category
 - Industrial Sectors having Pollution Index score of 21 to 40 – Green category
 - Industrial Sectors having Pollution Index score incl.& upto 20 - White category
- There shall be no necessity of obtaining the Consent to Operate” for White category of industries. An intimation to concerned SPCB / PCC shall suffice.
- No Red category of industries shall normally be permitted in the ecologically fragile area / protected area.

6.C

- NITI Aayog released the Second Edition of “Healthy States, Progressive India” Report.
- The report has been developed by NITI Aayog, with technical assistance from the World Bank, and in consultation with the Ministry of Health and Family Welfare (MoHFW).
- The report ranks states and Union territories innovatively on their year-on-year incremental change in health outcomes, as well as, their overall performance. The Round II report focuses on measuring and highlighting the overall performance and incremental improvement over a two year period (2016-17 and 2017-18) in the States and UTs. The report is an annual systematic performance tool to measure the performance of the States and UTs.
- Among the Larger States, Kerala, Andhra Pradesh & Maharashtra ranked on top in terms of overall performance, while Haryana, Rajasthan and Jharkhand are the top three ranking States in terms of annual incremental performance.

7. A

- The pesticide treadmill is a term indicating a situation in which it becomes necessary for a farmer to continue using pesticides regularly because they have become an indispensable part of an agricultural cycle.
- This can occur if pesticides are used on crops or animal herds such that other natural remedies are no longer effective. The farmer then has no option but to use the pesticides year after year in each agricultural cycle.

8. C

- Microbeads are manufactured solid plastic particles of less than one millimeter in their largest dimension.
- They are most frequently made of polyethylene but can be of other petrochemical plastics such as polypropylene and polystyrene. They are used in exfoliating personal care products, toothpastes and in biomedical and health-science research.

- Microbeads can cause plastic particle water pollution and pose an environmental hazard for aquatic animals in freshwater and ocean water

9. C

- Air (Prevention and Control of Pollution) Act empowers Central Pollution Control Board to set standards for the quality of air.
- Current NAAQS were notified by CPCB in the year 2009.
- Pollutants covered under NAAQS are Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Particulate Matter (PM 10, PM 2.5), Ozone (O₃), Lead (Pb), Carbon Monoxide (CO), Ammonia (NH₃), Benzene (C₆H₆), Benzo(a)Pyrene (BaP), Arsenic(As), Nickel (Ni).

10. B

- Marine Cloud Brightening (MCB) refers to manipulating cloud cover to reflect more sunlight back to space. It is a proposed Solar Radiation Management (SRM) technique. MCB could reduce the temperature of the atmosphere and oceans because they would absorb less of the sun's energy, but it would not reduce levels of greenhouse gases.
- Proponents of MCB aim to create whiter, more reflective clouds by shooting particulates (salt from seawater droplets or bacteria) into clouds and increasing cloud condensation nuclei (the tiny particles around which clouds form).

11.A

- It's not sulphur oxides but nitrogen oxides. Sulfurous smog results from a high concentration of SULFUR OXIDES in the air and is caused by the use of sulfur-bearing fossil fuels, particularly coal (Coal was the main source of power in London during nineteenth century. The effects of coal burning were observed in early twentieth century). And this type of fog is called London fog.
- Photochemical smog is another type of fog and is also known as "Los Angeles smog".
- Photochemical smog occurs most prominently in urban areas that have large numbers of automobiles (Nitrogen oxides are the primary emissions).
- Photochemical (summer smog) forms when pollutants such as nitrogen oxides (primary pollutant) and organic compounds (primary pollutants) react together in the presence of SUNLIGHT. A gas called OZONE (Secondary pollutant) is formed.
- Nitrogen Dioxide + Sunlight + Hydrocarbons = Ozone (Ozone in the stratosphere is beneficial, but near the earth's surface it results in global warming as it is a greenhouse gas)
- The resulting smog causes a light brownish coloration of the atmosphere, reduced visibility, plant damage, irritation of the eyes, and respiratory distress.

12. C

- Nipah Virus is an emerging infectious disease that broke out in Malaysia and Singapore in 1998 and 1999. It first appeared in domestic pigs and has been found among several species of domestic animals including dogs, cats, goats, horses and sheep.
- The infection is also known to affect human beings. The organism which causes Nipah Virus encephalitis is an RNA or Ribonucleic acid virus. Nipah virus infection gets its name

from the village in Malaysia where the person from whom the virus was first isolated succumbed to the disease.

- How does Nipah spread or get transmitted?
- The disease spreads through fruit bats or 'flying foxes,' of the genus Pteropus, who are natural reservoir hosts of the Nipah and Hendra viruses.
- The virus is present in bat urine and potentially, bat faeces, saliva, and birthing fluids.
- Nipah Virus, which is a zoonotic disease, was known to affect humans in Malaysia and Singapore after coming in direct contact with the excretions or secretions of infected pigs.
- Nipah virus is a zoonotic virus (it is transmitted from animals to humans) and can also be transmitted through contaminated food or directly between people. In infected people, it causes a range of illnesses from asymptomatic (subclinical) infection to acute respiratory illness and fatal encephalitis

13. D

- All organisms such as plants, animals, microorganisms and human beings as well as the physical surroundings interact with each other and maintain a balance in nature.
- All the interacting organisms in an area together with the non-living constituents of the environment form an ecosystem.
- Thus, an ecosystem consists of biotic components comprising living organisms and abiotic components comprising physical factors like temperature, rainfall, wind, soil and minerals.

14. A

- **Statement 1:** The IBC 2016 Code provides for a time-bound process to resolve insolvency. When a default in repayment occurs, creditors gain control over the debtor's assets and must make decisions to resolve insolvency within a 180-day period. To ensure an uninterrupted resolution process, the Code also provides immunity to debtors from resolution claims of creditors during this period. The Code also consolidates provisions of the current legislative framework to form a common forum for debtors and creditors of all classes to resolve insolvency.
- **Statement 2:** Adjudicating authorities: The proceedings of the resolution process will be adjudicated by the National Companies Law Tribunal (NCLT), for companies; and the Debt Recovery Tribunal (DRT), for individuals.
- The duties of the authorities will include approval to initiate the resolution process, appoint the insolvency professional, and approve the final decision of creditors.

15. C

- Recently, Chaukhandi Stupa has been declared of national importance by the Archeological Survey of India (ASI).
- About Chaukhandi Stupa
- It is an ancient Buddhist site in Sarnath (Uttar Pradesh), with a lofty brick structure crowned with an octagonal tower.
- The octagonal tower on top is a Mughal monument built in 1588 to commemorate Humanyu's visit to this place.
- The Chaukhandi Stupa is popularly said to have been built during the Gupta period.

16.C

- The trophic level of an organism is the position it occupies in a food chain. A food chain is a succession of organisms that eat other organisms and may, in turn, be eaten themselves.
- The trophic level of an organism is the number of steps it is from the start of the chain. A food chain starts at trophic level 1 with primary producers such as plants, can move to herbivores at level 2, carnivores at level 3 or higher, and typically finish with apex predators at level 4 or 5.
- The path along the chain can form either a one-way flow or a food "web". Ecological communities with higher biodiversity form more complex trophic paths.
- The efficiency with which energy or biomass is transferred from one trophic level to the next is called the ecological efficiency. Consumers at each level convert on average only about 10% of the chemical energy in their food to their own organic tissue (the ten-percent law).

17. B

- IPBES Global Assessment Report on Biodiversity and Ecosystem Services is the most comprehensive report of it ever completed. It is the first intergovernmental Report of its kind and builds on the landmark Millennium Ecosystem Assessment of 2005, introducing innovative ways of evaluating evidence.
- The Report finds that around 1 million animal and plant species are now threatened with extinction, many within decades, more than ever before in human history.
- Based on a thorough analysis of the available evidence, the five direct drivers of change in nature with the largest relative global impacts so far. These culprits are, in descending order: (1) changes in land and sea use; (2) direct exploitation of organisms; (3) climate change; (4) pollution and (5) invasive alien species.

18. C

- The terrestrial part of the biosphere is divisible into enormous regions called biomes.
- No two biomes are alike. They are characterized by distinct climate (precipitation and temperature mainly), vegetation, animal life and general soil type.
- The climate determines the boundaries of a biome and abundance of plants and animals found in each one of them.

19. D

- The widely practiced Yoga sadhanas are: Yama, Niyama, Āsana, Prānāyāma, Pratyāhāra, Dhāraṇa, Dhyāna, Samādhi, Bandhās and Mudras, Shatkarmas, Yuktāhāra, Mantra-japa, Yukta-karma etc.
- Source Yojana June 2019

20.A

- Proton therapy is a type of radiation therapy — a treatment that uses high-energy beams to treat tumors.

21. B

- The interrelations between organisms and environment on land constitutes 'Terrestrial ecology'
- Due to variation in features like valleys, mountains and slopes, certain differences occur. These differences are reflected in both material and biotic diversities
- Altitudinal and latitudinal variations causes shifts and differences in the climatic patterns. Due to varied climate, the plants and animals existing in different terrestrial areas vary which results in differentiation of ecosystem as segments within the large biosphere.
- The most important limiting factors of the ecosystem are moisture and temperature.

22. D

- Anthropocene is a proposed geological epoch dating from the commencement of significant human impact on Earth's geology and ecosystems, including, but not limited to, anthropogenic climate change.
- Neither the International Commission on Stratigraphy nor the International Union of Geological Sciences have officially approved the term as a recognised subdivision of geologic time.
- Although the Anthropocene Working Group of the Subcommittee on Quaternary Stratigraphy of the ICS voted in April 2016 to proceed towards a formal golden spike proposal to define the Anthropocene epoch in the Geologic time scale and presented the recommendation to the International Geological Congress in August 2016.

23. D

- PM vary in shape and size. Fine particulates can enter easily and penetrate deep into the respiratory systems of human and can affect the lungs. It attacks the bronchi and can cause lung cancer.
- Suspension of microscopic solids and liquids particles present in the form of droplets floating in the air or atmosphere refers to as Particulate pollution.
- Some particulates occur naturally, originating from volcanoes, dust storms, forest and grassland fires, living vegetation and sea spray. Human activities, such as the burning of fossil fuels in vehicles, stubble burning, power plants, road dust, wet cooling towers in cooling systems and various industrial processes, also generate significant amounts of particulates

24. D

- Since the beginning of the Industrial Revolution, the pH of surface ocean waters has fallen by 0.1 pH units. Since the pH scale, like the Richter scale, is logarithmic, this change represents approximately a 30 percent increase in acidity.
- The world's largest per capita CO₂ emitters are the major oil producing countries; this is particularly true for those with relatively low population size. Most are in the Middle East: In 2017 Qatar had the highest emissions at 49 tonnes (t) per person, followed by Trinidad and Tobago (30t); Kuwait (25t); United Arab Emirates (25t) etc.

25. C

- There are two types of tundra – arctic and alpine. Alpine tundra occurs at high mountains above the tree line. E.g. High ranges of the Himalayas, Andes, Alps etc.
- There are no trees in the tundra (due to permafrost). The lowest form of vegetation like mosses, lichens are sparsely found on bare rocks. Coastal lowlands reindeer moss which provides the only pasturage for reindeers.
- Although amphibians and reptiles account for nearly 15,000 species worldwide, only five amphibians and a single reptile are found in the Arctic. There are no circumpolar taxa Amphibian species richness in the Arctic is as low as in desert regions.
- Animals like reindeer, arctic foxes, wolves, musk-ox, polar bear, lemming, arctic hare, arctic willow live in tundra region. Reptiles and amphibians are almost absent. Most of the animals have long life, e.g. arctic willow has a life span of 150 to 300 years.
- They are protected from chillness by the presence of thick cuticle and epidermal hair or fur. Mammals have a large body size and small tail and ear to avoid the loss of heat from the surface.

26. B

- sedimentary cycle is a cycle which comprises the weathering of an existing rock, followed by the erosion of minerals, their transport and deposition, then burial.
- Gaseous cycles include those of nitrogen, oxygen, carbon, and water; sedimentary cycles include those of iron, calcium, phosphorus, sulfur, and other more-earthbound elements

27. A

- Prime Minister of India is the Chairperson of NITI Aayog. Its Governing Council consists of the Chief Ministers of all the States and Lt. Governors of Union Territories in India.
- Regional Councils will be created to address particular issues and possibilities affecting more than one state. These will be formed for a fixed term. It will be summoned by the Prime Minister. It will consist of the Chief Ministers of States and Lt. Governors of Union Territories. These will be chaired by the Chairperson of the NITI Aayog or his nominee.
- It is a non-constitutional body and have no power in disbursing any of the grants to the states.

28. A

- A top level predator is the one at the top of a food chain, with no natural predators. Large carnivores in general are often used as indicator species because of their seat at the top of the food chain. If they are absent from the ecosystem, it indicates that they are starved/deprived the necessary food.
- Frog is a freshwater species. Absence of frog indicates the absence of fresh water. If frog is not present in the area, it indicates that the area is prone to drought within some period of time.

29.A

- CAFE or Corporate Average Fuel Efficiency/Economy regulations are in force in many advanced as well as developing nations, including India. They aim at lowering fuel consumption (or improving fuel efficiency) of vehicles by lowering carbon dioxide (CO₂) emissions, thus serving the twin purposes of reducing dependence on oil for fuel and controlling pollution.
- Corporate Average refers to sales-volume weighted average for every auto manufacturer. The norms are applicable for petrol, diesel, LPG and CNG passenger vehicles. CAFE regulations in India came into force from April 1, 2017.
- Under this, average corporate CO₂ emission must be less than 130 gm per km till 2022 and below 113 gm per km thereafter.

30. D

- India has signed Rs 200 crore deal to acquire 'Strum Ataka' anti-tank missile from Russia for its fleet of Mi-35 attack choppers (exported from Russia).
- The deal was signed under the emergency clauses through which the missiles would be supplied within 3 months of contract signing.
- After the Pulwama attack, government gave emergency powers to the three services to buy the equipment of their choice within three months at the cost of up to Rs 300 crore per case.

31. A

- The equatorial rainforest supports the greatest biodiversity (number and types of living organisms in an area) on Earth. This is the result of abundant moisture and sunlight. Average daily temperatures are around 28°C with a low diurnal (variation in temperature that occurs from the highs and lows during the day) temperature range.
- Temperatures rarely fall below 22°C and cloud cover restricts temperatures to 32°C during the day (as the result of cloud cover caused by high levels of evapotranspiration). Rainfall levels are high throughout the year as the result of the ITCZ.
- Convective rainfall results in annual rainfall levels of around 2000mm. Storms typically occur during the late afternoon as the result of intense heating during the day.
- Both high levels of rainfall and temperatures contribute to a year-round growing season. High levels of evapotranspiration create an incredibly humid environment.
- The equatorial vegetation comprises a multitude of evergreen trees, e.g. mahogany, ebony, dyewoods etc. In the coastal areas and brackish swamps, mangrove forests thrive.
- All plants struggle upwards (most epiphytes) for sunlight resulting in a peculiar layer arrangement (canopy).
- Epiphyte (commensalism – epiphyte benefits without troubling the host): An epiphyte is a plant that grows harmlessly upon another plant (such as a tree) and derives its moisture and nutrients from the air, rain, and sometimes from debris accumulating around it.

32.D

- World Population Prospects 2019 has been released by the Population Division of the UN Department of Economic and Social Affairs.

33.B

- The most important characteristic feature of a typical food chain involves a nutritive interaction between the living organism of an ecosystem. The food chain is always straight. That means a food chain always proceeds in a progressive straight line.
- In a food chain, the flow of energy is unidirectional. In easy words, moves in a single direction. Any food chain will have from a minimum of three to a maximum of five tropical levels.

34. C

- Removal of Judges: A judge of a high court can be removed from his office by an order of the President. It is mentioned under the Article 217 of the Indian Constitution. The President can issue the removal order only after an address by the Parliament has been presented to him in the same session for such removal.
- The address must be supported by a special majority of each House of Parliament (i.e., a majority of the total membership of that House and majority of not less than two-thirds of the members of that House present and voting).
- The grounds of removal are two—proved misbehaviour or incapacity. Thus, a judge of a high court can be removed in the same manner and on the same grounds as a judge of the Supreme Court.
- The Judges Enquiry Act (1968) regulates the procedure relating to the removal of a judge of a high court by the process of impeachment

35. C

- Scientists have created an “artificial leaf” that could turn carbon dioxide into fuel.
- The new technology was inspired by the way plants use photosynthesis to turn carbon dioxide into glucose and oxygen. The artificial leaf mimics this process – with the help of a cheap red powder called cuprous oxide – and produces methanol and oxygen.

36. A

- Bioaccumulation is the process of direct partitioning of chemicals between the water and the organism, leading to elevated concentrations in the latter.
- Lipid or fat soluble substances cannot be diluted, broken down, or excreted in urine.
- Toxic environmental contaminants can be transferred from mother to infant via breastfeeding. Persistent organic pollutants (POPs) are a family of lipophilic stable chemicals that bioaccumulate in adipose tissue and create a lasting toxic body burden. Breastfeeding provides a significant source of exposure to POPs early in human life

37. A

- Grasslands (steppes) are temperate environments, with warm to hot summers and cool to very cold winters; temperatures are often extreme in these midcontinental areas.
- They are often located between temperate forests and deserts, and annual precipitation falls between the amounts characteristic of those zones. Winds play an important role in these very open environments. Precipitation varies from highly seasonal to spread

throughout the year. There is a substantial snow buildup in the northern part of the zone, diminishing greatly to the south.

- Grassland is largely dominated by grasses, but with annual and perennial forbs intermixed in different proportions in different areas. The average height of the grass is correlated with rainfall, so there are tall-, medium-, and short-grass prairie zones across a longitudinal gradient from east to west in North America.
- Plant and animal diversity is rather low in this structurally simple, temperate-climate, zone

38. A

- A sudden increase in the level of acidity of surface waters (lakes, streams, and rivers) in mid-latitude areas, caused by the melting in spring of snow that has accumulated through the winter, and stored dry fallout of acidic precipitation.

39.D

About the SDG Gender Index:

- Developed by Equal Measures 2030, a joint effort of regional and global organisations including African Women's Development and Communication Network, Asian-Pacific Resource and Research Centre for Women, Bill and Melinda Gates Foundation etc.
- It accounts for 14 out of 17 SDGs (sustainable development goals) that cover aspects such as poverty, health, education, literacy, political representation and equality at the workplace.
- A score of 100 reflects the achievement of gender equality in relation to the targets set for each indicator. It means, for example, that 100% of girls complete secondary education, or that there is around 50-50 parity for women and men in Parliament. A score of 50 signifies that a country is about halfway to meeting a goal.

Key findings- India specific:

- India is ranked 95th among 129 countries.
- India's highest goal scores are on health (79.9), hunger & nutrition (76.2), and energy (71.8).
- Its lowest goal scores are on partnerships (18.3, in the bottom 10 countries worldwide), industry, infrastructure and innovation (38.1), and climate (43.4).
- On indicators that define such goals, India scored 95.3 on the percentage of female students enrolled in primary education who are overage.

40.A

- Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification.
- Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources.
- NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

Nonpoint source pollution can include:

- Excess fertilizers, herbicides and insecticides from agricultural lands and residential areas
- Oil, grease and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes and faulty septic systems
- Atmospheric deposition and hydromodification

41.C

- FSSAI has developed State Food Safety Index to measure the performance of states on various parameters of Food Safety.
- This index is based on performance of State/ UT on five significant parameters, namely, Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.
- The Union Territory (UT) of Chandigarh topped the 2018-19 food safety index, which recognizes the efforts of states, food businesses and individuals in promoting food safety in 2018-19.

42. A

- Carbon is also present in the Earth's atmosphere, soils, oceans, and crust. When viewing the Earth as a system, these components can be referred to as carbon pools (sometimes also called stocks or reservoirs) because they act as storage houses for large amounts of carbon.
- Any movement of carbon between these reservoirs is called a flux. In any integrated system, fluxes connect reservoirs together to create cycles and feedbacks. It is typically measured in units of gigatonnes of carbon per year.
- Option B corresponds to carbon sequestration and Option C corresponds to carbon neutrality.

43. A

- 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
- In aquatic ecosystems the simple grazing food chain act as main conduit of energy

44. B

- Temperatures are generally high, including the earth's extremes, but it may be cold at night (daily temperature variation is more extreme in dry climates) and very cold in winter in higher-latitude deserts.

Prelimsure 2020

- Desert soils are variable in color but often light brown, gray, or yellowish. They are usually calcareous and may be highly saline because of the high evaporation rate and lack of runoff, with a continual buildup of salts (calcium carbonate, gypsum, sodium chloride)
- Desert vegetation typically consists of open, well-spaced shrubs with numerous branches from ground level and small, thick leaves. Grasses may or may not fill in the spaces between the shrubs
- Desert species diversity is very much dependent on rainfall and vegetative cover, with the fewest plant and animal species in the driest deserts.
- In typical desert shrubs, the leaves are small and heavily coated with waterproofing materials to prevent excess water loss, gray-green to reflect the sunlight and prevent overheating; the roots are shallow but extensive to take advantage of the shallow organic layer
- Desert animals exhibit many physiological and anatomical adaptations to drought, including the ability to go without free water (their metabolic water is obtained entirely from their diet).
- Many species are active only at night (or early and late in the day in diurnal species), when the humidity is higher and the temperature lower. Nocturnal activity also leads to reduced predation by visual predators (made easy because of the openness of the environment)

45. D

- The global FDI slipped by 13% in 2018, to US\$1.3 trillion from \$1.5 trillion in 2017, the third consecutive annual decline.
- In South Asia, overall, FDI inflows increased by 3.5% to \$54 billion. The prospects for FDI inflows into South Asia are largely determined by expectations of growing investment into India.
- Investment in India rose by 6% to USD 42 billion with strong inflows in manufacturing, communication, financial services and cross-border merger and acquisition activities. However, India's rank as a source country for FDI fell one notch to the 10th position as it was overtaken by Spain.

46. C

- Coniferous forests are characterised by strong seasonal climates, high rainfall, short summers and long winters. Soils of these forests are low in mineral content and organic material.
- The light coloured acidic soils of these forests are called podzols. The plant species found here are fir, spruce and pine trees./
- Animals like wolf, lynx, red fox, bear, porcupine etc are seen here. The conifers require little moisture are best suited to this type of subArctic climate

47. B

- Like hazardous waste, the problem of e-waste has become an immediate and long term concern as its unregulated accumulation and recycling can lead to major environmental problems endangering human health.

- The main sources of electronic waste in India are the government, public and private (industrial) sectors, which account for almost 70 per cent of total waste generation. The contribution of individual households is relatively small at about 15 per cent; the rest being contributed by manufacturers.
- The presence of elements like lead, mercury, arsenic, cadmium, selenium, hexavalent chromium, and flame retardants beyond threshold quantities make e-waste hazardous in nature.

48.C

Key highlights of new framework:

- The new framework for resolution of bad loans, offers a 30-day gap for stress recognition instead of the one-day default earlier.
- Lenders will have complete discretion with regard to the design and implementation of resolution plans, subject to the specified timeline and independent credit evaluation.
- Lenders may recognise incipient stress in loan accounts, immediately on default, by classifying such assets as special mention accounts (SMA).
- For the purpose of restructuring, the definition of 'financial difficulty' to be aligned with the guidelines issued by the Basel Committee on Banking Supervision; and,
- If multiple lenders are involved, all the lenders must enter into an inter-creditor agreement (ICA) during the review period, to provide for ground rules for the resolution plan

49. B

- When carbon dioxide (CO₂) is absorbed by seawater, chemical reactions occur that reduce seawater pH, carbonate ion concentration, and saturation states of biologically important calcium carbonate minerals. These chemical reactions are termed ocean acidification.
- Changes in ocean chemistry can affect the behavior of non-calcifying organisms as well. The ability of certain fish, like pollock offsite link, to detect predators is decreased in more acidic waters. Recent studies have shown that decreased pH levels also affect the ability of larval clownfish offsite link to locate suitable habitat.
- Ocean acidification threatens the Great Barrier Reef by reducing the viability and strength of coral reefs.

50.A

- The four member countries of the Kunming Initiative that was rechristened as the BCIM Forum (Bangladesh, India; China, and Myanmar) for regional cooperation is a Track II initiative that was given Track I coordination in 2011.

51.C

- A food web (or food cycle) is the natural interconnection of food chains and a graphical representation (usually an image) of what-eats-what in an ecological community. Another name for food web is consumer-resource system.
- Four characteristics of food web are:

- It consists of number of interconnected food chains through which energy travels in an ecosystem.
- Usually members of higher trophic level feed upon many organism of lower trophic level.
- Presence of complex food webs increases the stability of the ecosystem.
- More complex food webs improves the adaptability and competitiveness of the organism

52. A

- Subalpine forests extend from Kashmir to Arunachal Pradesh. It is a temperate coniferous forest found even in western Nepal and Bhutan.
- The common trees found in these forests are rhododendrons, *Lonicera angustifolia* etc. The most common mammals seen are himalayan tahr, civets, muntjac etc.
- The timber line in these forests is higher due to heavy rainfall and high humidity and is also influenced by temperature

53. D

- Wild dorian tree is a keystone species since it attract reptiles, birds, monkeys etc. and thus support the terrestrial ecosystem.
- Insects, honeybee etc. engage in cross pollination which increase the genetic and species diversity.
- Corals are keystone as it forms important part of food chain in aquatic ecosystem.
- Elephant uproots trees and thus help in movement of carnivorous predators. It also plays with muds which gradually turns the area into minor water bodies and support the ecosystem.

54. C

- The ReCAAP is the first regional Government-to-Government agreement to deal with piracy and armed robbery at sea in Asia.
- Union Government has designated Indian Coast Guard (ICG) as the focal point within India for ReCAAP.
- Information sharing, capacity building and mutual legal assistance are the three pillars of co-operation under the ReCAAP agreement.

55. D

- Resistance is the ability for an ecosystem to remain unchanged when being subjected to a disturbance or disturbances. Some ecosystems are better at resisting change than others, and therefore have high resistance.
- Resilience is the ability and rate of an ecosystem to recover from a disturbance and return to its pre-disturbed state. Some ecosystems can shift greatly from their previous state and still return to pre-disturbance conditions. The measure for how far an ecosystem can be shifted from its previous state and still return to normal is called its amplitude

- Both resistance and resilience are components of determining ecosystem stability. Both can also occur at the community, population, and individual level. An ecosystem can have high resistance to disturbance, but low resilience, and vice versa. Low resistance can sometimes be advantageous, such as in ecosystems that rely on natural disturbances to temporarily change their conditions in order to remain stable over the long term.

56. B

- After the end of Cold War, China sought to establish security cooperation with Central Asian states to prevent Uighurs of Central Asia & Xinjiang province in China to create unrest together. Hence, a group called 'Shanghai-5' (China, Kazakhstan, Kyrgyzstan, Russia & Tajikistan) was established in 1996 to undertake confidence building measures & demilitarize borders. In 2001, Uzbekistan joined the grouping & it was renamed as Shanghai Cooperation Organization (SCO).

57. A

- Aquatic ecosystems refer to plant and animal communities occurring in water bodies. Aquatic ecosystems are classified into two subgroups: 1) Freshwater ecosystems, such as rivers, lakes and ponds; 2) Marine ecosystems, such as oceans, estuaries and mangroves.
- Aquatic ecosystems are classified on the basis of salinity into the following types:
 - Freshwater ecosystems: water on land which is continuously cycling and has low salt content (always less than 5 ppt) is known as fresh water.
 - There are two types of freshwater ecosystems: 1) Static or still water (Lentic) ecosystems, e.g. pond, lake, bogs and swamps. 2) Running water (Lotic) ecosystems, e.g. springs, mountain brooks, streams and rivers.
 - Marine ecosystems: the water bodies containing salt concentration equal to or above that of seawater (i.e., 35 ppt or above). E.g. shallow seas and open ocean.
 - Brackish water ecosystems: these water bodies have salt content in between 5 to 35 ppt. e.g. estuaries, salt marshes, mangrove swamps and forests.

58. D

- The Great Pacific Garbage Patch is a collection of marine debris in the North Pacific Ocean. Marine debris is litter that ends up in oceans, seas, and other large bodies of water.
- The Great Pacific Garbage Patch, also known as the Pacific trash vortex, spans waters from the West Coast of North America to Japan. The entire Great Pacific Garbage Patch is bounded by the North Pacific Subtropical Gyre.
- The amount of debris in the Great Pacific Garbage Patch accumulates because much of it is not biodegradable. These patches are almost entirely made up of tiny bits of plastic, called microplastics. Microplastics can't always be seen by the naked eye.

59. A

- The Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (BEPS) was signed in Paris in 2017. It entered into force on 1st

July 2018. The Multilateral Convention is an outcome of the OECD/G20 Project to tackle Base Erosion and Profit Shifting (BEPS).

- The Convention will modify India's treaties in order to curb revenue loss through treaty abuse and base erosion and profit-shifting strategies by ensuring that profits are taxed where substantive economic activities generating the profits are carried out and where value is created.
- The Convention enables all signatories to meet treaty-related minimum standards to counter treaty abuse and eliminate double taxation that were agreed as part of the BEPS package.
- **The Union cabinet approved ratification of a multilateral convention to implement OECD's project on checking tax evasion on June 2019.**

60. A

- The aquatic organisms are classified on the basis of their zone of occurrence.
- Neuston: These organisms live at the air-water interface, e.g. floating plants.
- 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.
- Nekton: This group contains powerful swimmers that can overcome the water currents.
- Benthos: The benthic organisms are those found living at the bottom of the water mass.

61. D

- Excessive pollutants (Industrial effluents, domestic waste, agricultural runoff etc.) are dumped into wetlands beyond the recycling capacity.
- Habitat destruction and deforestation create ecological imbalance by altering the population of wetland species.
- Conversion of wetlands for agriculture and encroachment by public and mafia.
- Overfishing and fish farming (Aquaculture).
- Overgrazing in marshy soils.
- Removal of sand from beds near seas makes the wetland vulnerable to wave action and tidal bore.

62. D

- FCI was set up in 1965 (under the Food Corporation Act, 1964) with three basic objectives:
 - provide effective price support to farmers by procuring the crop at Minimum Support Price (MSP) if they are not able to sell it in Agricultural Produce Marketing Committee (APMC) authorized mandis
 - procure & supply grains to PDS for distributing subsidized staples to economically vulnerable sections of society
 - keep strategic reserve to stabilize markets for basic food grains
- <http://fci.gov.in/aboutUs.php?view=268>
- The economic cost to FCI includes acquisition cost of food grains at MSP, procurement incidentals (e.g. labour & transport charges, godown rentals) and distribution cost (freight, handling, storage & interest charges, losses during storage etc). Difference between Economic Cost and Central Issue Price (CIP) of food grains under various schemes

(including National Food Security Act, 2013) is the operational loss to FCI and is reimbursed by Government of India as food subsidy.

63. A

- The important factors affecting an aquatic ecosystem are:
 - Sunlight
 - Temperature
 - Dissolved oxygen
 - Transparency of water

64. C

- The severe ozone destruction represented by the ozone hole requires that low temperatures be present over a range of stratospheric altitudes, over large geographical regions, and for extended time periods.
- The range of winter minimum temperatures found in the Arctic is much greater than in the Antarctic. In some years, PSC formation temperatures are not reached in the Arctic, and significant ozone depletion does not occur.
- In contrast, PSC formation temperatures are always present for many months somewhere in the Antarctic and severe ozone depletion now occurs in each winter season.

65. B

- Fluorinated gases are man-made gases that can stay in the atmosphere for centuries and contribute to a global greenhouse effect. There are four types: hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and nitrogen trifluoride.
- Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur Hexafluoride (SF₆) are collectively known as fluorinated greenhouse gases. Each of these gases is controlled by the global environmental agreement known as the Kyoto Protocol.
- Perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆), can remain in the atmosphere for thousands of years.
- As per the directives of the various protocols, sufficient alternatives have already been found for the fluorinated gases. Their overall use is expected to be cut by upto 90% by 2050.

66. B

- Photic (or “euphotic”) zone is the portion that extends from the surface of the waterbody down to where the light level is 1% of that at the surface. The depth of this zone depends on the transparency of water. Photosynthetic activity is confined to the photic zone. Both photosynthesis and respiration activity takes place.
- The lower layers of the aquatic ecosystems, where light penetration and plant growth are restricted forms the aphotic zone (profundal zone). Only respiration activity takes place in this zone. The aphotic zone extends from the end of the photic zones to bottom of the lake.

67. A

- Recently, the report of the 'Expert Committee on Micro, Small and Medium Enterprises' under the chairmanship of U.K. Sinha was released by the Reserve Bank of India.
- Read committee recommendation here: <https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/select-suggestions-of-uk-sinha-panel-on-msmes-to-be-implemented-in-15-days-says-gadkari/articleshow/70996743.cms>

68. D

- NWCP was implemented in the year 1985-86.
- Under the programme, 115 wetlands have been identified by the MoEF which require urgent conservation and management interventions.
- Criteria for identification of wetlands of national importance under NWCP are the same as those prescribed under the Ramsar Convention on Wetlands.
- The Central Government is responsible for the overall coordination of wetland conservation programmes.
- It also provides guidelines, financial & technical assistance to state govt.
- Since the land resources belong to them, the State Governments/UT Administration are responsible for the management of wetlands.



69. A

- An ice layer on the top of a water body can effectively cut off light. Photosynthesis stops but respiration continues in such water body.
- If the water body is shallow, the oxygen gets depleted, and the fish die. This condition is known as winterkill

70. B

- A circular economy is an economic system aimed at eliminating waste and the continual use of resources

- The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

71. C

- Synthesis gas is a fuel gas mixture consisting primarily of hydrogen, carbon monoxide, and very often some carbon dioxide. The name comes from its use as intermediates in creating synthetic natural gas and for producing ammonia or methanol.
- The syngas is produced by gasification of a carbon containing fuel to a gaseous product that has some heating value.
- It is as an intermediate to produce other chemicals. The production of syngas for use as a raw material in fuel production is accomplished by the gasification of coal or municipal waste. In these reactions, carbon combines with water or oxygen to give rise to carbon dioxide, carbon monoxide, and hydrogen.
- Syngas is used as an intermediate in the industrial synthesis of ammonia and fertilizer.
- Source: <http://biofuel.org.uk/what-is-syngas.html>

72. C

- India's first bio-toilet was installed by the Defence Research & Development Organisation (DRDO) at its Defence Institute of High Altitude Research in Leh in 1994.
- India is home to 60 per cent of the world's population that defecates in the open. Open defecation causes numerous water-borne diseases like diarrhoea, which kills 500,000 children every year.
- The zero-waste biodigester technology breaks down human excreta into usable water and gas through anaerobic process. It also does away with the need to set up large sewerage networks.

73. A

- Currently, only GM cotton permitted to be grown in India are hybrids/varieties that contain 'cry1Ac' and 'cry2Ab' genes, isolated from the soil bacterium *Bacillus thuringiensis* (Bt) and coding for proteins toxic to bollworm insect pests. Ht-Bt Cotton/ BG Cotton – III, involves the addition of another gene, 'Cp4-Epsps' from another soil bacterium, *Agrobacterium tumefaciens*.
- Ht-Bt cotton can tolerate Glyphosate, a herbicide variety, whose action kill only the weeds (Pink Bollworm), not the crop. In India, Glyphosate is registered for use on tea and non-crop area.

74. C

Mitigation

- Demarcation of wetlands using the latest technology, proper enforcement of laws and stringent punishments for violators.
- Preventing unsustainable aquaculture and cultivation of shellfish.
- Treating industrial effluents and water from farmlands before discharging into wetlands.
- Utilizing wetlands on a sustainable basis by giving enough time for natural regeneration.

- Artificial regeneration for a quick recovery.
- Afforestation, weed control, preventing invasive species is the key to wetland conservation.
- Preventive measures to stop the introduction of exotic invasive species like water hyacinth.
- Soil conservation measures & afforestation.
- Preventing grazing in peripherals of wetlands.
- Wildlife conservation, sustainable tourism, eco-tourism and sensitizing local populace.
- Eutrophication abatement by processing nutrient rich discharge into the water body.
- Involving the local population in the conservation of wetlands.

75. C

- FLR is an ongoing process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes which involves restoring a whole landscape.
- FLR manifests through different processes such as: new tree plantings, managed natural regeneration, agroforestry, or improved land management to accommodate a mosaic of land uses, including agriculture, protected wildlife reserves, managed plantations, riverside plantings and more
- <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration>

76. B

- Extended Producer Responsibility (EPR) is a policy approach under which producers are given a significant responsibility – financial or physical – for the treatment or disposal of post-consumer products.
- Such principles provide incentives to prevent wastes at the source, promote product design for the environment and support the achievement of public recycling and materials management goals.
- In India, all of the waste management rules such as e-waste rules, plastic wastes, solid wastes etc. are compliant with extended producer responsibility

77. A

- Wetlands are indispensable for the countless benefits or “ecosystem services” that they provide humanity, ranging from freshwater supply, food and building materials, and biodiversity, to flood control, groundwater recharge, and climate change mitigation.
- Wetlands are habitat to aquatic flora and fauna, numerous species of native and migratory birds.
- Wetlands are an important resource for sustainable tourism.
- They carry out water purification, filtration of sediments and nutrients from surface water.
- They help in nutrients recycling, groundwater recharging and stabilisation of local climate.
- Play an important role in flood mitigation by controlling the rate of runoff.
- Buffer (act as a riparian buffer) shorelines against erosion and pollutants.
- They act as a genetic reservoir for various species of plants (especially rice).

78. D

- National Institute of Rural Development and Panchayati Raj (NIRDPR) has launched a training programme- a certificate course for Sustainable Livelihoods and Adaptation to Climate Change (SLACC).
- SLACC is funded by the Special Climate Change Fund, which was set up under the UNFCC for adaptation and capacity building projects.
- It is being implemented in convergence with the Mahila Kisan Sashaktikaran Pariyojana, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other Centrally-sponsored schemes.
- The objective of SLACC is to create a cadre of over 200 certified 'climate-smart' Community Resource Persons (CRPs) including progressive farmers and over 100 young professionals in villages to secure their livelihood through climate-proof planning and adaptations.

79. A

- Madden-Julian Oscillation (MJO) The MJO wave is a global band of low-pressure area moving periodically from West to East and determines the initiation and intensity of low-pressure areas/depressions/cyclones and also oversees monsoon onsets under its footprint.
- It is disturbance of clouds, rainfall, winds, and pressure that traverses the planet in the tropics (between 30° N and 30°S) and returns to its initial starting point in 30 to 60 days, on average. There can be multiple MJO events within a season, and so the MJO is best described as intra-seasonal tropical climate variability (i.e. varies on a week-to-week basis).
- MJO influences the ENSO cycle. It does not cause El Nino or La Nina, but can contribute to the speed of development and intensity of El Nino and La Nina episodes
- The location and strength of the Madden-Julian Oscillation (MJO) wave play an important role in the development of monsoon over India.

80. A

Wetlands International

- Wetlands International is a global organisation (NGO) that works to sustain and restore wetlands and their resources for people and biodiversity.
- Wetlands International's work ranges from research, advocacy and engagement with governments, corporate and international policy fora and conventions.

81. A

- **Ambubachi Mela**
 - It is an annual festival held at Kamakhya temple, atop Nilachal hills of Guwahati, Assam on the bank of Brahmaputra river.
 - Kamakhya Temple is one of the 51 shakti shrines representing the different body parts of Shiva's consort Sati. It is considered as one of the prime seats of Tantric

cult. • Temple is believed to be the site where Hindu deity Sati's womb and genitals fell after she burned to death.

- During the four-day event, it is believed that the presiding goddess of the temple, Devi Kamakhya (Goddess of fertility), goes through her annual cycle of menstruation.
- **Mela Kheerbhawani**
 - The Kheer Bhawani mela starting on Zeasht Astami is one of the biggest religious functions of the displaced community Kashmiri Pundit
 - It was held at the famous Ragnya Devi temple in Jammu and Kashmir's Ganderbal district.
 - During this Kashmiri Pandits visit five other temples of Tulmulla in Ganderbal district, Tikker in Kupwara, Laktipora Aishmuqam in Anantnag and Mata Tripursundri Devsar and Mata Kheerbhawani Manzgam in Kulgam district
- **Chamliyal Mela**
 - It is celebrated at Jammu Kashmir's Chamliyal border shrine along the International Border (IB).
 - The fair takes place at the shrine of Baba Dalip Singh Manhas, a saint popularly known as Baba Chamliyal, in Samba district.

82. A

- Iron fertilization is the intentional introduction of iron to iron-poor areas of the ocean surface to stimulate phytoplankton production. This is intended to enhance biological productivity and/or accelerate carbon dioxide sequestration from the atmosphere.
- The thinking behind the process of iron fertilisation is such that iron is a vital micronutrient that phytoplankton need to grow but it's generally scarce in the ocean. The phytoplankton slurp up the carbon dioxide during photosynthesis at the ocean's surface.

83. C

- The principles under the Conservation agriculture includes:
 - Direct seeding: It involves growing crops without mechanical seedbed preparation and with minimal soil disturbance since the harvest of the previous crop. The term direct seeding is understood in CA systems as synonymous with no-till farming, zero tillage, no-tillage, direct drilling, etc.
 - Cover crop is a plant that is grown primarily for the benefit of the soil rather than the crop yield. Cover crops are commonly used to suppress weeds, manage soil erosion, help build and improve soil fertility and quality, control diseases and pests, and promote biodiversity. It is used in conservation agriculture if there is a long gap between harvest season and next sowing of crops.
 - Crop rotation: It is not only necessary to offer a diverse "diet" to the soil micro organisms, but as they root at different soil depths, they are capable of exploring different soil layers for nutrients. Nutrients that have been leached to deeper layers and that are no longer available for the commercial crop, can be "recycled" by the crops in rotation.

- Source: <http://www.fao.org/conservation-agriculture/overview/what-is-conservation-agriculture/en/>

84. D

- The Convention uses a broad definition of wetlands. It includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peatland, oases, estuaries, deltas and tidal flats, mangroves and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans.

85. B

- Kaleshwaram Lift Irrigation (KLIP) Project will be world's largest multi-stage, multipurpose lift irrigation (Earlier the Colorado lift scheme in America and the Great Manmade River in Egypt were the largest).
- It is being built across Godavari river. It will harness water at the confluence of two rivers with Godavari by constructing a barrage at Medigadda in Jayshankar Bhoopalpally district.
- It will divert water through lifts and pumps into a huge and complex system of reservoirs, water tunnels, pipelines and canals. It also includes longest irrigation tunnel in the world.

86. C

- There are two main types of systems on Earth, a closed system and an open system. A closed system occurs when the chemicals or elements used in an ecosystem are recycled instead of being lost. The che of matter belong to this class.
- An open system occurs when the sun provides Earth with energy in the form of light which is usually used and then lost in the form of heat as it travels through the various trophic levels on Earth. Cycle of energy belong to this class.
- Matter, which is the building blocks of life continually cycle through Earth's systems, the atmosphere, hydrosphere, biosphere, and lithosphere, on time scales that range from a few days to millions of years.
- These cycles are called biogeochemical cycles, because they include a variety of biological, geological, and chemical processes. They are majorly a closed cycle.
- An ecological pyramid is a graphical representation designed to show the biomass or bioproductivity at each trophic level in a given ecosystem.
- The pyramid of energy is always upright because when the energy flows from one trophic level to another, some energy is always lost as heat in each step whereas the pyramid of biomass and number may not always be up right and it can be inverted too.

87. D

- Indian Army recently commissioned a "Continuous Ambient Air Quality Monitoring System (CAAQMS)" at Fort William Military Station as a part of its countrywide 'Go Green' initiative.
- The CAAQMS at the Eastern Command headquarter will measure ambient air quality on real time basis.

- Go Green Initiative is the environment conservation initiative launched by the Indian Army which includes awareness drive and campaigns and other projects like the recent installation of a 2 MW Solar Power Plant.

88. A

- 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 maintained as part of the Ramsar List.

89. B

- Water hyacinth is a free-floating perennial aquatic plant, it is least likely to impact the agricultural fields.
- Prosopis juliflora is a shrub or small tree etc.
- Fallarmy worm is the larval life stage of a fall armyworm moth. It is regarded as a pest and can damage and destroy a wide variety of crops, which causes large economic damage. It was first reported in Africa in 2016, where it is causing significant damage to maize crops and has great potential for further spread and economic damage.
- It has since spread to 28 countries in Africa. In 2018, it began to spread widely in India. In January 2019, heavy infestation of fall armyworm was recorded from corn plantations of Sri Lanka

90. D

- Food Fortification has a high benefit-to-cost ratio. The Copenhagen Consensus estimates that every 1 Rupee spent on fortification results in 9 Rupees in benefits to the economy. It requires an initial investment to purchase both the equipment and the vitamin and mineral premix, but the overall costs of fortification are extremely low.
- Even when all program costs are passed on to consumers, the price increase is approximately by 1-2%, which is less than the normal price variation. Following are the various benefits of fortification of foods: Nutrients are added to staple foods since they are widely consumed.
- Thus, this is an excellent method to improve the health of a large section of the population, all at once. It is a safe method of improving nutrition among people. The addition of micronutrients to food does not pose a health risk to people. The quantity added is small and well under the Recommended Daily Allowances (RDA) and are well regulated as per prescribed standards for safe consumption.

91. A

- Recently, Beekeeping Development Committee setup under the Chairmanship of Bibek Debroy recommended to recognize honeybees as inputs to agriculture and considering landless beekeepers as farmers.

- India has four major honey bee species; two domesticated species Indian or Asian honey bee and European honey bee (introduced in India in 20th century) and two wild species-rock honey bee and dwarf honey bee

92. A

- Indian Navy launched Operation Sankalp in the Persian Gulf and the Gulf of Oman to reassure Indian flagged vessels transiting through strategic shipping lane between Strait of Hormuz, Persian/ Arabian Gulf Region are safe following the recent maritime incidents in the region.
- INS Chennai and INS Sunayna have been deployed in the region to undertake maritime security operations. In addition, aerial surveillance in the area is also being done by Indian Navy aircraft

93. D

- Upper Ganga River is a Ramsar site in Uttar Pradesh. There are no Ramsar sites in the state of Uttarakhand
- Sunderbans in West Bengal is the largest Ramsar site by size
- Rajasthan has only two Ramsar sites whereas states like Kerala, Punjab and Haryana have 3



94. C

- RNG is natural gas derived from processing raw biogas, which is produced from industry, agriculture and waste management. The most common source of biogas — which consists largely of methane — is the breakdown of organic waste at wastewater treatment plants and landfills.
- Methane is at least 20 times more potent than carbon dioxide at trapping heat in the atmosphere. By capturing waste methane and processing it to make RNG, we can avoid its negative effects while also decreasing reliance on fossil fuels.

95. B

- Wetlands and generally larger in size when compared to normal lakes

96. A

- Short term climate forcers are those compounds belonging to any atmospheric compound which are able to exert a climate forcing by modifying the energy budget of the atmosphere, but having a shorter lifetimes than carbon dioxide.
- Black carbon, aerosol particles and tropospheric ozone (having atmospheric life-time of the order of weeks) or methane, which has a lifetime of about 10 yr, are recognized as SLCFs.
- Some SLCFs are also dangerous air pollutants, with various impacts on human health, agriculture and ecosystems: for these reasons some of their (black carbon and ozone) are also referred at Short-Lived Climate Pollutants (SLCPs). SLCFs include some hydrofluorocarbons (HFCs).
- Nitrous oxide stays in the atmosphere for more than 100 years and it is in the bracket of long lived GHGs.

97. A

- TB elimination have been integrated into the four strategic pillars of “Detect – Treat – Prevent – Build” (DTPB).
 - Detect: Find all Drug Sensitive TB and Drug Resistant TB cases with an emphasis on reaching TB patients seeking care from private providers and undiagnosed TB in high-risk populations.
 - Treat: Initiate and sustain all patients on appropriate anti-TB treatment wherever they seek care, with patient friendly systems and social support.
 - Prevent the emergence of TB in susceptible populations.
 - Build and strengthen enabling policies, empowered institutions, additional human resources with enhanced capacities, and provide adequate financial resources

98. A

- Recently the UN Women released its new Report titled, “Progress of the World’s Women 2019-20: Families in a Changing World”. It is a United Nations entity working for the empowerment of women. UN Women became operational in January 2011.

99. C

- Wetlands are areas of marsh or peatland with water that is static or flowing, fresh, brackish or saline, including areas of marine water the depth of which at low tide does not exceed 6 m.
- Wetlands are transition zones (ecotone) between terrestrial and aquatic ecosystems.
- E.g. Mangroves, lake littorals (marginal areas between highest and lowest water level of the lakes), floodplains (areas lying adjacent to the river channels beyond the natural levees and periodically flooded during high discharge in the river) and other marshy or swampy areas.

Prelimsure 2020

- These habitats experience periodic flooding from adjacent deepwater habitats and therefore supports plants and animals specifically adapted to such shallow flooding or waterlogging.
- Waterlogged soil adapted plant life (hydrophytes), and hydric soils (not enough O₂) are the chief characteristics of wetlands.
- India has over 27,000 wetlands, of which 23,000+ are inland wetlands, and around 4000 are coastal wetlands

100. C

- Rural areas have been brought in ambit of these rules since plastic has reached to rural areas also.
- First time, responsibility of waste generators is being introduced. Individual and bulk generators like offices, commercial establishments, industries are to segregate the plastic waste at source, handover segregated waste, pay user fee
- State Pollution Control Board will have the responsibility to grant/renew registration of plastic bags, or multi-layered packaging. They may not renew registration if they fail to endorse action plan of the concerned State Development Department.
- Earlier, EPR was left to the discretion of the local bodies. First time, the producers) and brand owners have been made responsible for collecting waste generated from their products.