

TARGETING

TNPSC

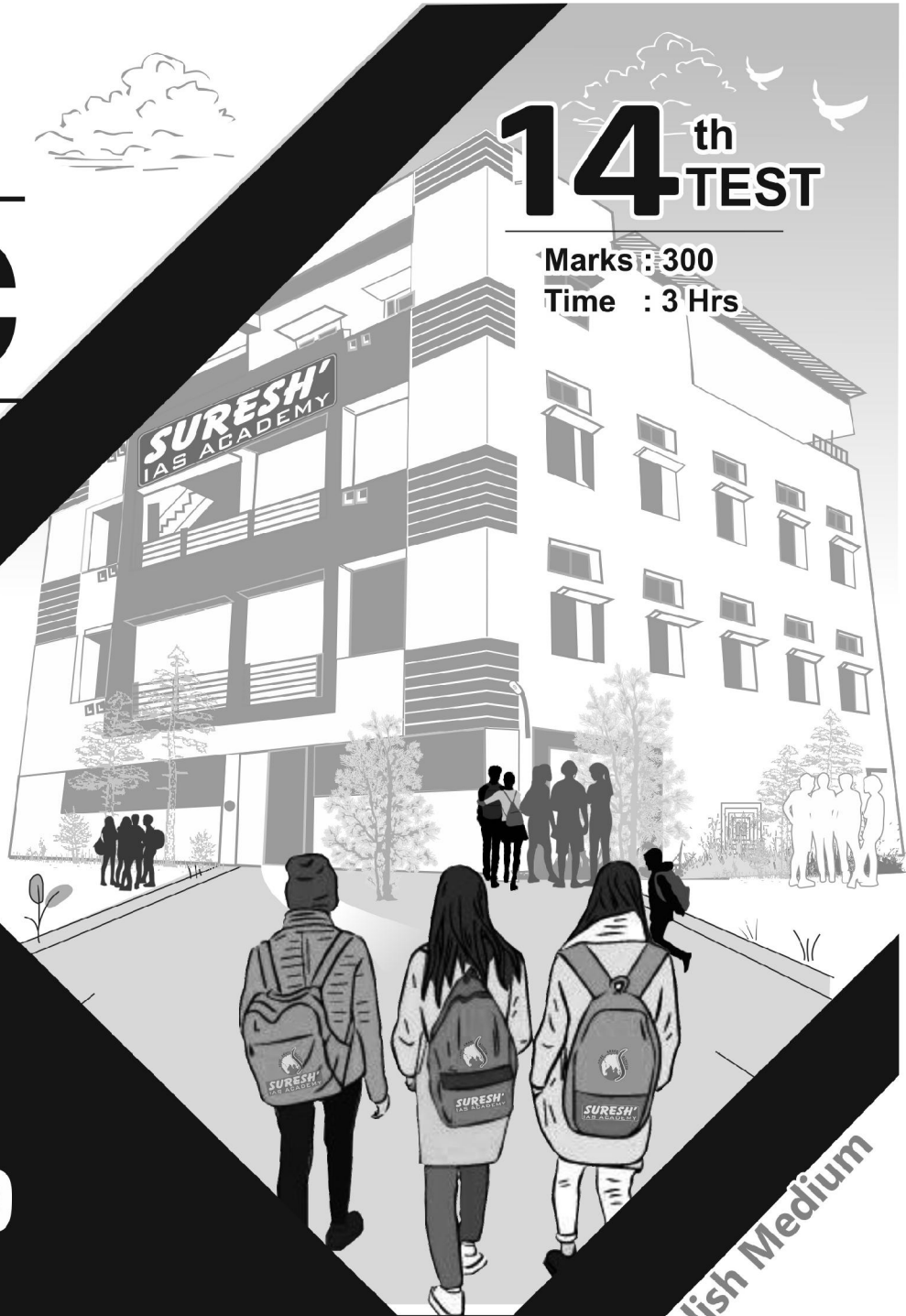
GROUP-II

2023

14<sup>th</sup> TEST

Marks : 300

Time : 3 Hrs



QUESTION  
WITH  
SIMPLIFIED  
ANSWER

English Medium

MAINS  
WRITTEN EXAM

1.Environment, Ecology

2.Bio-diversity and Its conservation

3.Human diseases, Health and Hygiene

4.Alcoholism and Drug abuse

5.Computer - Science and Advancement



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14

வெற்றி ஒன்றே  
இலக்கு

## Answer Key - English

### Unit - 1

#### 1) Write about the types of biodiversity.

##### What is Biodiversity?

2

- Biodiversity is defined as the total number and variety of species in a particular area or region.
- It includes diversity within species, between the species, and the ecosystem.

##### Types of Biodiversity

4

- Based on the diversity within species, between species, and between the ecosystem, Biodiversity can be differentiated into the following types
- **Genetic Diversity** - The type of Biodiversity in which every individual of a specific species is different from each other in terms of genetic makeup, and this variability of the genes within the members of the same species of plants and animals are termed Genetic Diversity.
- The closely related species have more common genetic information.
- **Species Diversity** - The type of Biodiversity in which different species live in a specific area, habitat, or region. Species diversity can occur in Agricultural as well as Natural ecosystems.
- **Ecosystem Diversity** - The diversity among different ecosystems with different species is termed Ecosystem Diversity. There is a difference in species in a diverse ecosystem per the habitats. It includes mountains, deserts, grasslands, and forests. It can be observed within a country, state, or a specific geographical region

#### 2) Write about Red data book and its importance.

##### Red Data Book

3

- The Red Data Book includes the entire list of threatened species. The primary goal of this documentation is to provide comprehensive information for research and analysis of various species.

- The **International Union for Conservation of Nature (IUCN)** in Morges, Switzerland, publishes this volume, which is constantly updated.-“Red” represents the danger that both plants and animals face today around the world.
- The IUCN’s Special Survival Commission first issued the **Red Data Book in 1966** as a guide for the formulation, preservation, and management of listed species.
- **Green pages** are used for species that were once endangered but have now recovered to the point where they are no longer threatened.
- This publication’s **pink pages** feature **critically endangered species**.

##### Importance of Red Data Book

3

- To support and promote biodiversity conservation while calling attention to corporations’ unethical extinction drive.
- Influence domestic and international politics and use clout to sway policy decisions.
- To support and fund conversation methodologies and to promote sustainable living.
- To provide useful information to people who are interested in biological conservation.
- To record the flora and fauna of an evolving planet, as well as the flourishes and declines of endangered species.
- To emphasise the conservation measures used for critically endangered species, as well as the science involved in their preservation

#### 3) Classify the biomes in India. State the causes of loss of biodiversity.

##### Biome meaning

1

- A biome is a large community of vegetation and wildlife adapted to a specific climate.
- There are five major types of biomes: aquatic, grassland, forest, desert, and tundra.
- However, some of the above biomes can be further divided into more specific categories,

such as freshwater, marine, savanna, tropical rainforest, temperate rainforest, and taiga.

**Biomes in India 2.5**

Biomes in India can be broadly classified in the following five categories:

- Tropical Evergreen and Semi-Evergreen forests
- Tropical Deciduous forests
- Tropical Thorn forests
- Montane forests
- Littoral and Swamp forests.

**Causes of biodiversity loss 2.5**

- The major causes for biodiversity decline are:
- Habitat loss, fragmentation and destruction (affects about 73% of all species)
- Pollution and pollutants (smog, pesticides, herbicides, oil slicks, GHGs)
- Climate change
- Introduction of alien/exotic species
- Over exploitation of resources (poaching, indiscriminate cutting of trees, over fishing, hunting, mining)
- Intensive agriculture and aquacultural practices
- Hybridization between native and nonnative species and loss of native species-Natural disasters (Tsunami, forest fire, earth quake, volcanoes)-Industrialization, Urbanization, infrastructure development, Transport – Road and Shipping activity, communication towers, dam construction, unregulated tourism and monoculture are common area of specific threats

**4) Write a short note on “Wildlife Fund”?**

**About World Wild life Fund 2**

- It is an international **non-governmental organization**
- **Founded** in 1961
- **Headquarter** — Gland (Switzerland).
- **Aim** : wilderness preservation & the reduction of human impact on the environment
- It is the world’s largest conservation organization

**Objectives: 2**

- Conserving the world’s biological diversity
- Ensuring that the use of renewable natural resources is sustainable.

- Promoting the reduction of pollution and wasteful consumption

**Reports & programmes 2**

- **Living Planet Report**— published every two years by WWF since 1998; it is based on a Living Planet Index and ecological footprint calculation
- Earth hour
- **Debt-for-nature swaps**—financial transactions in which a portion of a developing nation’s foreign debt is forgiven in exchange for local investments in environmental conservation
- **Marine Stewardship Council(MSC)** — independent non-profit organization which sets a standard for sustainable fishing-
- **Healthy GrownPotato** — eco-brand that provides high-quality, sustainably grown, packaged, and shipped potatoes to consumers by leveraging integrated pest management(IPM) farming practices on large scale farms

**5) What are the objectives of zoological survey in India?**

**Zoological Survey of India 3**

- The Zoological Survey of India (ZSI) was launched in 1916 to promote survey, exploration, and research to enhance the knowledge regarding the flora and fauna of the British Indian Empire. It is India’s apex organization on animal taxonomy.
- It originated as a Zoological Section of the Indian Museum in Kolkata.
- Initially, the ZSI had eight regional centers across India. Currently, there are 16 regional centers spread across the country.
- The headquarters is in Kolkata.-It has been declared as a designated repository for the National Zoological Collection as per **Section 39 of the National Biodiversity Act, 2002.**

**Objectives 3**

- The ZSI has contributed significantly to knowledge and research on the fauna of the country.
- The primary objectives of the ZSI are:
- To promote the survey, exploration, research, and documentation on various aspects of animal taxonomy in the Indian subcontinent.
- It also seeks the advancement of knowledge on animal taxonomy.-Make a status survey of the threatened and endemic species.

- Preparation of Red Data Book, Fauna of India, and Fauna of States.
- Bio-ecological studies on important communities/species.
- Preparation of database for the recorded species of the country.
- Maintenance and Development of National Zoological Collections

**6) Short notes on Acid rain and its environmental impact.****Acid Rain****3**

- Acid Rain, as the name implies, is the precipitation of acid in the form of rain in the most basic sense.
- Acid rain is made up of highly acidic water droplets that form as a result of air pollution, particularly the disproportionate amounts of sulfur and nitrogen produced by cars and manufacturing operations.
- There are two types of acid deposition: wet and dry.
- Any type of precipitation that removes acids from the atmosphere and deposits them on the earth's surface is known as a wet deposition.
- Dry deposition of harmful particles and gases adheres to the ground through dust and smoke in the absence of precipitation.

**Impact Acid Rain****3**

- Acid rain is very harmful to agriculture, plants, and animals. It washes away all nutrients which are required for the growth and survival of plants. Acid rain affects agriculture by the way it alters the composition of the soil.
- Acid rain has the potential to harm a wide range of animals and plants. As a result, the food web as a whole is disrupted.
- It causes respiratory issues in animals and humans.
- When acid rain falls down and flows into the rivers and ponds it affects the aquatic ecosystem. It alters the chemical composition of the water, to a form which is actually harmful to the aquatic ecosystem to survive and causes water pollution.
- Acid rain also causes the corrosion of water pipes, which further results in leaching of heavy metals such as iron, lead and copper into drinking water.

- It damages the buildings and monuments made up of stones and metals.

**7) Explain about depletion of ozone layer and why we are worried about it?****Ozone Layer Depletion****3**

- Ozone layer depletion is the thinning of the ozone layer present in the upper atmosphere.
- This happens when the chlorine and bromine atoms in the atmosphere come in contact with ozone and destroy the ozone molecules
- Some compounds release chlorine and bromine on exposure to high ultraviolet light, which then contributes to ozone layer depletion. Such compounds are known as Ozone Depleting Substances (ODS).
- The ozone-depleting substances that contain chlorine include chlorofluorocarbon, carbon tetrachloride, hydrochlorofluorocarbons, and methyl chloroform. Whereas, the ozone-depleting substances that contain bromine are halons, methyl bromide, and hydro bromofluorocarbons.
- Chlorofluorocarbons are the most abundant ozone-depleting substance. It is only when the chlorine atom reacts with some other molecule, it does not react with ozone.
- Montreal Protocol was proposed in 1987 to stop the use, production and import of ozone-depleting substances and minimise their concentration in the atmosphere to protect the ozone layer of the earth

**Effects of Ozone Depletion****3**

- Increased level of UV radiation.
- Effects on human health- Sunburns, cataracts, ageing or also to a weak immune system
- **Increased vitamin D production-** can cause severe health conditions and can also increase the probability of mortality.
- **Changes in biogeochemical cycles-** can alter sources and sinks of greenhouse gases and thus can indirectly contribute to the global warming issue.
- **Effects on marine life-** can harm the growth of plankton. A decrease in the plankton will therefore lead to a disruption of the whole marine food chain.
- **Effects on animals-** animals can also suffer from skin cancer and additional diseases caused by UVB radiation.

- **Effects on plants-** can harm the growth of plants.
- **Effects on crops-** UVB radiation is known to be able to change parts of the plant's DNA. This may lead to reduced crop yields or other issues related to it.
- **Environmental impact-** without the ozone layer, the whole food chain would collapse within a few days or weeks.
- **Economic impact-** lower crop yields and other harmful effects are likely to imply serious financial downsides on a global scale.

**8) What are strategies to control environmental pollutions?**

- Protection of our environment is one of our major responsibilities and a natural way of caring for self and for our future generations.
- There are several factors that would help reduce the impact of our consumption habits. Beneath are some of the practical ways that can be implemented in our daily life to reduce pollution.

**Choosing a Transportation Facility 1**

- Avoid using a car for short-distance travel, instead, you can make use of a bicycle which will be beneficial in terms of health as well as in the reduction of air pollution.

**Food Choices**

- As transporting the food across various parts of the country would lead to consumption of considerable fuel, we can minimize the consumption of excessive fuel by choosing food products that have been grown locally and naturally using viable methods. Hence reducing air pollution.

**Energy choices 1**

- Ensure that you switch off the lights and other electrical appliances when you are not in the room. Unplugging them when not in use would also help to save energy. Use energy-efficient light bulbs.

**Usage of Chemicals 1**

- Make use of eco-friendly chemicals because these are what we use for washing utensils, cars and homes get washed down into the sewage system that would, in turn, get collected as groundwater.

**Avoid Flushing your Medication 1**

- Medicines with high dosage when end up in the sanitation system, are very difficult to

isolate from the water system and would cause an adverse effect on people who would consume this water.

**Conservation of Water**

- Avoid excess unwanted usage of water. Some of the simple ways to prevent wastage of water include, to make use of water-saving apparatus, fixing leakage of taps and avoid washing utensils with running water.

**Waste management 1**

- Lots of solid waste is generated in the neighbourhood. Apart from household wastes, we also have medical, agricultural, mining and industrial wastes.
- The improper disposal of these wastes results in environmental pollution. Hence, care must be taken while disposing of these wastes to reduce the pollution levels in our surroundings.

**Collection and disposal of wastes 1**

- The domestic waste that is generated is collected into bins and transferred to the municipal workers who take it to the disposable site.
- At the site, the waste is sorted out and separated as biodegradable and non-biodegradable.
- **Recycling:** a large amount of disposed waste material can be reused by recycling the waste, thus it reduces the land fill and converts waste into useful forms

**9) Describe the environmental changes due to global warming?**

**Global warming 1.5**

- The phenomenon of a gradual increase in the temperature near the earth's surface. This phenomenon has been observed over the past one or two centuries. This change has disturbed the climatic pattern of the earth
- There are several causes of global warming, which have a negative effect on humans, plants and animals. These causes may be natural or might be the outcome of human activities

**Environmental changes 1**

- Rise in Temperature
- Global warming has led to an incredible increase in earth's temperature. Since 1880, the earth's temperature has increased by ~1 degrees. This has resulted in an increase in

the melting of glaciers, which have led to an increase in the sea level. This could have devastating effects on coastal regions.

**Threats to the Ecosystem** 1

- Global warming has affected the coral reefs that can lead to the loss of plant and animal lives. Increase in global temperatures has made the fragility of coral reefs even worse.

**Climate Change** 0.5

- Global warming has led to a change in climatic conditions. There are droughts at some places and floods at some. This climatic imbalance is the result of global warming.

**Spread of Diseases** 0.5

- Global warming leads to a change in the patterns of heat and humidity. This has led to the movement of mosquitoes that carry and spread diseases.

**High Mortality Rates** 0.5

- Due to an increase in floods, tsunamis and other natural calamities, the average death toll usually increases. Also, such events can bring about the spread of diseases that can hamper human life.

**Loss of Natural Habitat** 1

- A global shift in the climate leads to the loss of habitats of several plants and animals. In this case, the animals need to migrate from their natural habitat and many of them even become extinct. This is yet another major impact of global warming on biodiversity.

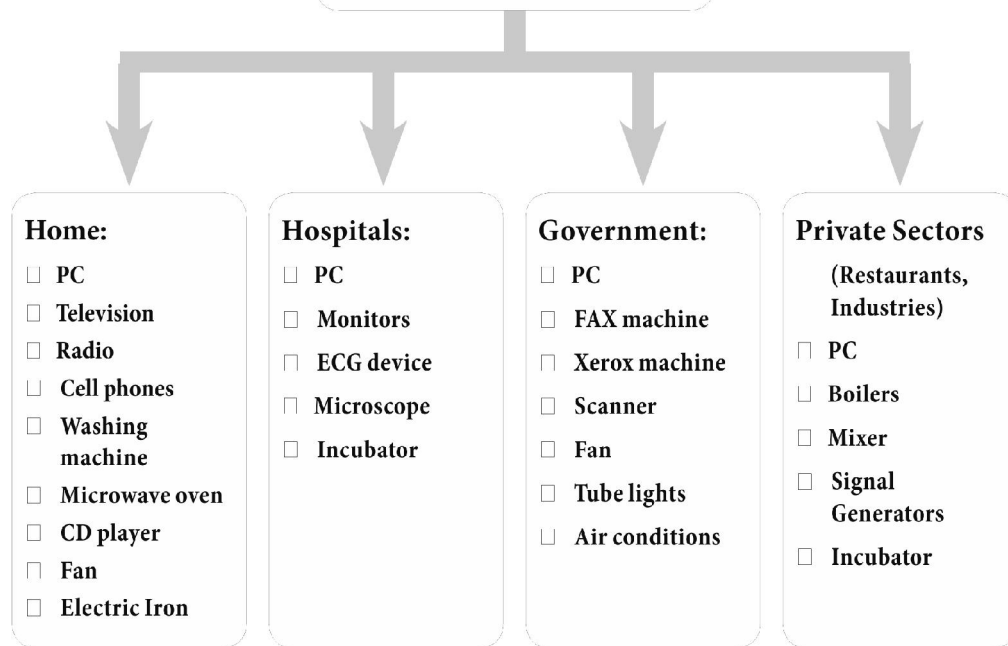
**10) List out the sources of E-waste?**

**e-Wastes** 2

- Electronic waste which is commonly referred as “e-waste” is the new by product of the Info Tech society. It is a physical waste in the form of old discarded, end of life electronics.
- It includes a broad and growing range of electronic devices from large household appliances such as refrigerators, air conditioners, cellular phones, computers and other electronic goods”.
- Similarly, e-waste can be defined as the result when consumer, business and household devices are disposed or sent for re-cycling (example, television, computers, audio-equipments, VCR, DVD, telephone, Fax, Xerox machines, wireless devices, video games, other household electronic equipments).

4

**Sources of E-Waste:**



**11) Write about the Diseases which are spread by Animals?**

- Zoonotic transmission can occur in any context in which there is companionistic (pets),

economic (farming, etc.), predatory (hunting, butchering or consuming wild game) or research contact with animals.

- **Contamination of food or water supply:** Eating or drinking contaminated food can cause various types of diseases in humans.
- **Direct contact:** While petting or touching animals, and bites or scratches.
- **Indirect contact:** Coming into contact with areas where animals live and roam.
- **Vector-borne:** Being bitten by a tick, or an insect, like a mosquito or a flea food-borne

**Swine Flu** 1

- Swine Flu first originated from pigs. It is caused by virus that affects pigs and has started infecting humans. The virus spreads through air. It affects the respiratory system.

**Kyasanur Forest Disease/Monkey Fever** 1

- Kyasanur Forest disease (KFD) is caused by Kyasanur Forest disease virus (KFDV), a member of the virus family *Flaviviridae*.
- KFDV was identified in 1957 when it was isolated from a sick monkey from the Kyasanur Forest in Karnataka (formerly Mysore) State. Since then, between 400-500 humans cases per year have been reported.
- Rodents, shrews, and monkeys are common hosts for KFDV after being bitten by an infected tick.

**COVID 19** 1

- Another example of a zoonotic disease is COVID-19, which broke out in China's Wuhan district in December 2019.
- It was declared a pandemic by WHO in March 2020 with total cases reaching nearly 8 lakh.
- COVID-19 is caused by the virus SARS-CoV2 which is believed to have started in Huanan Seafood Wholesale Market in Wuhan.

**SARS CoV - 2** 1

- Severe acute respiratory syndrome (SARS) emerged in 2002-2003 in southern China.
- SARS-CoV is thought to be an animal virus from an as-yet-uncertain animal reservoir, perhaps bats, that spread to other animals (civet cats) and first infected humans in the Guangdong province of southern China in 2002.
- An epidemic of SARS affected 26 countries and resulted in more than 8000 cases in 2003.

**MERS CoV** 1

- Middle-East respiratory syndrome (MERS) is a viral respiratory disease caused by a novel

coronavirus (Middle East respiratory syndrome coronavirus, or MERS CoV) that was first identified in Saudi Arabia in 2012.

- Current scientific evidence suggests that dromedary camels are a major reservoir host for MERS-CoV and an animal source of MERS infection in humans.

**Nipah** 1

- The classic example of emergence of zoonotic disease is the outbreak of Nipah in Kerala.
- The virus can be transmitted to humans from animals (bats and pigs), and can also be transmitted directly from human-to-human.
- Fruit bats of the Pteropodidae family are the natural host of Nipah virus

**12) What is meant by Immunization? And mention its importance in health sector.**

**Immunization** 3

- Immunization is a process of developing resistance to infections by administration of antigens or antibodies.
- Inoculation of vaccines into the body to prevent diseases is called as vaccination.
- One effective way of controlling the spread of infection is to strengthen the host defenses.
- This is accomplished by immunization, which is one of the cost effective weapon of modern medicine.
- When a large proportion of a community is immunized against a disease, the rest of the people in the community are benefited because the disease does not spread.

**Vaccines and its Types** 1.5

- Vaccines are preparation of living or killed microorganisms or their products used for prevention or treatment of diseases.
- Vaccines are of two types: Live vaccines and Killed vaccines

**Live Vaccines:**

- They are prepared from living organisms.
- The pathogen is weakened and administered.
- e.g. BCG vaccine, oral polio vaccine.

**Killed Vaccines:** 1.5

- Micro organisms (bacteria or virus) killed by heat or chemicals are called killed or inactivated vaccines.

- They require a primary dose followed by a subsequent booster dose.
- e.g. Typhoid vaccine, cholera vaccine, pertussis vaccine.

**13) Write a short note on Monkey Pox?****Monkey Pox****2**

- It is a rare viral infection similar to smallpox
- Monkey pox is a zoonosis, that is, a disease that is transmitted from infected animals to humans.

**Monkey pox virus****2**

- The monkey pox virus is an orthopoxvirus, which is a genus of viruses that also includes the variola virus, which causes smallpox, and vaccinia virus, which was used in the smallpox vaccine.
- Monkey pox continues to occur in a swathe of countries in Central and West Africa
- According to the World Health Organisation (WHO), two distinct clade are identified: the West African clade and the Congo Basin clade, also known as the Central African clade

**Transmission**

- Monkey pox is a zoonosis
- Monkey pox virus infection has been detected in squirrels, Gambian poached rats, dormice, and some species of monkeys.
- Human-to-human transmission is limited
- Transmission can be through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects

**Symptoms****1**

- Monkey pox begins with a fever, headache, muscle aches, back ache, and exhaustion.
- It also causes the lymph nodes to swell (lymphadenopathy), which smallpox does not.

**Treatment****1**

- There is no safe, proven treatment for monkeypox yet. The WHO recommends supportive treatment depending on the symptoms.

**14) Write a short note on Nipha Virus?**

- Nipah Virus is an airborne transmission infection and can affect those who come in direct contact with contaminated bodies such as pigs or bats carrying the virus.
- Infected bats shed the virus through excreta and secretions. Human-to-human transmission has also been documented.
- NiV is also capable of causing disease in pigs and other domestic animals.
- Direct contact with pigs is the prime mode of transmission of the virus in humans.

**Source of Nipah Virus****1**

- The virus was first identified in Kampung Sungai Nipah in Malaysia and in Singapore in 1998.
- At that time, it was primarily caused in pigs and through them got transferred to the humans.
- As quoted by the World Health Organisation, the natural hosts of the virus are fruit bats of the Pteropodidae Family, Pteropus genus.
- The Nipah Virus can survive in the bat's body without causing disease, allowing it to jump to susceptible mammals like humans or pigs when bats come in contact with them.
- Antibodies were found in the Indian Flying Fox during the Bangladesh outbreak.

**Symptoms of Nipah Virus Infection****2**

- Nipah Virus is usually associated with inflammation of the brain due to which several days of fever can often lead to a state of confusion, disorientation and even persistent drowsiness.
- Encephalitis may also emerge as an acute or late-onset and can be a fatal complication of NiV.
- Neurological, respiratory and pulmonary signs also emerge in an infected individual.
- Some common signs and symptoms of NiV are drowsiness, dizziness, nausea, fever, headache and mental issues such as confusion.

**Treatment for Nipah Virus****2**

- So far, no vaccine has been developed for curing the infection in both humans and



animals. The primary treatment for human cases is intensive supportive care and supportive medicines.

**Nipah Virus India** **1**

- The year 2001 saw the first outbreak of Nipah Virus in Siliguri, India followed by the 2007 outbreak in Nadia of West Bengal.
- The 2018 outbreak of Kerala was declared over soon after it was localized in Kozhikode and Malappuram districts of Kerala.
- In Kochi, another case was seen in June 2019

**15) What is Drug Abuse? What are the steps to rehabilitate person from drug abuse?**

**Drug Abuse** **2**

- Drugs are normally used for the treatment of disease on advice of a physician and withdrawn after recovery.
- A person who is habituated to a drug due to its prolonged use is called drug addict.
- This is called drug addiction or drug abuse.
- A drug that modifies the physical, biological, psychological or social behaviour of a person by stimulating, depressing or disturbing the functions of the body and the mind is called addictive drug.
- These drugs interact with the central nervous system and affect the individual physically and mentally.

**Types of Drugs** **1**

- There are certain drugs called psychotropic drugs which acts on the brain and alter the behaviour, consciousness, power of thinking and perception.
- They are referred as mood altering drugs.

**Drug Dependence** **1**

- Persons who consume these drugs become fully dependent on them, they cannot live without drugs.
- This condition is referred as drug dependence.

**Physical and mental dependence**

- Dependence on the drug for normal condition of well being and to maintain physiological state.

- Psychological dependence is a feel that drugs help them to reduce stress.

**Behavioural Changes of Drug Users** **1**

- Drop in academic performance, absence from school or college.
- Lack of interest in personal hygiene, isolation, depression, fatigue and aggressive behaviour.
- Deteriorating relationship with family and friends.
- Change in food and sleeping habits.
- Fluctuation in body weight and appetite
- Always looking out for an easy way to get money for obtaining drugs.
- Prone to infections like AIDS and Hepatitis-B.

**Drug De-addiction** **1**

- Management of de-addiction is a complicated and difficult task.
- The path to recovery of drug addicts is long and often slow. Family members, friends and society on the whole have a very important role to play.

**Detoxification**

- The first phase of treatment is detoxification. The drug is stopped gradually and the addict is helped to overcome the withdrawal symptoms.
- The addict undergoes severe physical and emotional disturbance. This is taken care by specific medication.

**Psychotherapy** **1**

- Individual and group counselling is given by psychologists and counsellors. The treatment includes efforts to reduce the addict's stress, taught new ways to solve everyday's problems, adequate diet, rest and relaxation.

**Counselling to family members** **1**

- Social workers counsel family members in order to change the attitude of rejection so that the addict is accepted by the family and the society.

**Rehabilitation**

- They are given proper vocational training so that they can lead a healthy life and become useful members of the society.

16) Mention the difference between ODF, ODF+, and ODF++.

6

	Elimination of OD practices	Access of Toilets	Convergence and treatment of faecal waste
<b>ODF city</b>	Not a single person defecating in the open No traces of faeces are visible in the city at any time of the day	All the properties in the city have access to either own toilet (or) functional community / public toilet. Floating population in the city has an access to sufficient and functional public toilets	All toilets are connected to a disposal system.
<b>ODF+ city</b>	Not a single person found defecating in the open. No traces of faeces are visible in the city at any time of the day.	At least 80% residential properties in the city have access to own toilets. Remaining properties and floating population in the city have access to functional community / public toilets. disposal system	All toilets are connected to a Regular and safe collection conveyance and treatment of all the faecal matter.
<b>ODF++ city</b>	Not a single person found defecating in the open. No traces of faeces are visible in the city at any time of the day.	Atleast 95% residential properties in the city have access to own toilets. Remaining properties and floating population in the city have access to functional community / public toilets.	All toilets are connected to safe disposal system. Regular safe collection, convergence and treatment of all faecal matter and waste water including septic tank efficient and grey water.

17) Explain the progress made in Health Sector of TamilNadu with respect to the research and development?

**Progress mode of tamil nadu** 1

- Tamil Nadu is often ranked the best among the high-performing states in India, next only to Kerala in terms of various health indicators
- The state is renowned for its low mortality rates in addition to the effective healthcare infrastructure and health manpower.
- Tamil Nadu has led the way in various new approaches to enhance the access to good-quality health services at an affordable cost.
- Tamil Nadu is the only state with a distinctive public health cadre in the district level.
- It was also the first state to enact a Public Health Act in 1939.
- During later part of 1980s and 1990s, there was a significant transformation in health infrastructure and health manpower of the state.

**Multi purpose workers** 1

- The Government of Tamil Nadu implemented the Multipurpose Workers scheme intensively when it was launched by the Central government in the fifth 5-year plan to serve every rural community with a population of 5000 with a multipurpose worker.
- These multipurpose health workers in Tamil Nadu were females in majority as the existing maternity assistants were absorbed and were labelled as village health nurses (VHNs)
- The role of VHN was to make regular house visits and deliver maternal and child care services including advice for contraception and immunization.

**TamilNadu various schemes** 2

- In 1996/1997, Government of Tamil Nadu decided to provide round the clock services in the primary health centers to offer outpatient services in the evening hours.

- Also, Tamil Nadu included the practice of indigenous system of medicine in its health care service at a very early stage.
- By 2005, there was organized and adequate public health infrastructure and health manpower in Tamil Nadu which reflected in the health indicators of the state.
- The state ranked first in the country in terms of number of children immunized.
- In 2003, the Government of Tamil Nadu developed a health policy to address the key health challenges, strengthen management of health systems, and increase the effectiveness of public sector health care services and also to combat non-communicable diseases and accidents.
- In 2005, the World Bank approved the Tamil Nadu Health Systems Project and even today the project performs proficiently in the state.
- Tamil Nadu medical services Corporation (TNMSC) in 1995, an autonomous body regulating the drug procurement and distribution alongside promoting the rational use of generic drugs at an affordable cost.

**Organ Donation Scheme**

1

- In 2008, the Government of Tamil Nadu put together systems and procedures to introduce a Post Death Organ Donation Scheme.
- In the last two years, 1,150 organs such as kidney, liver, heart, lung, pancreas and intestine have been donated.
- An important reason for the success of the organ donation program is the improved transport facility known as the 'Green Corridor'.

**Medical Tourism**

1

- Today tamil nadu is considered as one of the medical tourism centers of the india.
- People are coming from all over the world to get world-class treatment at low cost in TAMIL NADU.

**18) Explain in detail about hardware and software of the computer technology?**

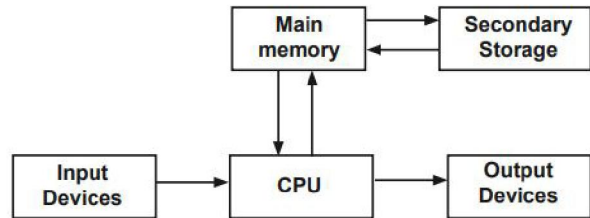
- A computer system has two major components, hardware and software.
- In practice, the term hardware refers to all the physical items associated with a computer system. Software is a set of

instructions, which enables the hardware to perform a specific task.

**Computer Hardware**

3

- A computer is a machine that can be programmed to accept data (input), and process it into useful information (output). It also stores data for later reuse (storage).
- The processing is performed by the hardware. The computer hardware responsible for computing are mainly classified as follows:

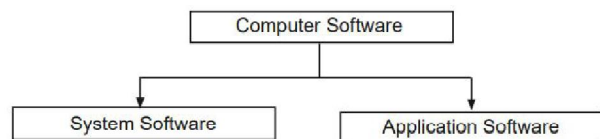


- The common input devices are keyboard, mouse and scanners.
- The Processor, more formally known as the central processing unit (CPU), has the electronic circuitry that manipulates input data into the information as required.
- Output devices are normally a monitor and printers.
- The hardware devices attached to the computer are called peripheral equipment.
- Peripheral equipment includes all input, output and secondary storage devices.

**Computer Software**

3

- Software refers to a program that makes the computer to do something meaningful.
- It is the planned, step-by-step instructions required to turn data into information.
- Software can be classified into two categories: System Software and Application Software.



- System software consists of general programs written for a computer.
- The most important type of system software is the operating system.

**Unit - 2**

1) Explain about the aims and objectives of International Union of Conservation of nature and natural resources and also explain the position of India in this regard.

**IUCN (International Union for Conservation of Nature and Natural Resources) 12**

- IUCN is an international organization working in the field of nature conservation of flora and fauna.
- Established year : 1948

**Aim of IUCN**

- To influence, encourage, assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable & ecological sustainable.

**Objectives of IUCN**

- To offer scientific information about the status of species & subspecies on a worldwide scale.
- To address issues and raise awareness about extinction of species and biodiversities.
- To design a layout for biodiversity preservation

**Position of India in this regard**

- India became the member country of IUCN in 1969.

**Critically endangered species in India**

- A total of 199 species are critically endangered.
- Critically endangered means externally high risk of extinction in the world.

**Vulture species in IUCN Red list**

- 4 out of a vulture species have been listed as CE.
- 3 of 4 are seen in sigur while remaining are Egyptian vultures,

**IUCN Red list species in TamilNadu**

- Nilgiri Tahr – Endangered
- Rameshwaram parachute spider – critically endangered.
- There has been 50% rise in India , adequates measure are needed to be taken.

2) What are the measures taken by India in conservation of biodiversity?

**Conservation of Biodiversity 2**

- Biodiversity is defined as a community of all living organisms on earth and the diversity among them from all the ecosystems.

**Conservation of biodiversity in India 2**

- India is one among IT mega diverse countries in the world.

**Steps taken by Indian government 2**

**1. Project Tiger**

- Launched : 1973
- Aim : Protecting the key species and all habitats.

**2. Crocodile conservation 1**

- Launched : 1975-Aim : To prevent porching of crocodile for skin and to create breeding centers.

**3. Project elephant**

- Launched : 1992
- Aim : To ensure long time survival of viable population of elephants.

**4. Orissa – Olive Ridley turtles 2**

- Aim : To protect turtles from travelers fishing.

**5. Polices related to Biodiversity**

- National forest police-National biodiversity Action plan (2009)
- National Environmental Policy (2006)

**Acts passed by Indian Government 3**

1. Fisheries Act, 1887.
  2. Indian Forest Act, 1927
  3. Wildlife Protection Act, 1972
  4. Water Act, 1974
  5. Forest Conservation Act, 1980
  6. Environmental Protection Act, 1986
  7. Biological diversity Act, 2002
  8. Scheduled Tribes and other traditional forest dwellers Act (Recognition of Rights), 2006
- Thus these are the measures taken by Indian Government to conserve biodiversity.

3) Explain Sources of E- wastes and its impact on the environment and also explain the specific waste management methods cab be adopted for each sources?

**E-wastes 2**

- E – waste or electronic waste is any electrical or electronic equipment that has been discarded

**Sources of E-wastes 3**

- Divided into 21 types under 2 based categories
- IT & Communication equipment

- Consumer electrical & electronics
- IT & Communication equipment
- Cellphones
- Desktop
- Laptops
- Circuit boards
- Hard drives
- Monitors
- Consume electrical & Electronics
- Microwaves
- Heaters
- Remote sensing
- Smart lights
- TV- Treadmills

**Impact of E-wastes on environment 3**

- Improper disposal – serious threat to public health
- Affects soil & land
- Contamination of air
- Pollutes water
- Affects human health

**Waste Management methods 4**

- Land filling
- Excavation of trenches
- Buying e-waste in puts
- Covering pits by sand
- Incineration
- Controlled combustion
- Burned in incinerator unit
- 900°C – 10000°C
- Reduces intensity of hazardous matter

**Recycling**

- Dismantling & removing hazardous substances
- Segregation of non – ferrous materials
- Recycled for use

**Conclusion**

- Government should leverage & setup more innovative & cost effective waste management methods to ensure safety & sustainability of India.

**4) Explain in detail about solid waste management?**

**Solid Waste Management 1.5**

- The term solid waste management refers to complete process of collecting, treating & disposing of solid wastes

**Sources of Solid wastes 1.5**

- Solid domestic garbage
- Solid waste material from various industries
- Solid agricultural waste
- Plastics, glass, metals, e-waste etc-Medical waste
- Construction waste, sewage sludge

**Disposal of waste 2**

- The process of disposal varies with sources, The two types of disposal are

1. Municipal solid waste
2. Hazardous solid waste

**Municipal solid waste 1**

- Municipal solid waste can be further divided into

1. Bio degradable
2. Recyclable
3. Hazardous domestic waste

**Hazardous solid waste 1**

- Hazardous solid waste need special disposal mechanism

1. Industrial waste
2. Medical waste from hospitals are few examples.

**Effect of poor solid waste management 2**

- Heaping of wastes
- Breeding ground for diseases causing micro organisms
- Land pollution
- Pollute ground water
- Release of poisonous gases when solid wastes are burned.

**Solid waste management in India 3**

- Due to lack of funds & know how majority solid wastes are picked up by Informal waste collector.
- Informal waste economy employs 0.5% to 2% urban population worldwide.

**Initiatives by GoI**

1. Solid waste management rules, 2016.
  2. Waste to wealth portal
  3. Swachh Bharat Mission (Urban) 2.0
  4. National Water Mission
- Thus Government should establish partnership with waste pickers & treat waste as economic opportunity to make “Clean India”.

5) The National Capital Territory is highly polluted by Air Pollution. In this context, explain the causes of Delhi Air Pollution and bring out the measures to be taken to control air pollution at Delhi.

- Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. – WHO.
- India ranks at the bottom of all countries in 2022 (Environment Performance Index) 2

**Causes of Delhi Air pollution** 5

**1. Increasing population**

- Increased population & related developmental activities at the cost of environmental change.

**2. Poor dust control**

- Dust pollution is one of major problems which Delhi ehokas every year.

**3. Poor Waste management**

- Sewage is openly left on the streets, which mixes with loose dust & turns into sludge.

**4. Garbage & Biomass burning**

- Pollutants, such as PM 2.5, are spread rapidly as a result of burning.
- Frequent burning is sun at landfill sites of Delhi.

**5. Vehicular pollution**

- The DCT bus flat in going down carry year & an increasing number of people are using cars,

**6. No audit of waste segregation & solid waste management**

- Waste segregation to separate biodegradable & Non biodegradable waste in still non – starter

**7. Lack of funding of municipal bodies**

- Municipal bodies are devoid of funds to check pollution & spend much on pollution control measures.

**Measures to be taken to control Delhi Air pollution**

**1. Use bicycles** 5

- Mark out bicycle in residential colonies.

**2. Public transport**

- Encourage use of public transport by supporting the metro, overhead rail & bus services.

**3. More CNG vehicles**

- Encourage use of CNG in motor vehicles as it is a much cleaner fuel than petrol.

**4. Burning waste should be made punishable offense**

- Burning of leaves, old tyres is open should be made a punishable offence in NCR with the fine of Rs,10,000 per incident.

**5. Solar power**

- Installation of solar panels should be encouraged at homes

**6. Power backups**

- Invoters should not be encouraged for backup supply & diesel generator fill AQL level reaches beow 200.

**7. Winter Action plan**

- The government made 15 point Delhi winter plan to address Delhi pollution

**8. Construction & demolition (C&D) Waste management rules**

- Segregation of waste made mandatory
- The above measures should be adopted to attain the safe which of Air quality index which is less than 100 AQI.

6) Explain about India's various Ramsar Sites?

**Introduction** 2

- "Wetland site which has been listed under the Ramsar convention that aims to conserve it & promote sustainable use of its natural resource is called Ramsar Sites.
- There are currently 2400 Ramsar sites across the world.
- 75 Ramsar sites in India in 75<sup>th</sup> year of independence.

**Ramsar Sites in India** 1

- Ramsar convention entered into force in India on 1 Feb 1992, which is treaty on wetlands.
- Sundarbans largest Ramsar sites in India
- Chilika Lake (Orissa) & Keoladeo National park first Ramsar sites in India

**India's Ramsar Sites** 7

**1. Pichavaram Mangrove (TamilNadu)**

- One of largest Mangrove forest in the country.
- Includes forest & swamp forest habitats.
- Several endangered species olive turtle are found.

**2. Koothankulam Bird Sanctuary (TamilNadu)**

- Important bird & biodiversity area on Central Asian flyway
- Largest reserve for breeding water birds in South India.

**3. Gulf of Mannar Marine Biosphere**

- One of Biologically coastal regions
- Store ore of Marine diversity of global significance

**4. Sakhya Saar (Madhya Pradesh)**

- Created from Manier riverm located near Madhav park

**5. Thane park (Maharashtra)**

- Mangrove forest – Protects from storms, tidals, saltwater seepage
- Nursery for variety of fish

**6. Vellode Bird Sanctuary (TamilNadu)**

- It is located in Erode district
- Human made tank is ideal habitat for birds

**7. Vedanthangal Bird Sanctuary (TamilNadu)**

- 30 hectare protected area located in Chengalpattu districts
- Home of Migratory birds such as grey wagtail, blue winged tail.

**8. Vaduvloor Bird Sanctuary (TamilNadu)**

- Large human made irrigation tank & shelter for migratory birds.

**Significance**

2

- Assist in fighting against climate change
- Paradise for migratory birds
- Cultural & Tourism importance

**7) Discuss about the structure and working of E-mail and write about its advantages and disadvantages.**

**Working of E-Mail:**

4

- Electronic Mail (email or e-mail) is a method of exchanging messages between people using electronic devices.
- Email first entered limited use in the 1960s and by the middle of 1970s had taken the form now recognized as email.
- Email operates across computer networks, which is primarily called as Internet.
- Earlier email systems required the sender and the recipient to both be online at the same time, in common with instant messaging.

- Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver, and store messages.
- The structure of the E-mail address is username@domain name
- An example of E-mail address is raman@gmail.com
- An E-mail address consists of two parts separated by @ symbol.
- The first part Raman is the user name that identifies the address and the second part gmail.com is the domain name of the E-mail server.

**Functions of E-mail on internet**

- To send Internet e-mail, requires an Internet connection and access to a mail server.
- The standard protocol used for sending Internet e-mail is called SMTP (Simple Mail Transfer Protocol).
- The SMTP protocol is used to both send and receive email messages over the Internet.
- When a message is sent, the email client sends the message to the SMTP server. If the recipient of the email is local the message is kept on the server for accessing by the POP, IMAP or other mail services for later retrieval.- If the recipient is remote (i.e. at another domain), the SMTP server communicates with a Domain Name Server (DNS) to find the corresponding IP address for the domain being sent to.
- Once the IP address has been resolved, the SMTP server connects with the remote SMTP server and the mail is delivered to this server for handling.
- If the SMTP server sending the mail is unable to connect with the remote SMTP server, then the message goes into a queue.
- Messages in this queue will be retried periodically. If the message is still undelivered after a certain amount of time (30 hours by default), the message will be returned to the sender as undelivered.

**Structure of an Email message:**

4

- To: This field consists of the address to whom the message has to be sent. This is mandatory.
- CC: Short for carbon copy. This is optional. The people who were mailed copies of the message. The recipients of the message will know to whom all the copies have been sent.

- BCC : Its stands for Black Carbon Copy. It is used when we do not want one or more of the recipients to know that someone else was copied on the message. This is optional.
- Subject : The Subject field indicates the purpose of e-mail.
- Attachment: Attachment contains files that you are sending, linked documents, pictures, etc. along with an e-mail.
- Body: The email body is the main part of an email message. It contains the message's text, images and other data (such as attachments).
- The email's body is distinct from its header, which contains control information and data about the message (such as its sender, the recipient and the path an email took to reach its destination).
- Signature: Name of the sender

**Advantages and Disadvantages of Email:****Advantages:****2**

- Reliable: Because it notifies the sender if not delivered.
- Speed: E-mail is very fast delivered in fraction of seconds.
- Inexpensive: Its very cheap.
- Waste Reduction: Helps in paperless communication thus eco-friendly.

**Disadvantages:****2**

- **Forgery:** Anyone who hacks the password of the sender can send a message to anyone.
- **Overload:** Because it is cheap loads and loads of messages keeps coming.
- **Junk:** Junk emails are not intended mails and is inappropriate also. Junk emails are sometimes referred to as spam.

**8) Elaborate the initiatives taken in by government against the Cyber Crime.****Laws against Cyber crimes in India****2**

- Ever since the introduction of cyber laws in India, the Information Technology Act (IT Act) 2000 covers different types of crimes under cyber law in India.

**Types of cybercrimes****2**

- Identity theft – Identity theft is defined as theft of personnel information of an individual to avail financial services or steal the financial assets themselves.

- Cyberterrorism – Cyberterrorism is committed with the purpose of causing grievous harm or extortion of any kind subjected towards a person, groups of individuals, or governments.

- Cyberbullying – Cyberbullying is the act of intimidating, harassment, defaming, or any other form of mental degradation through the use of electronic means or modes such as social media.

- Hacking – Access of information through fraudulent or unethical means is known as hacking. This is the most common form of cybercrime know to the general public.

- Defamation – While every individual has his or her right to speech on internet platforms as well, but if their statements cross a line and harm the reputation of any individual or organization, then they can be charged with the Defamation Law.

- Trade Secrets – Internet organization spends a lot of their time and money in developing software, applications, and tools and rely on Cyber Laws to protect their data and trade secrets against theft; doing which is a punishable offense.

- Freedom of Speech – When it comes to the internet, there is a very thin line between freedom of speech and being a cyber-offender.

- As freedom of speech enables individuals to speak their mind, cyber law refrains obscenity and crassness over the web.

- Harassment and Stalking – Harassment and stalking are prohibited over internet platforms as well. Cyber laws protect the victims and prosecute the offender against this offense.

- IT Act, 2000 went through amendments under the Indian Penal Code in the year 2008. These were made in light of the laws on cybercrime – IT Act, 2000 by way of the IT Act, 2008. They were enforced at the beginning of 2009 to strengthen the cyber security laws.

**National Cyber Crime Reporting Portal of India****4**

- This portal is an initiative of the Government of India to facilitate victims/ complainants to report cybercrime complaints online.

- This portal caters for all types of cybercrime complaints including complaints pertaining to



- online Child Pornography (CP),
- Child Sexual Abuse Material (CSAM),
- sexually explicit content such as Rape/Gang Rape (CP/RGR) content and
- other cybercrimes such as mobile crimes, online and social media crimes, online financial frauds, ransomware, hacking, cryptocurrency crimes and online cyber trafficking.
- The portal also provides an option of reporting an anonymous complaint about reporting online Child Pornography (CP) or sexually explicit content such as Rape/Gang Rape (RGR) content.

**Cybercrime Helpline Number 4**

- The Cyber Crime Helpline Number is 155260.
- Indian Computer Emergency Response Team (CERT-IN or ICERT)
- The Indian Computer Emergency Response Team (CERT-IN or ICERT) is an office within the Ministry of Electronics and Information Technology of the Government of India.
- CERT-In is the national nodal agency for responding to computer security incidents as and when they occur. CERT-In is operational since January 2004.
- CERT-In has been designated to serve as the national agency to perform the following functions in the area of cyber security:
- Collection, analysis and dissemination of information on cyber incidents.
- Forecast and alerts of cyber security incidents.
- Emergency measures for handling cyber security incidents.
- Coordination of cyber incident response activities.
- Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents.
- Such other functions relating to cyber security may be prescribed.
- CERT-IN has overlapping responsibilities with other agencies such as National Critical Information Infrastructure Protection Centre (NCIIIPC).

**9) Classify Communicable and Non-Communicable Diseases with suitable examples**

**Communicable Diseases 2**

**Definition**

- These are the disease that are caused by infectious agents-It can be transmitted from infected person to other people, animal or other source in environment.
- Other name : Infectious disease

**Progression 1**

- These are more likely to be acute (appear quickly)

**Causes**

- Pathogenic microorganism are the primary cause

**Inherited 1**

- Cannot be inherited from one generation to other.

**Agent / Vector**

- Viruses, fungi, bacteria etc

**Examples 2**

1. Typhoid
2. Cholera
3. Malaria
4. TB
5. Leprosy etc

**Non communicable disease 2**

**Definition**

- These disease that are not transferred from an infected person to another
- Caused by improper life style and eating habits
- Other name : Chronic disease

**Progression 1**

- Mare likely to be chronic
- Last for a longer period of time & progress gradually

**Causes**

- Nutritional deficiency
- Hormonal deficiency-Abnormal proliferation of cells

**Inherited 1**

- Might be inherited from one generation to another

**Agent / Vector**

- They primarily depend on the personal diet, allergy or physical activities.

**Examples** **2**

1. Cancer
2. Diabetes
3. Alzheimer's disease
4. Down's syndrome
5. Kwashiorker
6. Heart disease etc

**10) "TamilNadu move towards the elimination of Malaria"— Examine the statement.****Malaria** **2**

- Plasmodium infection-A disease caused by a plasmodium parasite, transmitted by the bite of infected mosquitoes

**Current malaria status of TamilNadu** **2**

- 2016 - 4341 cases
- 2020 – 891 cases
- 1990 – 1.20 lakh cases
- 2021 – 772 cases

**TN move towards the elimination of malaria** **4**

- TN is moving towards the malaria elimination phase
- National centre for vector Borne Disease control, under union health minister, awarded a certificate to the state in recognition of its performance in malaria elimination & its progress from category II (The pre-elimination phase) to category I (the elimination phase) during 2015–2021-India – target – malaria elimination – 2030- TN – target – Malaria elimination – 2024
- Out of 38 districts 31 has zero indigenous cases
- Focus area : (early picking up of case)
  1. Extensive tracing of contacts
  2. Active screening in the community
  3. Passive screening at out patient departments for all fever cases
  4. Regular and complete treatment to prevent relapse.

**Laboratory facilities** **2**

- The state has put laboratory facilities for detection of malaria at government
  1. Primary health centres
  2. Hospitals

**Door – to door visit****2**

- Health inspectors make door – to – door visit in villages and cities to identify persons having fever and collect sample.
- Mosquito control measures will be taken like residual spray in potential area.

**11) What are Seasonal Diseases? How do they occur? Explain the measures taken by the Government of TamilNadu to control them.****Seasonal diseases**

- Seasonal disease arise due to the change in the environment conditions during different seasons

**Examples** **2**

1. Measles
2. Chicken pox
3. Cholera
4. Malaria
5. Typhoid
6. Viral fever
7. Diphtheria
8. Faecal – Oral infection
9. Rota virus
10. Influenza
11. Chikungunya
12. Diarrhea etc

**Season disease occur during** **2**

- Monsoon season
- Winter season
- During monsoon our immune system is weakened, this results in many water – borne disease

**Types of seasonal disease** **2**

- Cold & Flu : The drastic fluctuation of temperature which happens during rainy season.
- The body susceptible to bacterial & viral attack

**Mosquito borne diseases** **2**

- Malaria : When rain, water remains it helps the mosquitoes breeding process – causes malaria-Dengue : It is a type of fever can be very painful & life threatening-Cholera : Water borne infection
- Bacterial disease (Vibrio cholera)

**Measures taken by Government of TamilNadu to control seasonal disease** 1

- Dengue treatment – Govt provide & other waterborne “Nilavembu Kudineer”

**Environmental Management Steps** 2

- Identification and destruction of mosquito breeding source in rural & urban area-Door – to – door checkup
- Health inspection – regulate sanitizing collect samples of person affected-Residual spray in potential areas

**Health checkup & precaution steps** 1

- Providing tablets, Nilavembu Kudineer to schools & public places of TN.

**12) “Auto immunity is a misdirected Immune Response”. Justify**

**Immune System (Reaction)** 2

- Normally immune system does not react to self antigen due to protective mechanism of self tolerance
- However, if there is a failure, then immune system reacts and produces an inappropriate response to self antigen.

**Misdirected immune response**

- In a normal immune response, the body sends antibodies and white blood cells to destroy harmful viruses & bacteria

**Misdirected response** 2

- Immune response mistakenly attack its own healthy tissue and organs
- Auto immune disease is misdirected immune response

**Auto immunity is due to abnormal immune response** 6

- Immune system fails to properly distinguish between self and non – self and attacks its own body cells.
- Our body produces antibodies (auto antibodies) and Cytotoxic T –cells that destroy our own tissues.
- If a disease results auto immune response it is known as auto immune disease.
- Thus auto immunity is a misdirected immune response
- Auto immunity is evidence by the presence of auto antibodies & T – cells that are reactive with host antigens.

- Auto antigen : When the cell act as antigen in the same body (against good cell) they are referred as autoantigen.

**Unit - 3**

**1) Explain the reason for the backlog in TB control in India and also explain the challenges and initiatives to eradicate TB?**

- Tuberculosis (TB) infectious airborne bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs but can also damage other parts of the body.

**Data:** 3

- According to WHO’s 2018 Global TB Report, India accounted for 27% of the total new TB infections in 2017, the highest in the world.

**Reasons for failure of TB control in India:** 5

- 1. Poverty:** A majority of TB patients in India get affected due to undernourishment. Poverty impacts their accessibility to food and ability to get treated.
  - It is still a big problem in India associated with problems of undernourishment and poor and unhygienic living conditions.
- 2. Underreporting:** One of the major factors of TB prevalence in India is under-reporting of TB cases. This leaves the risk of spread of TB to other healthy individuals. Inaccurate estimates of the tuberculosis burden in India between 2000-2015, has led the World Health Organisation (WHO) to seriously underestimate the TB epidemic. The Global TB Report 2016, stated that India had reported only 56% of TB burden in 2014 and 59% in 2015.
- 3. Wrong Diagnosis:** The doctors in India are less and untrained quacks most of the time misdiagnose the disease. Further, important diagnostics infrastructure that identify individuals at highest risk of progression to disease are not adequate.
- 4. Treatment:** Inequitable access to quality diagnosis and treatment remains a major issue in combating tuberculosis. Further, the private sector which contributes a major part of TB care is fragmented, made up of diverse types of healthcare providers, and largely unregulated.
- 5. Drug resistance to TB:** Standard TB treatment is not followed uniformly across the private sector, resulting in the rise of drug resistance. Patients on getting treated for symptoms do

not follow the complete treatment dosage and regimen. Due to lack of consistent follow-up of treatment regimens, situation often turn into Multi-drug resistance TB and Extreme-drug resistance TB.

6. **Outdated Drugs:** The drugs used to treat TB, especially multi drug-resistant TB are decades old. It is only recently that Bedaquiline and Delamanid (drugs to treat MDR-TB) has been made available. Further, access to such drugs remain low.
7. **Social Stigma:** Patients often hesitate to seek treatment or deny their condition altogether for fear of social discrimination and stigmatisation. Many other issues like human resource shortage, payment delays, procurement delays and drug stock-outs add to TB prevalence.

**Challenges faced :** 4

1. **Lack of reporting:** Awareness of the symptoms are less and people due to the fear of stigma and ostracisation under report TB Poor outcomes in reporting of treatment. In 2016, the 22 percent had not been reported. Nikshaya online portal get less report due to various misconception
2. **Poor Implementation :** No consistent follow up treatment regimens resulting in cases of relapse and MDR& XDR.
3. Poor coverage to vulnerable sections
4. Under nutrition especially in children in India
5. No regular National level survey
6. There is no development of new methods and technology to detect the different modes of disease.
7. Five factors- HIV/AIDS, Diabetes, smoking, undernutrition and Alcohol are the leading causes for TB.

**Solution:** 3

1. Strengthening Awareness and Reporting mechanism.
2. Linking it with UNAIDS 90:90:90 programme, since TB is equally epidemic.
3. Adopting Millets in PDS system which will address the malnutrition aspect as well will aid in increasing income of the farmers.
4. Strengthening Primary Health Care centres in identifying and diagnosing TB.
5. Need of new vaccines, and new drugs and shorter drug regimens

6. Govt should take initiatives for the Nutrition need of the society like POSHAN Scheme.

2) **What is Tobacco abuse? Write about the Hazards and effects of tobacco and prevention method?**

**Tobacco Abuse** 3

- Tobacco is obtained from the tobacco plant *Nicotiana tabacum* and *Nicotiana rustica*. The dried and cured leaves of its young branches make the commercial tobacco used worldwide.
- Addiction to tobacco is due to 'nicotine' an alkaloid present in it. Nicotine is a stimulant, highly harmful and poisonous substance.

**Tobacco Use** 2

- Tobacco is used for smoking, chewing and snuffing. Inhaling tobacco smoke from cigars, cigarettes, bidis, pipes, hukka is called smoking.
- Tobacco in powder form is chewed with pan. When powdered tobacco is taken through nose, it is called snuffing.

**Smoking Hazards and Effects of Tobacco** 7

- Benzopyrene and polycyclic hydrocarbons present in tobacco smoke is carcinogenic causing lung cancer.
- Causes inflammation of throat and bronchi leading to conditions like bronchitis and pulmonary tuberculosis.
- Inflammation of lung alveoli, decrease surface area for gas exchange and cause emphysema.
- Carbon monoxide of tobacco smoke binds to haemoglobin of RBC and decreases its oxygen carrying capacity causing hypoxia in body tissues.
- Increased blood pressure caused by smoking leads to increased risk of heart disease.
- Causes increased gastric secretion which leads to gastric and duodenal ulcers.
- Tobacco chewing causes oral cancer (mouth cancer).

**Prevention of Smoking** 3

- Knowing the dangers of smoking and chewing tobacco adolescents and the old people need to avoid these habits.
- Proper counselling and medical assistance can help an addict to give up the habit of smoking.

3) Explain about Alcohol Abuse? What are the harmful effects of alcohol to health? And what are the Rehabilitation measures of Alcoholics?

**Alcohol Abuse** **3**

- The consumption of alcohol is a social evil practiced by the wealthier and poorer sections of the society.
- The dependence of alcohol is called alcoholism and the addict is termed as alcoholic. It is called alcohol abuse.
- Drinking of alcohol impairs one's physical, physiological and psychological functions.

**Harmful Effects of Alcohol to Health** **6**

- Nerve cell damage resulting in various mental and physical disturbances
- Lack of co-ordination of body organs
- Blurred or reduced vision, results in road accidents
- Dilation of blood vessels which may affect functioning of the heart
- Liver damage resulting in fatty liver which leads to cirrhosis and formation of fibrous tissues
- Body loses its control and consciousness eventually leading to health complications and ultimately to death.

**Rehabilitation Measures for Alcoholics Education and counselling** **6**

- Education and proper counselling will help the alcoholics to overcome their problems and stress, to accept failures in their life.

**Physical activity**

- Individuals undergoing rehabilitation should be channelized into healthy activities like reading, music, sports, yoga and meditation.

**Seeking help from parents and peer groups**

- When a problematic situation occurs, the affected individuals should seek help and guidance from parents and peers. This would help them to share their feeling of anxiety, wrong doing and get rid of the habit.

**Medical assistance**

- Individual should seek help from psychologists and psychiatrists to get relieved from this condition and to lead a relaxed and peaceful life.
- Alcohol de-addiction and rehabilitation programmes are helpful to the individual so that they could get rid of the problem

completely and can lead a normal and healthy life.

4) Write an essay about Personal Hygiene and Community Hygiene?

**Hygiene** **5**

- Hygiene is defined as the practice of keeping yourself and your surroundings clean, in order to prevent illness or the spread of diseases.
- Health refers to a state of a sound mind and body free from any sickness or ailment, stress and problems. In simple words, health refers to the physical, emotional and psychological wellbeing of a person.
- To maintain good health, you should follow good hygiene, eat nutritious food, do exercise, take rest and have a sound sleep.
- Hygiene refers to the good habits and their practices which are followed to prevent diseases, maintain good health, especially through cleanliness, consumption of safe drinking water and proper disposal of sewage.
- It refers to all those activities that are done for improving and maintaining good health and sound mind.
- To protect us from diseases it is essential to maintain good health by taking regular bath, cleaning the clothes and surroundings and also avoiding unhygienic food consumption

**Personal hygiene** **5**

- Personal hygiene is defined as the branch of health which is concerned with the individual's adjustment to the physiological needs of the body and mind for the attainment of the maximum level of health. It also refers to the cleaning and grooming of the body.

**Community Hygiene** **5**

- A community is formed by a group of people living together in a particular area.
- If the people in a community wish to lead a healthy life, they should maintain basic community hygiene. It can be done by adopting the following measures.
- It can be done by adopting the following measures.
- The surroundings should be kept clean.
- Drains should be covered properly.- U s e d water from houses should not be let out into open drains or open areas.

5) What is SUP that was in news recently? List the concerns associated with SUP and state the measures to be taken to phase out SUP.

**A. SUP** **3**

- SUP means Single Use Plastic.
- The Centre has banned the use of 'single-use-plastic' from July 1 and now defined a list of single-use plastic items that will be banned from this date.
- As the name suggests, it refers to plastic items that are used once and discarded.
- E.g., plastics used in packaging of items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

**B. Concerns associated with SUP** **4**

- As per the Minderoo Foundation report (2021) single-use plastics account for a third of all plastic produced globally, with 98% manufactured from fossil fuels.
- India features in the top 100 countries of single-use plastic waste generation – at rank 94 (the top three being Singapore, Australia and Oman).
- India's domestic production of SUP is 8 million metric tonnes annually, and its import of 2.9 MMT.
- India's per capita generation is 4 kg.- The largest share of single-use plastic is that of packaging – with as much as 95% of single-use belonging to this category – from toothpaste to shaving cream to frozen foods.
- **Harm environment:** Single-use plastic also accounts for the majority of plastic discarded – 130 million metric tonnes globally in 2019 – all of which are burned, buried in landfills or discarded directly into the environment.
- **GHG emission:** On the current trajectory of production, it has been projected that single-use plastic could account for 5-10% of greenhouse gas emissions by 2050.

**C. Measures taken to phase out SUPB an on Single use Plastic:** **8**

- Central Pollution Control Board (CPCB) have announced a ban on single use plastic under 100 microns.
- From December 2022, the ban will be extended to polythene bags under 120 micron. CPCB will be monitored and reported to centre regularly.

**Stop raw materials supply:**

- Directions have been issued at national, state and local levels for example, to all petrochemical industries to not supply raw materials to industries engaged in the banned items.

**Directions to industries:**

- SPCBs and Pollution Control Committees will modify or revoke consent to operate issued under the Air/Water Act to industries engaged in single-use plastic items.

**Fresh licensing required:**

- Local authorities have been directed to issue fresh commercial licenses with the condition that SUP items will not be sold on their premises, and existing commercial licences will be cancelled if they are found to be selling these items.

**Encouraging compostable plastics:**

- CPCB has issued one-time certificates to 200 manufacturers of compostable plastic and the BIS passed standards for biodegradable plastic.

**Penalty**

- Those found violating the ban can be penalised under the Environment Protection Act 1986 – which allows for imprisonment up to 5 years, or a penalty up to Rs 1 lakh, or both.
- Violators can also be asked to pay Environmental Damage Compensation by the SPCB.

**Meendum Manjappai Campaign**

- The Hon'ble Chief Minister of Tamil Nadu inaugurated Meendum Manjappai campaign.
- It aims to raise awareness among public to eliminate the usage of banned single used plastics and revive the use of traditional ecofriendly alternatives viz., Manjappai (Yellow cloth bag).

6) Discuss about the importance of networking, and its various types and Applications.

**Network** **2**

- A large number of computers are interconnected by copper wire, fiber optic cable, microwave and infrared or through satellite.
- A system consisting of connected nodes made to share data, hardware and software is called a Computer Network.

**Some Important Reasons for Networking 3**

- Sharing of resources: Primary goal of a computer network is to share resources.
- For example several PCs can be connected to a single expensive line printer.
- Sharing information: Information on a single computer can be accessed by other computers in the network. Duplication of data file on separate PCs can be avoided.
- Communication: When several PCs are connected to each other, messages can be sent and received.
- From a remote location, a mobile salesman can relay important messages to the central office regarding orders.
- Relevant databases are updated and the business commitments are fulfilled.

**Applications of Network 4**

- The following are the areas where computer networks are employed.
- Electronic data interchange
- Tele-conferencing
- Cellular telephone
- Cable Television
- Financial services, marketing and sales
- Reservation of Airlines, trains, Theatres and buses
- Telemedicine
- ATM
- Internet banking

**Benefits of Network 2**

- Effective handling of personal communications
- Allowing several users to access simultaneously Important programs and data-Making it easy for the users to keep all critical data on shared storage device and safeguard the data.
- Allowing people to share costly equipment.

**Types of Network 4**

- The following are the general types of networks used today.
- Local Area Network (LAN)
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN)
- The number of Computers in the network is between two to several hundreds.

- LAN is generally used to share hardware, software and data. A computer sharing software package and hard disk is called a file server or network server.
- A Network that spans a geographical area covering a Metropolitan city is called Metropolitan Area Network (MAN).
- A WAN is typically two or more LANs connected together across a wide geographical area.
- The individual LANs separated by large distances may be connected by dedicated links, fiber optic cables or satellite links.

**7) Explain in detail about the criteria adopted to identify the Biodiversity heritage sites? 2**

**Biodiversity 2**

- 1992 – UN Earth summit defined “Bio – diversity as the variability among living organisms from all sources including terrestrial, aquatic, marine ecosystems and ecological complex”

**Biodiversity Heritage sites 2**

- Unique ecologically fragile ecosystems
- Terrestrial, coastal, inland waters and marine having rich biodiversity
- Components, richness of build as well as domesticated species, intra – specific species, high endemism, wild ancestors cultural diversity etc

**Criteria for identification of BHS**

**Significant diversity of life forms 2**

- Areas contain mosaic of natural semi – natural, man made habitats etc

**Diversity in Agriculture 2**

- Areas that contain significant domesticated biodiversity component-Representative of agro – ecosystems

**Conserved areas 2**

- Areas significance from biodiversity point of view
- Important cultural spaces – sacred grow / trees and sites (or)
- Other large community conserved areas.

**Areas for small ones 2**

- Includes very small ones offer refuge or corridors for threatened
- Endemic fauna and flora-Urban greens and wetlands

**All kind of legal land** **2**

- Whether – govt / private land with above categories
- Guidelines under wild life protection act
- Includes those sites – not covered under protected area network under wildlife act 1972.

**Areas mentioned** **1**

- Areas provides habitats, aquatic terrestrial for seasonal migrant species feeding / breeding
- Areas maintained as Reservation plots by research using of forest department.
- Medicinal plant conservation areas

**Conclusion**

- Many initiatives are taken by both central and state govt to maintain the balanced ecosystem.

**8) What is Biological Diversity Act, 2002? How is the Biological Diversity Act, 2002 helpful in conservation of flora and fauna?****Biological Diversity Act 2002** **2**

- Aims conservation of biological resources, managing its sustainable use, enabling fair and equitable sharing benefits
- Passed by : Indian Parliament-Under : United Nation Convention(1992)

**Structure of preserve Biological resource** **2**

- Act envisaged three – tier structure
- National Biodiversity Authority (NBA)
- State Biodiversity Boards (SBB)
- Biodiversity Management Committees (BMC's) (at local level)

**Role of BDA in preserving flora and fauna National Biodiversity Authority** **2**

- Established 2003 (HQ – Chennai)
- Statutory body facilitative, regulatory and advisory functions
- Its member include from ocean development department, science and tech, biotechnology etc

**Functions** **2**

- Promote environment conservation and sustainable use of biodiversity
- Advice central govt regarding activities and issue guidelines also advice state govt
- Measures to oppose the grant of intellectual property rights

**State Biodiversity Body** **2**

- Under section 22 of BDA Act.
- Consists of members related to biological biodiversity conservation, sustainable use of biological resource

**Functions** **2**

- To advice state govt guidelines issued by central govt
- Regulate by granting approvals requests for commercial utilization or bio – survey and bio – utilization of any resource.

**Biodiversity Management Committees** **2**

- Under Section 41 of BDA
  - Purpose : To promote conservation sustainable use and documentation of biological diversity
1. Preservation of habitats
  2. Conservation of land races
  3. Folk varieties and cultivars
  4. Domesticated stocks and breed of animals
  5. Microorganisms

**Functions** **1**

- To prepare people's biodiversity register in consultation with local people.
- Register contain comprehensive information on availability and knowledge of bio resource, medical or any other use.

**Conclusion**

- Under this act state govt also plays important role in establishing reserve.