TNPSC GROUP I MAIN – 2021
TEST – MONTH OF NOVEMBER
PAPER - III

Time: 3 hours **Total marks: 250**

SECTION A

UNIT- I: Geography of India with special reference to Tamil Nadu

3 x 10 = 30

Answer all the questions. Answer not exceeding 150 words each

1. Describe briefly the salient features of climatic classification of Wladimir Koppen.
விளாடிமிர் கோப்பெனின் காலநிலை வகைப்பாட்டின் சிறப்பம்சங்களை சுருக்கமாக விவரிக்க

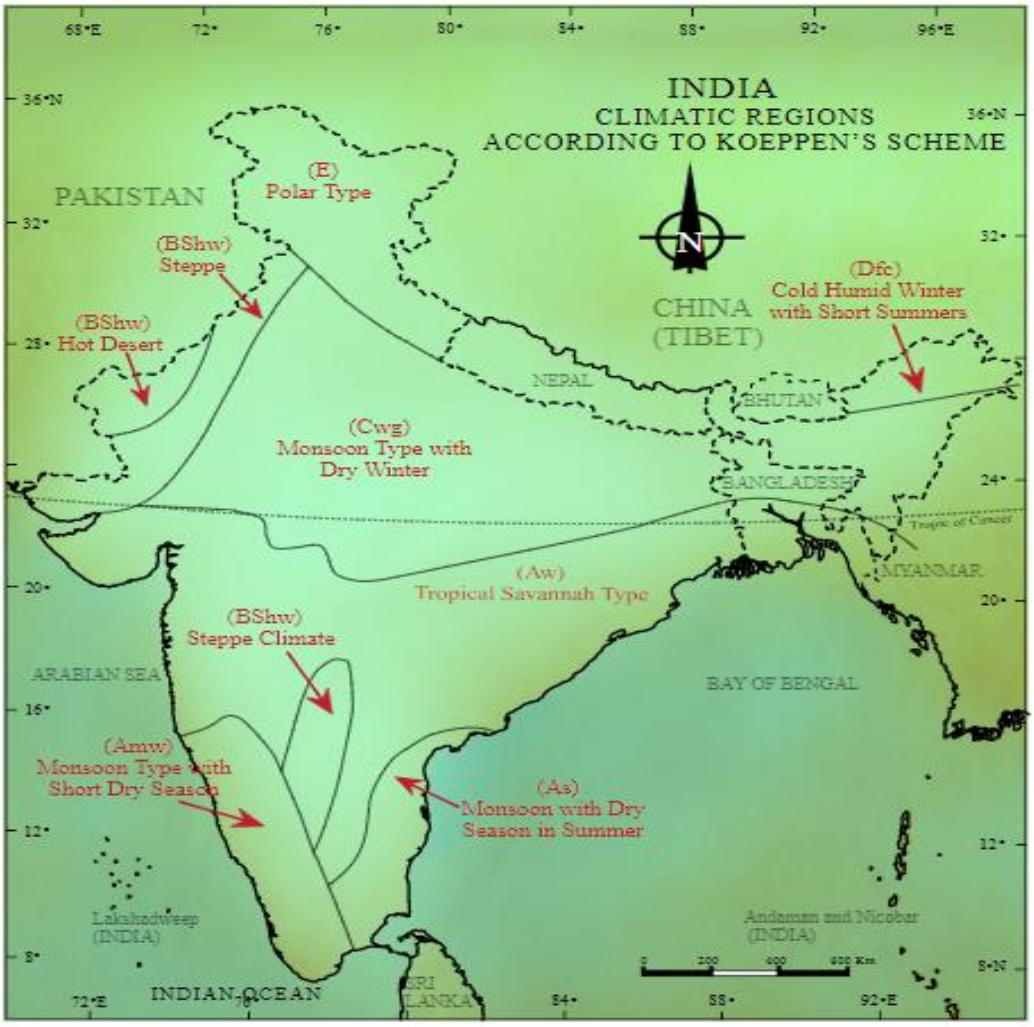
Climatic Regions of India

Koeppen used letter symbols to denote climatic types as given below. Each type is further sub-divided into sub-types on the basis of seasonal variations in the distributional pattern of rainfall and temperature. He used S for semi-arid and W for arid and the following small letters to define sub-types: f (sufficient precipitation), m (rain forest despite a dry monsoon season), w (dry season in winter), h (dry and hot), c (less than four months with mean temperature over 10°C), and g [Gangetic plain). Accordingly, India can be divided into eight climatic regions

Climatic Groups According to Koeppen

Group	Characteristics
A – Tropical	Average temperature of the coldest month is 18° C or higher
B – Dry Climates	Potential evaporation exceeds precipitation
C - Warm Temperature	The average temperature of the coldest month of the(Mid-Latitude) climate years higher than minus 3°C but below 18° C
D – Cold Snow Forest Climates	Average temperature of the coldest month is minus 3°C or below
E – Cold Climates	Average temperature for all months is below 10°C
H – High Land	Cold due to elevation
Type of Climate	Areas
Amw Monsoon with short dry season As – Monsoon with dry summer Aw – Tripical savannah	West coast of India south of Goa Coromandel coast of Tamilnadu Most of the Peninsular plateaus, south of

	the Tropic of Cancer
BWhw – Hot desert	North – western Gujarat, some parts of western Rajasthan and Punjab
Cwg – Monsoon with dry winter	Extreme western Rajasthan
Dfc – Cold humid winter with short summer	Ganga plain, eastern Rajasthan, northern Madhya Pradesh, most of North-east India
E – Polar type	Arunachal Pradesh, Jammu and Kashmir, Himachal Pradesh and Uttarakhand



2. Discuss the human races of India and explain their geographical distribution.
இந்தியாவில் உள்ள மனித இனங்களை பற்றி விவாதித்து மற்றும் அவற்றின் புவியில் பரவல் பற்றி விளக்குக

Distribution and Characteristics of Racial Groups of India Our present day population is a conglomeration of people belonging to different racial groups with different ethnic backgrounds.

The present population of the Indian subcontinent has been divided into four racial groups-

1. the Negritos,
2. the Proto-Australoids,
3. the Mongoloids, and
4. the Mediterraneans.

The Negritos were the first of the racial groups that came to India. Proto-Australoid race came here just after the Negritos and their sources are Australian aborigines. The Mongoloids came to India through the passes of northern and eastern mountain ranges. The Mediterraneans came to India from the south-west Asia.The present population of the Indian subcontinent has been divided broadly into the following racial groups:

1. The Negritos-Perhaps they were the first of the racial groups that came to India. They got settled in the hilly areas of Kerala and the Andaman Islands. Kadar, Irula and Puliyan tribes of Kerala resemble to a great extent with the Negritos. They are related to Africa, Australia and their neighbouring islands. The Negritos have black (dark) skin, woolly hair, broad and flat nose and slightly protruded jaws.

2. **The Proto-Australoids-**Perhaps the people belonging to the Proto-Australoid race came here just after the Negritos. Their sources are Australian aborigines. They are settled in the central India from the Rajmahal hills to the Aravalis. Santhal, Bhil, Gond, Munda, Oraon etc. tribes are related to this group. They are physically different from the Negritos in many ways, e.g. their hair is coarse and straight instead of being woolly. It is considered that they were the people who, in collaboration with the Mediterranean race, had developed the Indus Valley Civilization. Their skeletons have been found in the excavations of Mohenjodaro and Harappa.

3. **The Mongoloids-**The original homeland of this race was Mongolia (China). The Mongoloids came to India through the passes of northern and eastern mountain ranges. These people are concentrated in the nearby areas of the Himalayas, e.g. Ladakh, Sikkim, Arunachal Pradesh and other areas of the northeastern India. The Mongoloids have pale or light pale skin, short height, comparatively large head, half open eyes, flat face and broad nose. In India, they can be divided into two branches-

A. Paleo-Mongoloids- They were the first of the Mongoloids who came to India. These people are settled mainly in the border areas of the Himalayas. They are found mostly in Assam and the adjacent states.

B. Tibeto-Mongoloids- These people came from Tibet and are settled mainly in Bhutan, Sikkim, areas of north-western Himalayas and beyond the Himalayas in which Ladakh and Baltistan are included.

4. **The Mediterraneans**- They came to India from the south-west Asia. They may be divided into three groups

A. Paleo-Mediterraneans- They were the first of the Mediterranean's race that came to India. They were of medium height, black skin, well- built body and long head. Perhaps they were the people who had begun cultivation for the first time in the north-west India. The group which came later pushed them towards the central and the south India. At present, the Paleo-Mediterraneans with their other sub-groups comprise the most part of the population of the south India and a large part of the population of the north India.

B. Mediterranean's- They came to India later on. They developed the Indus valley civilization in collaboration with the Proto-Australoids and initiated the bronze culture for the first time during 2500- 1500 BC. Later on, the new invading group coming from north-west pushed them from the Indus valley to the Ganga valley and towards the south of the Vindhyas. Today, most of the population of lower castes in the north India belongs to this race.

C. Oriental-Mediterranean's- They came to India very late. They are populated mostly in the northwestern border areas of Pakistan and Punjab. They are also found in sufficient number in Sindh (Pakistan), Rajasthan and western Uttar Pradesh

3. What is mixed farming? Explain the advantages of mixed farming.
கலப்பு விவசாயம் என்றால் என்ன? கலப்பு விவசாயத்தின் நன்மைகளை விளக்குக

e) Mixed Farming Agriculture

Mixed farming is defined as a system of farm which includes crop production, raising livestock, poultry, fisheries, bee keeping etc. to sustain and satisfy as many needs of the farmer as possible.

Advantages

- When a crop fails or prices fluctuate the farmer can depend on livestock and vice versa.
- The farmer gets income continually. Since animal rearing is conducted through out the year the farmer income remain stable unlike when the farmer engages on crop production alone where his income increase immediately after selling his produce and drops after harvesting period is over.
- Income is larger. Combinations of income from selling crop harvest and animal products in larger as compared to crop farming alone or animal rearing alone

- The farmer is busy throughout the year. After harvesting the farmer concentrate on rearing animals this ensure reliable income to the farmer
- Using crop residue as fodder saves money for buying it. Without crop residue the farmer may be required to buy fodder from external suppliers which may cost a lot of money therefore by using crop residue the farmer saves money which in turn may be used to improve other aspects of his life
- Using manure from animals ensures sustained crop production and also saves money that would be used to buy manure. Animal manure which is considered as one of the most sustainable source of nutrients to plants help the farmer increase his yields and

saves farmers money to buy fertilizers and saved money can be used to improve other aspects of farmer's life.

UNIT- II: Environment, Bio Diversity and Disaster Management

3 x 10 = 30

Answer all the questions. Answer not exceeding 150 words each

4. Define keystone species. Discuss the importance of keystone species in conservation biology

சுற்றுச்சூழலின் மைய சமநிலைபடுத்தி சிற்றினங்கள் - வரையறு. உயிரியல் பாதுகாப்பில் சுற்றுச்சூழலின் மைய சமநிலைபடுத்தி சிற்றினங்களின் முக்கியத்துவம் குறித்து விவாதி

The word keystone species was introduced by T Paine in 1969

Keystone species meaning is that they are exceptionally important species which help in the survival of other species in an ecosystem, relative to its population. Their role is such that they help in maintaining a balance in an ecosystem where living organisms depend upon each other and help in each other's survival. If keystone species are absent, the population of a certain species may over dominate the other species and hence create an imbalance in the ecosystem.

The main features of a keystone species are listed below.

1. The activity of the species determines the community structure.
2. They can create or modify habitats and can influence the interspecific interactions among the community.
3. They maintain the organization and diversity of their communities.
4. The effects are disproportionate to the biomass or relative abundance of the species.
5. The species need not be dominant always.
6. Removal of keystone species causes loss in biodiversity of the community.

Major roles in conservation

1. These species can be targeted for conservation approaches to maintain diversity.
2. Used to retain the community structure intact.
3. Reestablishment of ecosystems. For example, restoration of forest lands after fire hazards.
4. Support the viable populations of other species in the community which otherwise needs expensive methods of conservation.
5. Creation of habitat which can be inhabited by species prone to extinction. E.g. Coral introduced into the coastal lines branch up and provide shelter for other species of marine invertebrates such as fishes. Many of the species having the corals as their habitat are facing extinction; hence the introduction of corals into newer coasts will augment the preservation of these species indirectly.

5. Explain waste-based energy. Give an account of recently developed biomass-based energy technology for sustainable development.
கழிவு அடிப்படையிலான ஆற்றலை விளக்குக. நீடித்த நிலையான மேம்பாட்டிற்காக சமீபத்தில் உருவாக்கப்பட்ட உயிரித்திரள் அடிப்படையிலான ஆற்றல் தொழில்நுட்பத்தை விளக்குக.

How waste-to-energy plants work

Waste-to-energy plants burn municipal solid waste (MSW), often called garbage or trash, to produce steam in a boiler that is used to generate electricity.

As the world's second-largest producer of agricultural products, there lies much untapped potential for India to convert its agricultural residue to renewable energy via biomass-based power plants. In 2014, the government of India set the target for an additional 175 GW of renewable energy generation capacity by 2022, of which 10 GW is expected to come from biomass-based power generation.

Bio Mass
Introduction

Biomass has always been an important energy source for the country considering the benefits it offers. It is renewable, widely available, carbon-neutral and has the potential to provide significant employment in the rural areas. Biomass is also capable of providing firm energy. About 32% of the total primary energy use in the country is still derived from biomass and more than 70% of the country's population depends upon it for its energy needs. Ministry of New and Renewable Energy has realised the potential and role of biomass energy in the Indian context and hence has initiated a number of programmes for promotion of efficient technologies for its use in various sectors of the economy to ensure derivation of maximum benefits. For efficient utilization of biomass, bagasse based cogeneration in sugar mills and biomass power generation have been taken up under biomass power and cogeneration programme.

Biomass power & cogeneration programme is implemented with the main objective of promoting technologies for optimum use of country's biomass resources for grid power generation. Biomass materials used for power generation include bagasse, rice husk, straw, cotton stalk, coconut shells, soya husk, de-oiled cakes, coffee waste, jute wastes, groundnut shells, saw dust etc.

POTENTIAL

As per a recent study sponsored by MNRE, the current availability of biomass in India is estimated at about 750 million metric tonnes per year. The Study indicated estimated surplus biomass availability at about 230 million metric tonnes per annum covering agricultural residues corresponding to a potential of about **28 GW**. This apart, about 14 GW additional power could be generated through bagasse based cogeneration in the country's 550 Sugar mills, if these sugar mills were to adopt technically and economically optimal levels of cogeneration for extracting power from the bagasse produced by them.

TECHNOLOGY
Combustion

The thermo chemical processes for conversion of biomass to useful products involve combustion, gasification or pyrolysis. The most commonly used route is combustion. The advantage is that the technology used is similar to that of a thermal plant based on coal, except for the boiler. The cycle used is the conventional rankine cycle with biomass being burnt in high-pressure boiler to generate steam and operating a turbine with the generated steam. The exhaust of the steam turbine can either be fully condensed to produce power, or used partly or fully for another useful heating activity. The latter mode is called cogeneration. In India, cogeneration route finds application mainly in industries.

Cogeneration in Sugar and Mills

Sugar industry has been traditionally practicing cogeneration by using bagasse as a fuel. With the advancement in the technology for generation and utilization of steam at high temperature and pressure, sugar industry can produce electricity and steam for their own requirements. It can also produce significant surplus electricity for sale to the grid using same quantity of bagasse. For example, if steam generation temperature/pressure is raised from 400^{o}C/33 bar to 485^{o}C/66 bar, more than 80 KWh of additional electricity can be produced for each ton of cane crushed. The sale of surplus power generated through optimum cogeneration would help a sugar mill to improve its viability, apart from adding to the power generation capacity of the country.

Biogas
Brief Introduction: Biogas is produced when bio-degradable organic materials/wastes such as cattle-dung, biomass from farms, gardens, kitchens, industry, poultry droppings, night soil and municipals wastes are subjected to a scientific process, called Anaerobic Digestion (A.D.) in a Biogas Plants. Biogas Plant designs depend upon several factors and the feed stock to be processed is of paramount importance. Biogas is the mixture of gases (primarily methane (CH4) and Carbon di-oxide (CO2) and traces of Hydrogen Sulfide (H2S), Moisture) produced by the decomposition/breakdown of bio-degradable organic matter in the absence of oxygen from raw materials such as agricultural waste, cattle dung, poultry droppings, municipal waste, plant material, sewage, green waste or food/kitchen waste. Biogas has a calorific value of about 5000 kcal per m3. The digested slurry produced from Biogas Plants as a by-product is a better source of nutrient enriched organic manure for use in Agriculture. It not only helps in improving the crop yield but also maintain soil health.

6. Explain the environmental consequences of sand mining in Tamil Nadu
தமிழகத்தில் மணல் அள்ளுவதால் ஏற்படும் சுற்றுச்சூழல் பாதிப்புகளை விளக்குக

Sand mining" is a practice that is used to extract sand, from various environments, such as beaches, inland dunes and dredged from ocean beds, and river beds of deltaic regions. The mining is in operation in all the continents of the Globe. Environmental problems occur when the rate of extraction of sand, gravel and other materials exceeds the rate of deposition

Illegal and indiscriminate sand mining will became threat to the worldwide environments. It leads to changes in river channel form, physical habitats and food webs. It also increases the velocity of flow in river which destroy flow-regime eventually erodes the river banks. Removal of vegetation and destruction of the soil profile destroys habitat above and below the ground and faunal population decrease.

Sand dunes are part of the beach system, when destroyed coastal lands are vulnerable to flooding. Sand dunes play an important role in barriers against like heavy storms, erosion through waves or floods. They serve as habitat for many small animals and plants that are part of the marine and coastal food web and whose loss implies a threat to other species as well. Sand aquifer helps in recharging the water table and sand mining causes sinking of water tables in the nearby areas, , drops leaving the drinking water wells on the embankments of these rivers dry.

Turbidity increases at the mining site. Saline water intrusion takes along the coastal aquifers. Sand mined areas loose scenic beauty, cause radiation based on the component minerals, dust pollution, creates noise and vibration and spoils roads and other structures. This paper reviewed the sand mining impacts on river, dune, marine, hydrological, biological and sociological environments with some worldwide case studies.

Impact of Sand mining in river environment

Sand is vital for sustenance of rivers. The sand mining has several impacts on the river environment. Sand mining disturbs and completely remove the habitat from the mined zones. It leads to changes in its channel form, physical habitats and food webs – the river‟s ecosystem. It also increases the velocity of flow in river which destroy flow-regime eventually erodes the river banks.

- Channel widening causes shallowing of the streambed, producing braided flow or subsurface inter-gravel flow in riffle areas, hindering movement of fishes between pools.

- Riverbed becomes dry due to exposure to solar radiation decrease the surface and groundwater.

- Depletion of sand in the streambed causes the deepening of rivers and estuaries, and the enlargement of river mouths and coastal inlets. It leads to saline-water intrusion.

- Removal of vegetation and destruction of the soil profile destroys habitat above and below the ground and faunal population decrease.

Amaravathi River, Tamil Nadu, India

At Amaravathi River, high altitudes denudation occurred where tea gardens are plentiful. As the vegetation removed and replaced by tea plantations the function of recharge of ground water during rainy season and discharge to surface water during dry season is lost.

This will augment the surface flow during rainy days and there will be no storage of ground water resulting in virtual drying of small streams

Coastal Environment

Beach formation begins with erosion continental material. It forms and, gravel, and cobble fragments, which transport to sea by and Ice Rivers. Mine sediment is suspended in sea water and transported along the coast by the long shore current. Sand dunes are present on shorelines where fine sand is transported landward by a combination of wind and waves and stabilized with vegetation. Dunes can help protect coastal property from the destructive forces of storm surges and tsunamis. However manmade had severe impacts on coastal sand dunes

Impacts of sand mining in coastal environment

- If the sand is mineral within 30m depth or less than 3km from shore, beaches and dunes suffer
- Sand dunes are part of the beach system and provide reservoirs of sand that feed the beach during tropical storms and hurricanes. If they destroyed, coastal lands are vulnerable to flooding.
- Sand dunes play an important role as barriers against like heavy storms, erosion through waves or floods.
- Destruction of picturesque beaches causes tourism to dissipate.
- They serve as habitat for many small animals and plants that are part of the marine and coastal food web and whose loss implies a threat to other species as well.
- Beach erosion takes place because of sand mining and effect homes and livelihoods

Impacts of sand mining

Water table depletion

Sand aquifer helps in recharging the water table and sand mining causes sinking of water tables in the nearby areas. Apart from threatening bridges, sand mining transforms the riverbeds into large and deep pits; as a result, the groundwater table drops leaving the drinking water wells on the embankments of these rivers dry.

Water Quality

Turbidity increase at the mining site due to resuspension of sediment, sedimentation due to stockpiling, organic particulate matter, oil spills or leakage from excavation machinery and transportation vehicles.

Salinisation

Saline water intrusion takes along the coastal aquifers.

Acid Mine Drainage

Acid mine drainage also dissolves toxic metals, such as copper, gold, silver, molybdenum, aluminum, cadmium , arsenic, lead and mercury, from the surrounding rock. Even in very small amounts, metals can be toxic to humans and wildlife. If uncontrolled, the acid mine drainage may runoff into streams or rivers or leach into ground water. Plants, animals, and fish are unlikely to survive in such streams.

Scenic beauty

The beaches and backwaters of coastal areas are famous for their scenic beauty. Beach and backwater tourism is one of the main areas for economic development. There are pockets along the coast with harbours and commercial centers. We can‟t see the beauty in near future.

Coastal Erosion

People live in the coastal areas are under the constant threat and fury of nature wherever the sand mining carried. Coastal erosion causes damage to the properties leading to social discontent‟ Extraction of beach sand exposes coastal areas to the ravages of erosion.

Radiation

The residue of the radioactive mineral such as monazite and zircon, detrimental to local biota.

Cancer

Fracking process may cause cancer in silica sand mining areas.

Dust Pollution

Large quantities of dust enters into the atmosphere during sand mining cause respiratory disorders.

Noise and vibration

Noise is an issue in the mining areas because mines normally operate 24 hrs day and sound levels fluctuate widely. The noises pollute the environment and disturb sleep.

Roads and other structures

Movement of heavy vehicles cause damage to roads and bridges and sometimes cause traffic hazards.

UNIT- III: Indian Economy – Current Economic Trends and impact of Global Economy of India
4 x 10 = 40

Answer all the questions. Answer not exceeding 150 words each

7. Explain the package of services provided under Integrated Child Development Services (ICDS) Programme.
ஒருங்கிணைந்த குழந்தைகள் மேம்பாட்டு சேவைகள் திட்டத்தின் கீழ் வழங்கப்படும் சேவைகள் பற்றி விளக்குக

Vision of ICDS:-
Restructured ICDS visualises:

1. A holistic physical, psychosocial, cognitive and emotional development of children under 6 years of age.

2. To nurture protective child friendly development learning and promotion of optimal early childhood care with greater emphasis on children under three years.

3. A gender sensitive family, community programme and policy environment including adolescent and maternal care.

ICDS in Mission Mode:-
During the 12th Five Year Plan (2012-2017), Integrated Child Development Services Scheme has been restructured to carry out, programmatic management and institutional reforms in a phased manner, where Anganwadi Centres are repositioned as a **"Vibrant Early Childhood Development Centre"** to become the "first out post" for learning, health and nutrition by providing additional human resource and infrastructure.

Government have formed State Mission Steering Group (SMSG), State Empowered Programme Committee (SEPC), State ICDS Mission and the State and District Child Development Society with its Governing Body and Executive Committee.

Organisational Set up of ICDS in Tamil Nadu:-
Social Welfare and Nutritious Meal Programme Department
↓
State ICDS **(Mission Director) /**Child Development Society,
↓
District Programme Office/ Child Development Society / **– 32 Districts**
↓
Child Development project Office **– 434 Projects** (387-Rural, 47-Urban)
↓
Anganwadi Centres **54,439** (Main 49,499 and Mini 4,940)

Objectives and Strategies:-
- To institutionalize essential services and strengthen infrastructures at all levels
- Implementing ICDS in Mission Mode to prevent under nourishment and assure children of the best possible start to life, focussing on children under-3 years; focussing on early child care and learning environment

- To enhance capacities at all levels
- Training of all functionaries / staff to strengthen field based joint action and teamwork to achieve desired results and laid down objectives.
- To ensure appropriate inter-sectoral responses at all levels
- Ensure convergence at the grassroots level by strengthening partnerships with the Health, Rural Development and Panchayat Raj Institutions, Municipal Administration and Water Supply and Communities to improve outreach and quality of child development services.
- To raise public awareness at all levels and participation
- Inform the beneficiary group and public on the availability of the four core child development services under ICDS and promote social mobilization and voluntary action.
- To create database and knowledge base for child development services Strengthen ICDS Management Information System (MIS); Use Information Communication Technology (ICT) to strengthen the information base and facilitate sharing and dissemination of information; Undertake research and documentation.

Services provided under ICDS Mission:-

1. Early Childhood Care Education and Development (ECCED)
- Supplementary Nutrition
- Preschool Education

2. Care and Nutrition Counseling
- Infant young child feeding practices (IYCF)
- Community based management of severely and moderately undernourished

3. Health Services
- Health Check up , Ensuring Immunisation services
- Referrals

4. Community Mobilization, Awareness, Advocacy and IEC

Supplementary Nutrition:-

Supplementary Nutrition in the form of Complementary Nutrition Food is provided to Integrated Child Development Services Scheme beneficiaries i.e. Children 6 months - 36 months, Adolescent Girls, Pregnant Women and Lactating Mothers for 300 days in a year. By providing supplementary feeding through the Anganwadi Centres an attempt is made to bridge the protein and energy gap between the Recommended Dietary Allowance (RDA) and average dietary intake of children, pregnant women and Lactating mothers.

To combat malnutrition in the State, multipronged strategy has been planned as a special initiative, the Department of Integrated Child Development Services introduced the supply of millets based bakery products like biscuits / cookies etc to all Children in the age group of 37 to 60 months (covering normal, moderately underweight and severely underweight) in 2 districts viz., Tirunelveli & Thiruvannamalai with poor nutritional indicators for a period of 6 months.

Supplementary Nutrition to under nourished children in Japanese Encephalitis affected areas:-

Japanese Encephalitis (JE) is a vector-borne disease. Under nutrition is an important risk factor for Japanese Encephalitis / Acute Encephalitis Syndrome. Special efforts are made to improve the nutritional status of the children in high risk areas.

The Ministry of Health and Family Welfare has identified 5 high risk districts in the State such as Karur, Madurai, Thanjavur, Thiruvarur and Villupuram. All the children in the age group of 6 to 36 months are provided with take home ration irrespective of the nutritional status and the government have taken steps to provide additional supplementary nutrition @ ₹4.00 / day / child for 300 days in a year to improve the nutritional status of moderately and severely undernourished children in the age group of 37+ to 60+ months at the Anganwadi centers in these districts

Introduction of Variety Meal at Anganwadi Centres:-

Considering the special nature and nutritional requirements of the children in the age group of 2 to 5 years attending Anganwadi Centres, the scheme of Variety Meal was introduced with effect from 20.03.2013 in one block in eachdistrict on a pilot basis covering 3,973 Anganwadi Centres with the following menu and extended to all (54,439) Anganwadi Centres with effect from 15.08.2014

Health Services:-
Weight Monitoring:-
Under Integrated Child Development Services Scheme, weight of 0 to 5 years children is being taken and monitored every month and plotted in the WHO register, Mother and Child Protection Cards nutritional status from the growth curve is assessed and measures are taken to reduce malnutrition.

Supply of First Aid Kits to Anganwadi Centers:-

The Anganwadi Center is the most peripheral and first contact point with the community. There was a felt need for quality management in health care delivery system by the field worker and hence the Hon'ble Chief Minister of Tamilnadu has made an announcement under 110 Rule on 24.07.2014 about the supply of First Aid Kit to all Anganwadi Centres @ ₹460 per centre to the tune of ₹250.42 lakh. The First Aid Kit materials have been supplied to all Anganwadi Centres, contains one digital thermometer and essential items like Bandage Scissors, Bleached Guaze pad, Micropore, Handy Plast etc.,

8. Describe the highlights of Fiscal Reforms and Budget Management Act 2003.
நிதி சீர்த்திருத்தங்கள் மற்றும் நிதிநிலை அறிக்கை மேலாண்மை சட்டம் 2003-இன் சிறப்பம்சங்களை விவரி.

FRBM ACT

Under the **Fiscal Responsibility and Budget Management Act (FRBMA) 2003,** both the Centre and States were supposed to **wipe out revenue deficit** and cut **fiscal deficit to 3% of GDP by 2008-09,** thus bringing much needed fiscal discipline. Originally, the FRBM bill had given annual numerical targets as well. But in the process of making it a law, the annual targets were dissolved and the act simply said that the Centre will take appropriate measures to eliminate revenue deficit by March 31, 2008. The act left the annual numerical targets to be formulated by the Central Government in the form of FRBM rules under the FRBM Act 2000.

However, the NDA government (which passed this act) was replaced by UPA in 2004. The UPA-I Government notified the FRBM Rules in July 2004. As Parliament is the supreme legislative body, the Act and the Rules legally bind the Finance Ministers and Governments. The key provisions of the Act as well as FRBM rules are as follows:

- Every year the government will bring down **revenue deficit** by 0.5% and **eliminate** it by 2007-08.
- Every year, the government will bring down **fiscal deficit** by 0.3% and bring it down to **3%** by 2007-08.
- Total liabilities of the Union Government should not rise by more than 9% a year.
- Union Government would not give guarantee to loans raised by PSUs and State governments for more than **0.5% of the GDP** in aggregate.
- Union Government would place three more documents along with the budget documents viz. Macroeconomic Framework Statement, Medium Term Fiscal Policy Statement and the Fiscal Policy Strategy Statement.
- At the end of second quarter, the Finance Minister would make a statement on the trend of fiscal indicators and corrective measures taken thereof. However, due to the 2007 international financial crisis, the deadlines for the implementation of the targets in the act was initially postponed and subsequently suspended in 2009. In last few years, the act has been largely neglected.

9. What are the causes for inter-regional and inter-district disparities in Tamil Nadu?
தமிழ்நாட்டில் பிராந்தியங்களுக்கு இடையேயும் மாவட்டங்களுக்கும் இடையேயும் சமமான வளர்ச்சி இல்லாததற்கான காரணங்கள் யாது?

1. Location of industries
2. Non availability of resources like water, minerals and soil
3. Lack of infrastructure facilities
4. Connectivity issues like lack of roadways, railways and air connectivity
5. Social Gap
6. Lack of education
7. Migration
8. Communal unrest
9. Lack of financial support

10. Answer the following questions
பின்வரும் வினாக்களுக்கு விடையளி

a. What is meant by 'Depreciation of the Rupee' with respect to the U.S. Dollar (5 marks)
அமெரிக்க டாலரைப் பொருத்து 'ரூபாய் மதிப்பு குறைத்தல்' என்றால் என்ன?

- Currency depreciation is a fall in the value of a currency in a floating exchange rate system.
    - In a floating exchange rate system, market forces (based on demand and supply of a currency) determine the value of a currency.
- Rupee depreciation means that rupee has become less valuable with respect to dollar.
    - It means that the rupee is now weaker than what it used to be earlier.
    - For example: USD 1 used to equal to Rs. 70, now USD 1 is equal to Rs. 76, implying that the rupee has depreciated relative to the dollar i.e. it takes more rupees to purchase a dollar.
- Some of the factors that influence the value of a currency:
    - Inflation
    - Interest rates
    - Trade deficit
    - Macroeconomic policies
    - Equity market
- Currency depreciation increases a country's export activity as its products and services become cheaper to buy.
- The RBI intervenes in the currency market to support the rupee as a weak domestic unit can increase a country's import bill.

b. What is meant by 'Capital account convertibility'? (5 marks)
முதலீட்டு கணக்கு மாற்றுதல் என்றால் என்ன?

Capital Account convertibility

After the recommendations of the **S.S. Tarapore Committee** (1997) on the Capital Account Convertibility, India has been moving in the direction of allowing full convertibility in this account but with required precautions. India is still a country of partial convertibility (40:60) in the capital

The Second Committee on the Capital Account Convertibility (CAC) again chaired by **S.S. Tarapore** handed over its report in September 2006 on which the RBI/the Government is having consultations.

SECTION – B
UNIT- I: Geography of India with special reference to Tamil Nadu

3 x 15 = 45

Answer all the questions. Answer not exceeding 250 words each

11. Examine the biological significance of soil and give a bio-climatic classification of the soils found on the surface of the earth.
மண்ணின் உயிரியல் முக்கியத்துவத்தை ஆய்க மற்றும் பூமியின் மேற்பரப்பில் காணப்படும் மண்ணின் உயிரி-காலநிலை வகைப்பாட்டையும் எழுதுக

Importance of Soil

Soil is an important element essential for the survival of living organisms. The importance of soil is mentioned below:

1. The fertile soil helps in the growth and development of the plants. The plants thus produced are healthy and provide food, clothing, furniture, and medicines.
2. It supports many life forms including bacteria, fungi, algae, etc. These microbes, in turn, maintain environmental balance by retaining the moisture and decaying the dead organisms.
3. The topsoil supports certain life activities such as reproduction, hatching, nesting, breeding, etc. of a few organisms.
4. The organic matter present in the soil increases the fertility of the soil which is responsible for the growth of the plants. It also contains certain minerals and elements that are necessary for the plants to carry out their cellular activities.
5. Soil is used for making cups, utensils, tiles, etc. The contents in the soil such as gravel, clay and sand are used in the construction of homes, roads, buildings, etc.
6. Useful mineral medicines such as calcium, iron, and other substances such as petroleum jelly for cosmetics are extracted from the soil.
7. The soil absorbs the rainwater. This water is evaporated and released into the air during sunny days, making the atmosphere cooler.

Bio climatic classification of soil

Classify the soil based on climatic regions in India

Soils in

Arid region- cold and hot – Kashmir and desert areas
Semi arid region – north western part of india
Humid region – central and peninsular india
Coastal region -
Mountain region

12. What is watershed? Highlight the importance of watershed in conserving the natural resources.
வடிகால் அமைப்பு என்றால் என்ன? இயற்கை வளங்களைப் பாதுகாப்பதில் நீர்நிலைகளின் முக்கியத்துவத்தை எடுத்துரைக்க.

Watershed management and its importance

Watershed is a geographical area drained by a stream or a system connecting stream in which water from all over an area flow under gravity to a common drainage channel. A watershed system delivers water through rills, gullies and streams to a larger body of water.

Watershed management is proper utilization of land and water resource for optimum production with minimum hazards to natural resources. It relates to soil and water conservation proper land uses, promote afforestation and sustainable farming practices, conserve farmland and pastureland, maintaining soil fertility, proper management of local water for farming, drainage, construct small dams for flood protection, improving individuals standard of living and thereby promote ecological balance.

Key steps in watershed management

Watershed plans should first identify the characteristics of the watershed and inventory the watershed's natural resources. The first steps in watershed management planning are to:

i. Delineate and map the watershed's boundaries and the smaller drainage basins within the watershed.

ii. Map and prepare an Inventory of resources in the watershed.

iii. Prepare an Inventory and map the natural and manmade drainage systems in the watershed.

iv. Prepare an Inventory and map land use and land cover.

v. Prepare a soil map of the watershed.

vi. Identify areas of erosion, including stream banks and construction sites.
vii. Identify the quality of water resources in the watershed as a baseline; and

viii. Prepare a map and Inventory of pollution sources, both point sources (such as industrial discharge pipes) and nonpoint sources (such as municipal storm water systems, failing septic systems, illicit discharges).

Watershed Management in India:

Watershed development project in the country has been sponsored and implemented by Government of India from early 1970s onwards. Various watershed

development programs like Drought Prone Area Program (DPAP), Desert Development Program (DDP), and river Valley Project (RVP), National Watershed Development Project for Rain-fed Areas (NWDPRA) and Integrated Wasteland Development Program (IWDP) were launched subsequently in various hydro-ecological regions. Entire watershed development programs primarily focused on soil conservation and rainwater harvesting during 1980s and before.

13. Explain the origin and physiography of the peninsular plateau of India.
இந்தியாவின் தீபகற்ப பீடபூமியின் தோற்றம் மற்றும் இட அமைவினை விளக்குக

III. Peninsular Plateau

To the northwest of the Aravali hills lies the Great Indian desert. It is a land of undulating topography dotted with longitudinal dunes and *barchans*. This region receives low rainfall below 150 mm per year; hence, it has arid climate with low vegetation cover. It is because of these characteristic features that this is also known as ***Marusthali***. It is believed that during the Mesozoic era, this region was under the sea.

The peninsular plateau is located to the south of northern Great Plains. It is triangular in shape and covers an area of about 16 lakh sq.km. It is surrounded by hill ranges on all sides, such as the Aravalli, Vindhya, Satpura and Rajmahal ranges in the north, the Western Ghats in the west and the Eastern Ghats in the east.

The peninsular plateau extends from north to south for a distance of about 1600km and from east to west for about 1400km. The average height varies between 600-900 mts above the mean sea level. The general slope is from west to east, while in the Narmada-Tapti region it is from east to west. The Narmada River divides the peninsular plateau into two unequal parts. The northern part is called the 'Central Highlands' while the southern part is called the 'Deccan plateau'.

B) Deccan plateau

It covers an area of about 5 lakh sq. km. It is bounded by the satpura and the Vindhya ranges in the northwest, the Mahadev and Maikala ranges in the north, the Western Ghats in the west, and the Eastern Ghats in the east. The Deccan plateau slopes from west to east. That is why the rivers like Mahanadi, Godavari, Krishna and Kaveri flow eastward and join the Bay of Bengal. The northern part, also known as the Deccan trap is made up the lava rocks and has black regur soils. In the southern part, the Karnataka plateau merges with the Nilgiri Hills. The Telengana plateau is drained by the Godavari, Krishna and Penneru rivers.

Hill Ranges of Peninsular India

i. Aravalli Range is one of the oldest fold mountain systems in the world. Gurushikhar (about 1722 metres) in the Abu hills is the highest peak of the Aravalli range. The Aravalli ranges are highly eroded and dissected.

ii. Vindhya Range acts as a watershed between the Ganga river system and the river systems of south India.

iii. Satpura range lies between the Narmada and the Tapti rivers. The term 'Satpura' means 'seven folds'. The Satpura Mountains are very ancient foldmountains.

Significance of the Peninsular Plateau

- The Peninsular Plateau of India is the oldest and the most stable landmass of the Indian subcontinent. It contains a rich variety of minerals which occur in large quantities. There are huge deposits of iron, manganese, copper, bauxite, chromium, mica, gold, etc. Above all, 98 per cent of the Gondwana coal deposits of India are found in the Peninsular Plateau. Besides, there are large reserves of slate, shale, sandstones, marbles, etc.

- A large part of north-west plateau is covered with fertile black lava soil which is extremely useful for growing cotton. Some other areas of the Peninsular Plateau are suitable for the cultivation of tea, coffee, rubber, millets, spices, tobacco and oilseeds. Some low lying areas of the plateau are suitable for growing rice. A variety of tropical fruits is also grown here. The highlands of the plateau are covered with different types of forests which provide a large variety of forest products.

- The rivers originating in the Western Ghats offer great opportunity for developing hydroelectricity and providing irrigation facilities to the agricultural crops. The plateau is also known for its hill resorts such as Udagamangalam (Ooty), Panchmarhi, Kodaikanal, Mahabaleshwar, Khandala, Matheron, Mount Abu, etc.

UNIT- II: Environment, Bio Diversity and Disaster Management

3 x 15 = 45

Answer all the questions. Answer not exceeding 250 words each

14. What are the primary and secondary air pollutants? Explain the human health problems caused by air pollution. Add a note on air pollution challenges in New Delhi
முதன்மை மற்றும் இரண்டாம் நிலை காற்று மாசுபடுத்திகள் யாவை? காற்று மாசுபாட்டால் மனிதர்களுக்கு ஏற்படும் உடல்நலப் பிரச்சனைகளை விளக்குக. புது டெல்லியின் காற்று மாசில் உள்ள சவால்கள் பற்றியும் குறிப்பு வரைக

Primary pollutants are the ones that are emitted directly into the atmosphere by the sources (such as power-generating plants).

Secondary pollutants are the ones that are formed as a result of reactions between primary pollutants and other elements in the atmosphere, such as ozone

Effects on human health:

i**. Suspended Particeles:**

Human respiratory system has a number of mechanisms for protection from air pollution. Bigger particles (>10µm) can be trapped by the hairs and sticky mucus in the lining of the nose. Smaller particles can reach tracheobronchial system and there get trapped in mucus. These are sent back to throat by beating of hair like cilia from where these can be removed by spitting or swallowing. Years of exposure to air pollutants (including cigarette smoke) adversely affect these natural defences and can result in lung cancer, asthma, chronic bronchitis and emphysema (damage to air sacs leading to loss of lung elasticity and acute shortness of breath). Suspended particulates can cause damage to lung tissues and diseases like asthma, bronchitis and cancer especially when they bring with them cancer causing or toxic pollutants attached on their surface.

ii. Sulphur di oxide

Sulphur di oxide (SO_2) causes constriction of respiratory passage and can cause bronchitis like conditions. In the presence of suspended particulates, SO_2 can form acid sulphate particles, which can go deep into the lungs and affect them severely. High concentration of atmospheric SO_2 and suspended particulate matter in metros like Delhi, Kolkata, Agra, Ahmedabad, Jaipur, Kanpur, Nagpur, Mumbai, Chennai etc. cause increased morbidity and mortality due to their synergistic (enhancing each-others toxicity) effects. Particulate matter less than 2.5 micron (PM2.5) is produced during combustion in vehicles and is so small that it escapes through apparatus fitted in Euro II and Euro III cars. Metals present in PM2.5 - penetrate deep into lungs and may cause asthma and even cancer.

iii. Oxides of Nitrogen:

Oxides of nitrogen especially NO_2 can irritate lungs and cause conditions like chronic bronchitis and emphysema. NO_2 also contributes to photochemical smog.

iv. Carbon Monoxide:

Carbon monoxide (CO) reaches lungs and combines with haemoglobin of the blood to form carboxy haemoglobin. CO has affinity for haemoglobin 210 times more than that of oxygen. Haemoglobin is, therefore, unable to transport oxygen to various parts of the body. This causes suffocation. Long exposure to CO may cause dizziness, unconsciousness and even death.

v. Others:

Many other air pollutants like benzene (from unleaded petrol), formaldehyde and particulates like polychlorinated biphenyls (PCBs) toxic metals and dioxins (from burning of polythene) can cause mutations, reproductive problems or even cancer. Many other hazardous materials like asbestos, beryllium, mercury, arsenic and radioactive substances cause lung diseases and/or affect other vital organs like kidney, liver, spleen, brain and some may also cause cancer

15. Answer the following questions
பின்வரும் வினாக்களுக்கு விடையளி

a. Explain various causes for the changes in climate and its effect on both the living and non-living bodies on the Earth. (10 marks)
காலநிலை மாற்றத்திற்கான பல்வேறு காரணங்கள் மற்றும் பூமியில் உள்ள உயிரினங்கள் மற்றும் உயிரற்றவைகளின் மீது அதன் தாக்கத்தையும் விளக்குக

Reasons for Climate change

Burning fossil fuels emits gases into the atmosphere. Burning fossil fuel to provide energy, coupled with the effects of major transportation and deforestation causes a rapid increase in global temperatures. This can change the climate of a place.

Anthropogenic (Man-made) cause behind Environmental changes

- Burning of fossil fuel
- Industrial processes
- Burning of biomass
- Deforestation
- Agricultural practices
- Change in land use pattern

Burning of fossil fuel

Fossil fuel, a non-renewable source of energy, that took, millions of years to form, is now being used up in the form of coal, petroleum, diesel, natural gas, etc. for industrial purposes, transportation, producing electricity, domestic purpose. Burning of fossil fuel contributes to $3/4^{th}$ of the total CO_2 emission, around $1/5^{th}$ of the total methane emission and a huge amount of nitrous and sulphur oxides. All these gases are considered as greenhouse gases which traps the solar radiation and outgoing thermal radiation heating up the earth's temperature which leads to 'global warming'.

Industrial Processes: Industrial processes emission can be classified into two main categories:

1. **Direct Emission:** Combustion of fuel at the site undergoes various chemical and physical changes to create heat energy and power which may accidently leak into the surrounding atmosphere. Iron, plastic, steel and cements industries which deal with the production of chemicals in huge amount on a daily basis contribute about $1/3^{rd}$ to the direct emission.

2. **Indirect Emission:** At a power plant when combustion of fossil fuel take place in order to produce electricity which are next consumed by various industries for operating their machinery and all comes under indirect emission.

Burning of Biomass: Burning forest products, forest fires, 'jhoom' cultivation collectively contribute about $1/5^{th}$ of the total carbon dioxide emissions at a global level. This gives rise to short-lived climate pollutant.

Short lived climate pollutants (SLCPs)

Short-lived climate pollutants (SLCPs) are actually agents with quite short lifespan in the atmosphere ranging between a few days to a few decades and give a warming influence on climate. Most harmful short-lived climate pollutants are black **carbon, methane, hydrofluoro carbons and tropospheric ozone,** which are the most important contributors to the increasing global greenhouse effect after CO_2. They are dangerous air pollutants that have varied harmful effects on human health, agricultural, atmosphere and eco-systems. HFCs are currently present in small quantity in the atmosphere yet their contribution to climate change has been observed to climb to as much as 19% of global CO_2 emissions by 2050.

Deforestation

Deforestation is new considered to be the 2nd largest anthropogenic source of Co_2 emission in the atmosphere combustion of fossil fuel being the 1st. with increasing population, demand for land, agricultural field, industrial spaces, and mining has also been on the rise. All these can be achieved smoothly only if forests are cleared. Thus, deforestation and forest degradation and major greenhouse gas contributor because burning forest biomass release huge amount of gasses along particulate matters.

Agricultural Practices

Reports reveal that agricultural alone contributes about 14% of the total greenhouse gas emission globally. Advancement of technology has eased agriculture processes to a great extent adverse effect on global warming. Using more synthetic fertilizers, toxic Harmful pesticides, and monoculture plantation has resulted in huge emission of CO_2 methane (Form paddy cultivation, digestion process in the cattle known as enteric fermentation) and nitrous oxide into the atmosphere.

Change in Land use Pattern

Like mentioned earlier, increase in population has led to an increase in demand of agricultural, industrial land to meet the increasing demand of this growth population. Activities like clearing of land slash and burn cultivation, deforestation has dangerously resulted in degrading forest and soil quality. Degraded soil quality with low organic compounds has reduced the efficiency of forest and soil to act as **'carbon sink'**. Recently it has been proved scientifically hoe huge concrete buildings in developed and developing countries capture the solar radiation during day time and emit greenhouse gasses at night which is popularly known as **'Urban heat island effect'**.

Impacts off climatic change

Environmental impact

More intense heat waves, changes in ocean currents, frequent cyclones, variation in precipitation, rise in sea level, coastal erosion, inundation, degradation of infrastructure acidification of soil and ocean, increasing wildlife, brake outs of disease

everything all together is playing a havoc on maintaining ecological balance and a stable biodiversity.

Agricultural Impact

Increases in temperature and CO_2 can prove to be extremely harmful in the long run. Changing atmospheric temperature directly and indirect effect nutrient levels in soil, soil moisture content, drought, depleting ground water table reducing water availability. More frequency occurring droughts and floods could pose threat for farmers and government. On the other hand, changing temperature also a change behavioural pattern in fishes and animals, which would not only damage the ecological balance but also affect the economy since many fishermen are dependent on fishing for their live hood.

Greenhouse effect

Accumulation of greenhouse gases in excess like water vapour, CO_2, O_3, CH_4 and cholorofluro carbon (CFC) is mainly responsible for distributing the balance of energy and therefore increasing the earth's temperature.

Global warming

The graduate rise in the earth's temperature due to excess emission of greenhouse gases in the atmosphere causes global warming. In 1824, Joseph Fourier discovered this greenhouse effect which was first experiment in 1858 by John Tyndall and lastly reported in 1869 by Svante Arrhenius. Global warming is the nothing but solely the consequence of greenhouse effect.

b. What are the different types of indicators of climatic changes? (5 marks)
காலநிலை மாற்றக் காரணிகளின் பல்வேறு வகைகள் யாவை?

Climate Change Indicators

1. Global temperatures as a climate change indicator
2. Atmospheric concentration of greenhouse gases: A tell-tale climate change indicator
3. Sea level rise:
4. Ocean Heat Content
5. Mass of the cryosphere or global extent:
6. Global Precipitation Patterns as a Climate Change Indicator
7. Heat Waves : Hallmark climate change indicator
8. Tropical Cyclones: A significant climate change indicator
9. Wildfires: Major influencer as a climate change indicator

16. Answer the following questions
பின்வரும் வினாக்களுக்கு விடையளி

a. Distinguish between a Hazard and a Disaster? Narrate various types of natural disasters, the coastal seashore areas are commonly prone to? (10 marks)

சீர்குலைவு மற்றும் பேரிடர் ஆகியவற்றை வேறுபடுத்துக? பொதுவாக கடலோர பகுதிகள் சந்திக்கும் பல்வேறு வகையான இயற்கை பேரிடர்களை விவரிக்க

A state of extreme (usually irremediable) ruin and misfortune is a disaster. It is also an event resulting in great loss and misfortune. It is an act that has disastrous consequences. But people say that hazard **plus** vulnerability make a disaster. Classification of disasters is in fact a classification of hazards. There are events, agents, which have the potentiality of doing harm, that is, hazards. Hazard is a source of danger.

It is an unknown and unpredictable phenomenon that causes an event to result one way rather than another. For example, it is an obstacle on a golf course. Even if these hazards materialize one has not a disaster if the community is not vulnerable; that is, if it has the capacity to respond or adjust. Hazards have the potential to cause disasters. Hazards cause disasters only when they meet with vulnerable people: when affecting (a) human life, (b) property, and (c) human activities.

What is the main vulnerability? It is poverty. Population growth is a major factor of vulnerability.

Natural disasters affecting coastal areas

i. Flood
ii. Tsunami
iii. Tropical Cyclone

b. What are the common challenges in any disaster management plan? (5 marks)
எந்தவொரு பேரிடர் மேலாண்மை திட்டத்திலும் உள்ள பொதுவான சவால்கள் யாவை?

According to the World Disaster Report 2010 published by the International Federation of Red Cross and Red Crescent Societies (IFRC), during the period 2000 to 2009, as many as 85 percent of the people affected by disasters belonged to the Asia Pacific region.

The National Policy on Disaster Management prepared by the National Disaster Management Authority (NDMA), Government of India and approved by the Cabinet in 2009 was formulated with the vision to build a safe and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation and response

Mandated by the enactment of the Disaster Management Act 2005, institutional mechanisms like the National Disaster Management Authority (NDMA) chaired by the Prime Minister of India at the national level, State Disaster Management Authorities (SDMAs) chaired by the Chief Ministers of the respective State Governments at the state level and District Disaster Management Authorities (DDMAs) chaired by the respective District Collectors and co-chaired by the Sabhapatis of the Zilla Parishads at the district level were established.

Issues and challenges in disaster management in India.

Fragile Institutions

In many cases, these institutions are not active and operational except a few honorable exceptions. Similarly, even though the Disaster Management Act 2005 stipulated the setting up of the Disaster Response Fund and the Disaster Mitigation Fund at national, state and district levels, only the National and State Disaster Response Funds have become operational till now

Weak Compliance of Policies

The follow up action expected from the nodal agencies in preparing Plans to address these aspects of strengthening preparedness, prevention, mitigation, emergency response and recovery efforts in these critical sectors remains to be initiated.

Systemic Inefficiencies Influencing Processes

The continuing increase in the damage and destruction of property, assets and public infrastructure makes it necessary to carry out random audits of such proposals in areas affected by disasters and to fix accountability for the financial loss on erring officials. This has become necessary to streamline the process of mainstreaming disaster risk reduction in development planning.

Need to Adopt Innovative Systems, Techniques and Technologies

Need to Strengthen Capacities of all Stakeholders

UNIT- III : Indian Economy – Current Economic Trends and impact of Global Economy of India

4 x 15 = 60

Answer all the questions. Answer not exceeding 250 words each

17. State the importance of service sector and industrial sector in the development of Tamil Nadu
தமிழக வளர்ச்சியில் சேவைத்துறை மற்றும் தொழிற்துறையின் முக்கியத்துவம் குறித்து எழுதுக

Industrial map of tamil nadu – location and different types of industries

Service sector – IT, ITES, Tourism, Medical tourism, Banking, Hospitality – their contribution

IMPORTANCE

- **employment generation**
- **regional development**
- **HRD – education and health**
- **Capital formation**

- **Increased per capita income**
- **Reduction of poverty**

18. Discuss the nature and importance of Public-Private Partnership (PPP) in health care and basic education in India.
இந்தியாவில் சுகாதாரம் மற்றும் அடிப்படைக் கல்வியில் பொது-தனியார் பங்களிப்பின் தன்மை மற்றும் முக்கியத்துவம் பற்றி விவாதிக்கவும்.

PPPs have been promoted as an important development financing mechanism in support of the Sustainable Development Goals (SDGs). SDG 17 outlines a vision for partnerships between governments, private sector and civil society, and delineates these as 'inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level.' (UN, 2015). The goal envisages these partnerships as an effort 'to mobilize, redirect and unlock the transformative power of trillions of dollars of private resources to deliver on sustainable development objectives' (UN, 2015). Under Goal 17, there is an explicit target on PPPs: 'Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships' (UN, 2015).

In the case of education, PPP has been proposed as an important strategy in the Eleventh Five Year Plan. Among many things, the Eleventh Plan has proposed the setting up of 6,000 new model schools in secondary education, affiliated to the Central Board of Secondary Education. Of these, 2,500 are to be under the PPP model. The intention is to set up these schools in the backward regions and remote areas where good schooling facilities do not exist, so that quality education is accessible in the backward regions as well.

According to the model finalised by the Planning Commission in consultation with the private sector, these schools will be set up by 2014 and will have the capacity to educate 65 lakh students, of whom 25 lakh will be from the deprived sections. Each school will have about 2,500 students, 1,000 of whom will be from deprived sections and charged a token fee. Fifty per cent of the 1,000 students will be from the Scheduled Castes, the Scheduled Tribes and the Other Backward Classes. They will be required to pay a monthly fee of Rs.25 each. The rest of the children, who will be from other deprived sections — non-income tax paying families — will be required to pay a fee of Rs.50 a month. The remaining costs of these students, estimated to be Rs.1,000 to Rs.1,200 a head per month, will be reimbursed by the Union government to the schools. It is estimated that the government will have to pay Rs.10,500 crore until 2017. The amount is likely to go up with escalating prices, in general, and increasing costs of education, in particular.

Over and above this, the schools may get access to relevant funds from the Centre and the State governments under different schemes. The schools will be free to admit anyone to the remaining 1,500 seats and charge any amount of fee.

Corporate companies with a minimum net worth of Rs.25 lakh are eligible to set up schools under this model. Each entity should deposit Rs.50 lakh with the government for the first school it proposes to set up, and Rs.25 lakh per additional school. Each can set up as many

as 25 schools. Non-profit companies with prior experience in education need to deposit Rs.25 lakh for each school. The schools will need to have the sort of infrastructure available in the best private schools.

The five areas where private sector contribution can prove very beneficial are:

1. **Infrastructure Development** - Development and strengthening of healthcare infrastructure that is evenly distributed geographically and at all levels of care

2. **Management and Operations** - Management and operation of healthcare facilities for technical efficiency, operational economy and quality

3. **Capacity Building and Training** - Capacity building for formal, informal and continuing education of professional, para-professional and ancillary staff engaged in the delivery of healthcare

4. **Financing Mechanism** - Creation of voluntary as well as mandated third-party financing mechanisms

5. **IT Infrastructure** - Establishment of national and regional IT backbones and health data repositories for ready access to clinical information

Indian Healthcare Sector

At over 8 percent GDP growth in recent years, India is one of the fastest growing economies in the world in terms of GDP and is expected to be the third largest economy by 2050. Healthcare services which are critical to the growth in economy have seen vast improvements over the past few years in India. Yet, India's total expenditure in healthcare as a percentage of GDP is still one of the lowest in the world. Though the public health services infrastructure is widespread, starting with sub-centers, primary health centers, community health centers, secondary level district hospitals, up to medical colleges, the quality of these are not uniform and subject to regional vagaries. The table below provides a structural snapshot of the Indian healthcare system

Health Infrastructure

Providing for quality healthcare services US is highly capital intensive where the cost of building a secondary care and tertiary care hospital could be as high as 25 lakhs and 40 lakhs per installed bed, respectively6 . The industry also requires highly skilled resources ranging from doctors to other medical support staff like nurses, lab technicians, pharmacists etc. India faces a severe resource shortage on both capital invested and manpower as shown. India suffers from an acute shortage of hospital beds with a bed ratio of 0.7 per 1,000 of population

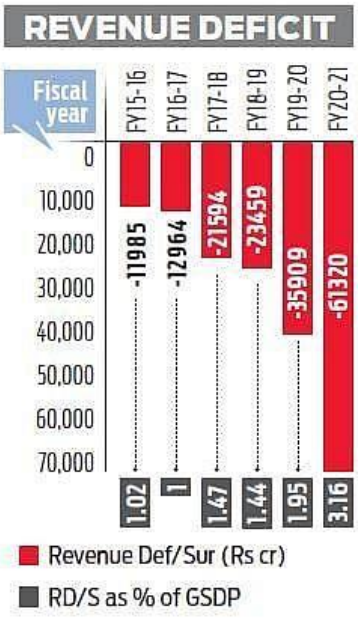
Contribution of Public and Private sector in Indian healthcare sector In India, the public sector accounts for only around 20 percent of the total healthcare expenditure, representing around 1 percent of the GDP – among the lowest in the world. India's public healthcare is under-funded and small in size to meet the current health needs of the country. Items like public health, hospitals, sanitation, etc. fall under the state government, while items having

wider ramification at the national level (food and drugs, family planning, medical education, and vital statistics) come under the central government. It is mostly through national health programmes that the central government pumps in around 15 percent of the total funds in the healthcare sector. The Government Health Projects are implemented through the states, with the Department of Health facilitating access to external aid. The contribution of private sector in healthcare expenditure in India is around 80 percent and is one of the highest in the world. Almost 94 percent of this amount (which covers both financing and provision aspects) comprises of outof-pocket expenditure on health. The remaining 6 percent is the expenditure on provision, which accounts for the private sector contribution to 60 percent of all in-patient care and 78 percent of total number of visits in outpatient care1 in India. In addition the private sector today provides 58 percent of the hospitals and 81 percent of the doctors in India . Adding to the challenge is also the changing demographics and lifestyles of the people. Dealing with these challenges requires the resources and expertise of public and private sector combined.

19. Discuss the salient features of Tamil Nadu Budget.
தமிழக வேளாண் நிதிநிலை அறிக்கையின் சிறப்பம்சங்கள் பற்றி விவாதி

TAMIL NADU BUDGET SPECIAL

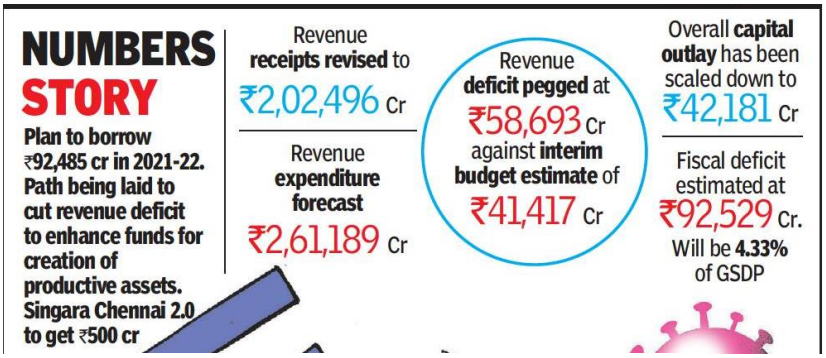
- Tamil Nadu Finance Minister P.T.R. Palanivel Thiaga Rajan - presented the government's first paperless budget for the year 2021-22 in Assembly on August 13.
- As per the revised budget estimates, the revenue deficit for 2021-22 is expected to go up to Rs.58,692.68 crore from the interim budget estimates of Rs.41,417.30 crore
- The total revenue receipt estimates range from Rs.2,18,991.96 crore in the Interim Budget Estimates to Rs.2,02,495.89 crore in the Revised Budget Estimates 2021-22.

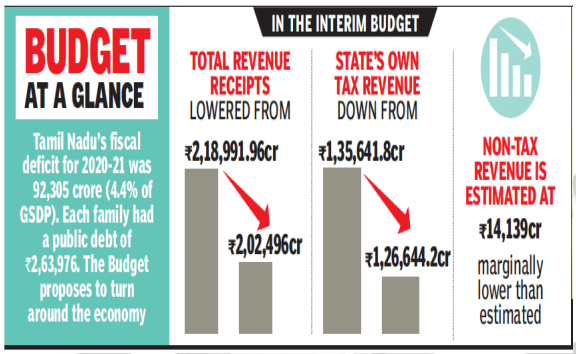


TOTAL DEBT

Fiscal year	Total outstanding debt (Rs cr)	Debt % of GSDP
FY15-16	211066	17.94
FY16-17	271364.09	20.83
FY17-18	310429.19	21.19
FY18-19	345751.68	21.21
FY19-20	397024.99	21.51
FY20-21	485502.55	24.98

- ✓ The State's Own Tax Revenue estimates in the Revised Budget Estimates 2021-22 are expected to be Rs.1,26,644.15 crore, as against the Interim Budget Estimates of Rs.1,35,641.78 crore

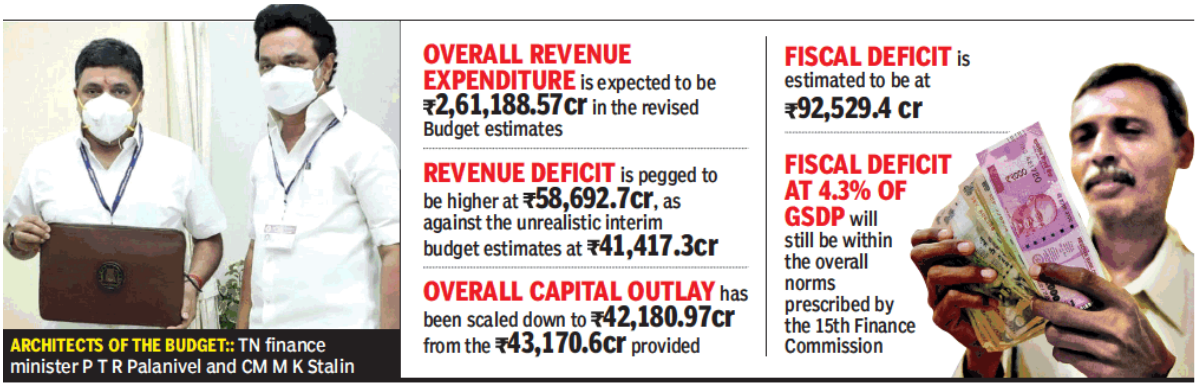




- ✓ Tamil Nadu presently bears an overall debt burden of Rs 5,70,189 crore and public debt of Rs.2,63,976 per family, as per the White Paper released by the finance minister on August 9

- ✓ Power body TANGEDCO was losing Rs 2.60 for every unit consumed and the transport sector was bleeding Rs 59.15 for every kilometre run, as per the White Paper

- ✓ The most significant finding in the White Paper is the deterioration of the tax-GSDP ratio of the state from 8.48% in 2006-07 to just 5.46% in 2020-21



- ✓ Tamil Nadu has already borrowed Rs.36,000 crore so far in 2021-22, and is the top borrower among the States.

Highlights of the Budget

- ✓ Launch of a Green Tamil Nadu Mission to increase the total areas under forest and tree cover to 33% of the land areas in the state.

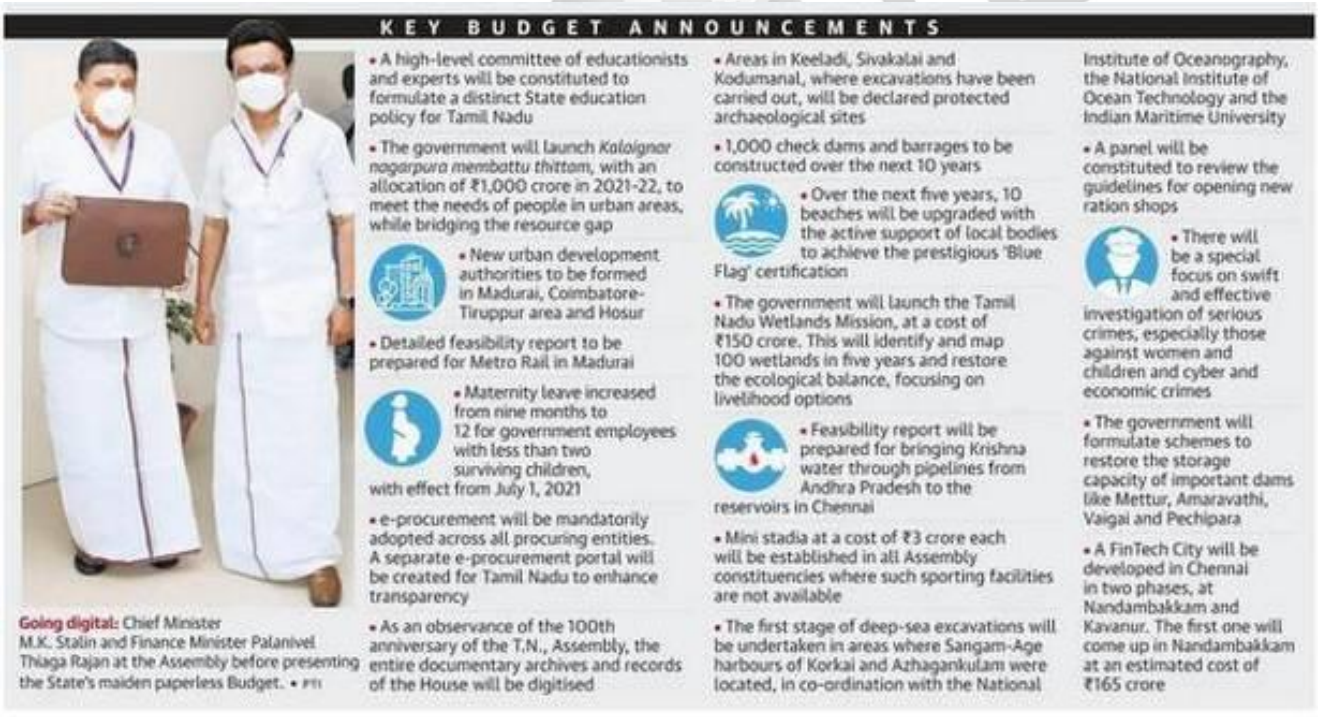
- ✓ Launch of Tamil Nadu Climate Change Mission to focus on climate change adaptation and mitigation activities at a budget of Rs.500 crore.

- ✓ The Tamil Nadu Pollution Control Board will establish continuous ambient air quality monitoring 27 stations in all district headquarters and in towns with a population of more than one lakh. India‟s first Integrated Environment Monitoring Studio will be established for forecasting air quality on a real time basis with an early warning system.

- ✓ To reduce travel time, Tamil Nadu plans to expand 8,900km of state highways under a new scheme named 'Chief Minister's Road Development Programme'.

- ✓ Waiver of loans to the tune of Rs.2,756 crore due from self-help groups to the co-operative credit societies.

- ✓ Petrol price to become cheaper in the state by Rs.3 per litre, causing a loss of Rs. 1,160 crore to the government's exchequer



Going digital: Chief Minister M.K. Stalin and Finance Minister Palanivel Thiaga Rajan at the Assembly before presenting the State's maiden paperless Budget. • PTI

- ✓ Chief Minister's Insurance Scheme will be implemented from this year at a budget of Rs.1,046 crore
- ✓ Announcement of a subsidy of Rs. 703 crore for free bus travel for women
- ✓ Extension of maternity leave period for government employees to 12 months from 9 months. The scheme will be restricted to women with less than two surviving children with effect from July 1, 2021

- ✓ A fintech city will come up in Chennai, which will be developed in two phases at Nandambakkam and Kavanur

- ✓ Allocation of Rs 32,599 crore towards school education, which is Rs 1,582 crore lesser than the last year.
- ✓ Allocation of Rs 5,369 crore to higher education, which is Rs 316 crore more than the last year.
- ✓ State highways department got a bumper allocation of Rs 17,899 crore.
- ✓ Construction of bypass roads in 59 municipalities in line with 'TN Vision 2023', which aims at providing bypass roads for all 129 municipalities
- ✓ The state has sanctioned adequate funds to continue four key highway projects — Tamil Nadu Road Sector Project Phase II, Comprehensive Road Infrastructure Development Programme, Chennai-Kanyakumari Industrial Corridor, and Chennai Peripheral Ring Road Project at Rs.14,282 crore
- ✓ A TN Siddha University, a proposal mooted by Kalaignar, will be established with an initial allocation of Rs 2 crore
- ✓ The ancient healing wisdom of *Siddhars* will be promoted by establishing a Siddha medical college by the Arulmigu Baladhandayuthapani Swamy temple in Palani
- ✓ An expert panel to be constituted to formulate a distinct State education policy.
- ✓ A committee chaired by Dr.N.Sundaradevan, I.A.S. (Retd) has been established to study the financial, infrastructural and other issues faced by MSMEs in Tamil Nadu and suggest measures to enable them to thrive.
- ✓ Tidel parks will now be established in Villupuram, Vellore, Chidambaram, Tiruppur and Thoothukudi too.
- ✓ New Sipcot (State Industries Promotion Corporation of Tamil Nadu) complexes will be established in Thiruvannamalai, Dharmapuri, Tirunelveli, Virudhunagar, Sivagangai, Villupuram, Namakkal, Theni and Nagapattinam to be spread across 4,000 acres
- ✓ An industrial park will be established in Thoothukudi district with investment of Rs 1,000 crore in an area of 1100 acre
- ✓ An e-vehicle park to be set up at Maanallur in Tiruvallur, a medical devices park at Oragadam, a leather products park at Panapakkam in Ranipet, a dedicated furniture park in Tuticorin and three food parks at Manapparai, Theni and Tindivanam
- ✓ Setting up of five mega clusters in pharmaceuticals, petrochemicals, precision manufacturing, defence and aerospace, and smart mobility sectors
- ✓ A defence industrial park is also planned in Coimbatore on about 500 acres with an investment of Rs.3,000 crore
- ✓ 15 skill development centres will be set up in ITIs and a new skill centre will come up in partnership with NLC India at Neyveli.
- ✓ Kalaignar's 'Namaku Naame' public participation scheme to expand green cover will be implemented again at a cost of Rs 100 crore. Launched in 1997-98 by CM Karunanidhi, the scheme was renamed twice when J Jayalalithaa was voted to power in 2001 and 2011, while the original name was restored by Kalaignar in 2006
- ✓ Relaunch of 'Anaithu Grama Anna Marumalarchi Thittam' with an outlay of Rs.1,200 crore
- ✓ 'Kalaignar M Karunanidhi Semmozhi Tamizh award' will be given along with Rs 10 lakh cash prize every year in Central Classic Tamil institute. The award is set to be awarded every year on June 3. The award was last presented in 2010. A budget of Rs. 300 crore allotted for the award
- ✓ The government would revive the Central Institute of Classical Tamil in Chennai

- ✓ The state increased the allotment for the health sector by nearly 20% from Rs.15,863.4 in 2020-21 to Rs.18,933.2 in the revised Budget for 2021-22
- ✓ An outlay of Rs.257.2 crore has been set aside for 'Makklai Thedi Maruthuvam'. Under this programme, healthcare workers will screen people for diabetes and hypertension, schedule doctor visits, give them drugs at their doorsteps and offer home dialysis, palliative care and physiotherapy
- ✓ A museum to be established near the archaeology site at Keezhadi.
- ✓ The areas in Keezhadi, Sivakalai and Kodumanal where excavations have been carried out to be declared as protected archaeological sites
- ✓ The first stage of deep-sea excavation is to be undertaken in areas where Sangam age harbours of Korkai and Azhagankulam were located in coordination with the National Institute of Oceanography, National Institute of Ocean Technology and Indian Maritime University.
- ✓ In the revised budget estimates, an enhanced amount of Rs 4,807.56 crore is provided for social security pensions,
- ✓ In a first, the state plans to set up an Unmanned Aerial Vehicles Corporation in partnership with Madras Institute of Technology, Anna University
- ✓ Use of 'technology' to undertake surveys of the state using Differential and Global Positioning System (DGPS) to protect government lands, and location of new fire stations will be based on a scientific mapping exercise
- ✓ An effective Samadhan scheme will be launched to clear the pending dues of Rs.28,000 crore under Tamil Nadu value added tax and other legacy legislations.
- ✓ Establishing mini sports stadia at a cost of Rs.3 crore each in all assembly constituencies that currently don't have sports facilities.

20. Give the present state of economic development of India. Explain that 'economic growth and human development must go together to make it more inclusive'

இந்தியாவின் தற்போதைய பொருளாதார முன்னேற்றம் பற்றி எழுதுக. 'பொருளாதார வளர்ச்சியும் மனித வளர்ச்சியும் ஒருங்கிணைந்து அதை மேலும் உள்ளடக்கியதாக மாற்ற வேண்டும்' என்பதையும் விளக்குக

Economic Growth Vs Economic Development

1. State of Development

Generally speaking, economic development refers to the problems of underdeveloped countries and economic growth to those of developed countries.

2. Nature and Level of Change

Development is a discontinuous and spontaneous change while growth is a gradual and steady change in the long run.

3. Scope of Change

Growth simply means more output. But development refers to efficiency in production i.e. output per unit of input. It also implies changes in composition of output and in allocation of resources, reduction of poverty, inequality and unemployment.

4. Extent of change

Economic development (wider concept than economic growth) is taken to mean growth plus structural change.

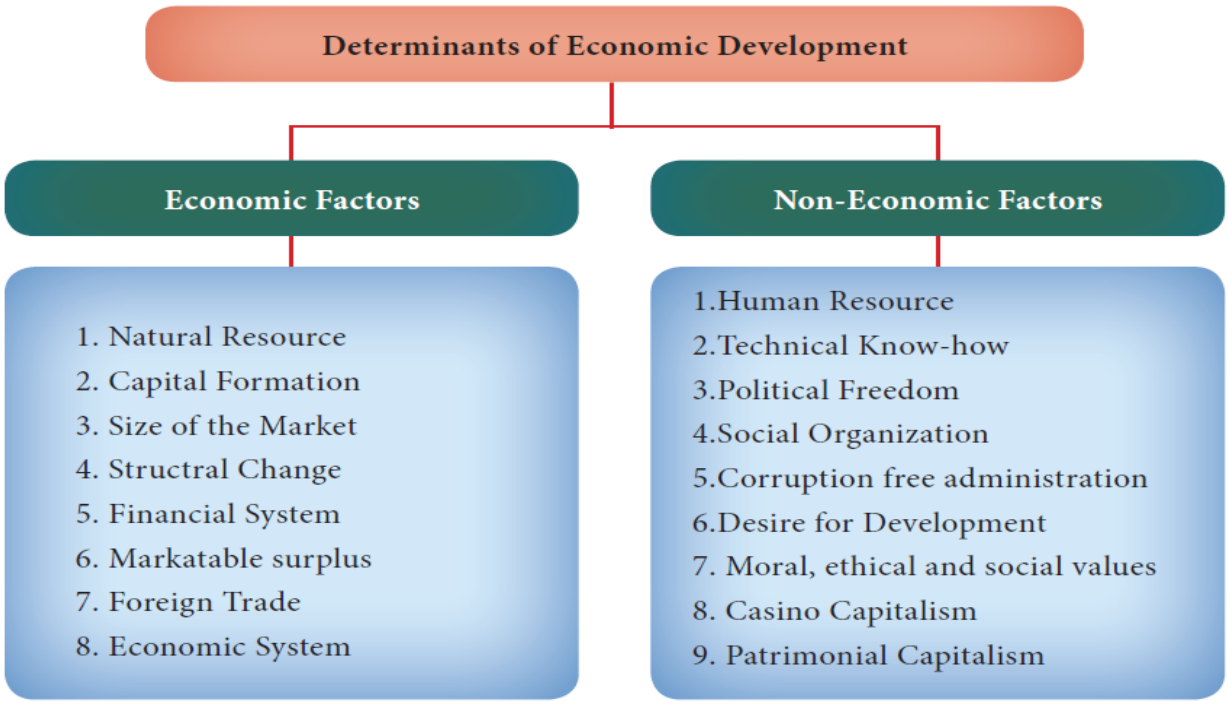
Differences between Economic Growth and Economic Development

Economic Growth	Economic Development
Deals with the problems of Developed countries	Deals with the problems of UDCs
Change is gradual and steady	Change is discontinuous and spontaneous
Means more output	Means not only more output but also its composition
Concerns Quantitative aspects i.e. increase in per capita income	Quantitative as well as Qualitative
Narrow	Wider concept Development = Growth + Change

Determinants of Economic Development

Economic development is not determined by any single factor. Economic development depends on Economic, Social, Political and Religious factors.

Economic and Non-Economic Factors



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