

www.vishnuias.com



MAY

24.05.2021

CURRENT AFFAIRS

A MAGAZINE FOR CIVIL SERVICES PREPARATION

JOIN OUR TELEGRAM: <https://t.me/vishnuiasmentor>

**Articles of the day
THE HINDU & INDIAN EXPRESS**

UPSC

General Studies

Test Series

**Online &
Offline
classes**

**One-Stop
Solution**

**Free daily
materials**

THE HINDU

GS 1 : Heritage and culture ,Geography of the World and Society

1. Very severe cyclone Yaas to hit north Odisha coast

Context:

Developments with respect to Cyclone Yaas in the Bay of Bengal.

Background:

- Given India's location in the North Indian Ocean, it continues to remain vulnerable to tropical cyclones both on the east and west coast.
- The **North Indian Ocean cyclone season** occurs between April and November, with peaks in **late April to May and October to November**.
- The current pre monsoon cyclonic season of April-May had the cyclone **Tauktae** make landfall on the western coast of India.

Details:

- A **low pressure area** has formed over the east-central Bay of Bengal and the adjoining north Andaman Sea.
- As per the India Meteorological Department (IMD), this low pressure area is very likely to concentrate into a **depression** and further intensify into a **cyclonic storm** and **very severe cyclonic storm** in the days to come.
- The cyclone is very likely to move north-north-westwards and make **landfall on the Odisha and West Bengal coasts**.

Measures being taken:

- Odisha and West Bengal are reviewing the **disaster management preparedness for the impending Yaas cyclone** and taking the following measures to mitigate the impact.
 - Fishermen have been advised to return from the seas
 - Early evacuation from coastal & riverine areas to rescue shelters including cyclone & flood shelters are being undertaken
 - Deployment of State and National Disaster Response Force is taking place
 - Stocking and preparing for the relief and rehabilitation operations is being ensured
 - 24x7 control rooms have been set up for assistance to the citizens

GS 2 : Polity, Governance, International Relations

2. Minor 'face-off' in Galwan Valley

Context:

A minor face-off between Indian and Chinese troops in the no-patrolling zone at Galwan Valley in eastern Ladakh.

Details:

- The face-off is believed to have happened when both the Indian and Chinese patrols reached the no-patrolling zones (decided in 2020) at the same time. However, no clash occurred and the two sides disengaged.

Background:

- Since April 2020, Chinese troops blocked Indian troops from reaching at least 10 patrolling points, running from the Depsang plains in the north to Pangong Tso (lake) in the south in eastern Ladakh.
- Subsequently, India and China reached an agreement for disengagement in the Pangong Lake area to cease their forward deployments in a phased, coordinated and verified manner, which would substantially restore the pre-April 2020 status.
- India and China have held 11 rounds of talks so far after the clashes.
- While the troops partially disengaged on the north and south banks of Pangong Tso, phased disengagement is yet to take place at the other friction areas in eastern Ladakh – Gogra, Hot Springs, Depsang and Demchok.

3. No access to images of our nuclear sites: Iran

Context:

Iran's Parliament speaker said that international inspectors may no longer access surveillance images of the Islamic Republic's nuclear sites.

Details:

- The latest development has led to **escalating tensions amid diplomatic efforts in Vienna to save the Iran nuclear accord** with world powers.
- It underscored **more hurdles for the U.S. and others to reach terms with Iran.**
- The Islamic Republic is **already enriching and stockpiling uranium at levels far beyond those allowed by its 2015 nuclear deal – Joint Comprehensive Plan of Action.**

Note:

- **Iran’s parliament** in December 2020 **approved a bill** that would **suspend part of U.N. inspections of its nuclear facilities** if European signatories did not provide relief from oil and banking sanctions by February 2021.
- The IAEA had struck a three-month deal with Iran to have it hold the surveillance images.
- However, Iran had threatened to delete them later if no deal had been reached.

GS 3 : Economy, Science and Technology, Environment

4. Guarantor beware

- This article evaluates the recent Supreme Court judgement allowing financial creditors to initiate insolvency proceedings against personal guarantors of stressed corporate entities under the Indian Bankruptcy and Insolvency Code (IBC).

Background:

- The central government had released a notification in November 2019 allowing **lenders to initiate insolvency proceedings against personal guarantors along with the stressed corporate entities** for whom they gave guarantee.
- This was challenged before several High Courts by a group of petitioners, mostly personal guarantors to stressed companies.
- Given the multiple appeals in different High Courts, the Supreme Court had transferred the petitions from the High Courts to itself on a request from the government.

Salient aspects of the judgement:

- The bench noted an **“intrinsic connection”** between personal guarantors and their corporate debtors and hence the need to **hold the personal guarantors accountable too.**
 - The personal guarantors are usually promoters of big business houses.
- The Court also noted that the intimate connection between the personal guarantors and their corporate debtors necessitates **a common forum for adjudication under the IBC.**
 - Section 60(2) of the Code requires the bankruptcy proceedings of corporate debtors and their personal guarantors to be held before a common forum – the **National Company Law Tribunal (NCLT).**
- The Court has clarified that the discharge of a principal borrower from the debt by operation of law, or due to liquidation or insolvency proceeding, does not absolve the guarantor of his or her liability thus implying that the **liability of the guarantor is not co-extensive with that of the corporate debtor.**

Significance of the judgement:

More effective outcomes:

- Involving the personal guarantors in the liquidation process will also facilitate the Committee of Creditors to **frame realistic resolution or liquidation plans**, keeping in mind the prospect of realising some part of the creditors’ dues from personal guarantors.
- A common forum for adjudication will help the NCLT have a better overview of the case and hence will aid in **more effective verdicts at the appellate stage.**
- The judgement is expected to **boost banks’ recovery efforts involving bad loans.** The inclusion of the guarantors in insolvency proceedings would push the guarantors to arrange for the payment of the debt to the creditor bank in order to obtain a quick discharge from insolvency proceedings.

Rectifying a loophole in the IBC framework:

- The personal guarantors and related parties in some insolvency cases had been able to escape insolvency proceedings against them despite indications of **collusion between the borrowers and the guarantors.** This judgement will now help rectify such a loophole in the IBC.

5. Recalibrate growth, reprioritise expenditures

Context:

- The article co-authored by C. Rangarajan, former Chairman, Economic Advisory Council to the Prime Minister and a former Governor, Reserve Bank of India analyzes the **fiscal impact of the second wave of the pandemic** and suggests measures needed in this direction.

Fiscal impact of the pandemic:

- The second wave of COVID-19 and the lockdowns in several states have been eroding economic activities in India. This would have the following implications.

Lower economic growth:

- The **GDP growth rate for both nominal as well as real GDP is going to be substantially lower** than that projected earlier.

Lowering of tax and non-tax revenue:

- The slow economic growth will lead to a lowering of tax and non-tax revenues.
 - The author estimates a shortfall of about Rs. 0.6 lakh crore in the Centre's net tax revenues.
- Given the uncertainty and reluctance on the part of the private players to invest, the budgeted magnitudes for non-tax revenues and non-debt capital receipts premised on implementing the **monetisation and disinvestment programme** are most likely to be unmet.
 - The author estimates a shortfall of Rs. 1.5-lakh crore in non-tax revenues and non-debt capital receipts. Hence the total shortfall on the receipts side for the government may be about Rs. 2.1-lakh crore.

Increase in fiscal deficit:

- The most likely **change in the budgeted nominal GDP growth (lower)** and the **shortfall in the receipts** from tax, non-tax and non-debt sources will invariably push the fiscal deficit beyond the projected budget estimate of 6.76% of GDP.
 - The author estimates a significant slippage in fiscal deficit which may be close to 7.7% of GDP in 2021-22 if the total expenditures are kept at the budgeted levels.

Recommendations:

- The fiscal projections of the Centre's 2021-22 Budget require recalibration given the inevitable economic impact of the pandemic. Such a revised estimate should project more realistic values to stimulate requisite measures.
- Despite the inevitable chances of fiscal slippage, the **government needs to ensure that the total expenditures remain at the budgeted level**, given the inevitability of public expenditure in supporting the economy in these challenging times.
- There is a need for **reprioritising government expenditure**.
 - The allocation for the health sector should be increased substantially.
 - Strong support is needed for the vulnerable groups of the society including migrant labour and the rural and urban unemployed population.
 - Given the fact that universal vaccination at pace is key to minimising economic damage, the central government should invest accordingly in vaccine purchase and distribution among the states.

Additional information:

Economic terminology:

Real GDP:

- The real GDP is the total value of all of the final goods and services that an economy produces during a given year, accounting for inflation. It is calculated using the prices of a selected base year.

Nominal GDP:

- The nominal GDP is the value of all the final goods and services that an economy produced during a given year. It is calculated by using the prices that are current in the year in which the output is produced.

Tax buoyancy:

- Tax buoyancy refers to the responsiveness of tax revenue growth to changes in GDP.
- Tax buoyancy is an indicator to measure the efficiency and responsiveness of revenue mobilization in response to growth in the gross domestic product or national income. A tax is said to be buoyant if the tax revenues increase more than proportionately in response to a rise in national income or output.
- When a tax is buoyant, its revenue increases without increasing the tax rate.

6. The many benefits of an eco tax

Background:

Financial impact of the pandemic:

- The second wave of the pandemic has induced lockdowns in several states and brought **economic activity to a standstill**. This will lead to a lower than estimated economic growth and a subsequent **decline in tax revenue**. This will lead to a **larger than projected fiscal deficit in the current year**.
- The fiscal deficit for FY 2020-21 (revised estimates) is projected to be 9.5% of the GDP; for 2021-22, it is pegged at 6.8%.
- The continued focus on fiscal discipline is bound to impact public expenditure which is vital for economic revival and also impact expenditure into the ailing health sector which is crucial in the fight against the pandemic.

Consequences of low public expenditure in the health sector:

- Sustained health financing in India has always been a challenge.
- The low public expenditure into the health sector results in the **lack of adequate and quality public health care facilities**, thus leading to the rise of private health care centres. Such a scenario invariably leads to a **high out of pocket expenditure** for health needs.
 - The World Health Organization (WHO) data notes that 17.33% of the population in India made out-of-pocket payments on health exceeding 10% of the total household expenditure or income in 2011.
 - This is higher than the global average of 12.67% and also the average for the Southeast Asian region which stands at 16%.
 - Similarly, 3.9% of the population in India made more than 25% of out-of-pocket payments on health.
 - The Economic Survey of India 2019-20 notes that an increase in public spending from the current level of 1% to **5-3% of GDP, as envisaged in the National Health Policy of 2017**, can decrease out-of-pocket expenditure from 65% to 30%.
- The high out of pocket expenditure for health pushes many into **poverty**. Also since a lower proportion of disposable income is available for other essentials like food and education, this would also have a long term impact on the nutritional security and development of children of such families.

Details:

- Given the critical need for higher public expenditure in the health sector and the fiscal strain imposed by the pandemic, it becomes important to look for **alternate sources of health financing in India**.
- The COVID-19 pandemic has also forced a **rethink on climate change and the need for environmental preservation**.
- In this direction, the article evaluates possible fiscal reforms which will not only help manage the environment in a sustainable manner but also help generate enough revenues to fund its public expenditure programmes in critical areas like health.
- The article evaluates the potential of environmental tax in this direction.

Environmental regulation:

- Environment regulation may take one of the following forms:
 - **Command and control approach** wherein the government places strict regulations on pollutant emissions and there are fines on non-compliance.
 - **Economic planning/urban planning approach** involves inculcating sustainable management practices in policymaking.
 - **Environmental tax (eco tax)/subsidies approach** involves either taxing the polluters to disincentivize the use of high carbon footprint processes or products and also providing subsidies to encourage the adoption of green technology.
 - **Cap and trade approach** involves the government setting limits for emissions and the establishment of carbon trade markets.
- India currently focuses majorly on the command-and-control approach in tackling pollution.

Eco tax:

- Environmental tax reforms would mainly involve the following three activities:
 - Eliminating existing subsidies and taxes that have a harmful impact on the environment.
 - **Restructuring existing taxes in an environmentally supportive manner.**
 - Initiating new environmental taxes.
- For example, in the energy sector, the following reforms may qualify as environmental fiscal reforms.
 - Correcting the price differential between diesel and petrol.
 - Differential taxation on vehicles in the transport sector based on fuel efficiency and GPS-based congestion charges.

- Taxes on thermal-based powers and tax rebates for renewable energy producers.
- Tax on high carbon footprint industries.

Significance:

- The implementation of an environmental tax in India will have the following three broad benefits.

Environmental:

- Environmental taxes help internalise the negative environmental externalities in the overall framework and thus incentivize greener products and processes and disincentivize polluting processes and products. This will **reduce environmental pollution, encourage environmental preservation** and adoption of an environmentally sustainable approach.

Fiscal:

- Tax revenues can be generated through eco taxes by designing them as revenue augmenting.
- The additional revenue so generated can be used for the provision of environmental public goods or directed towards the overall revenue pool to be used in critical social sectors like health. This will **help developing countries like India, constrained by limited fiscal space** to address critical environmental health issues.

Poverty reduction:

- The augmented revenue from eco tax can **finance research and the development** of new technologies thus encouraging the rise of new sunrise sectors and new jobs.
- The augmented revenue will also help **finance social sectors** which will aid in the development process and help reduce poverty.

Concerns:

- Environmental regulations may have significant costs on the private sector in the form of the high cost of compliance. This could lead to a **possible increase in the prices of goods and services**. This may disincentivize demand and thus hamper the economic growth of the nation.
 - Notably, there is no evidence of green taxes leading to a deceleration of the economy. Most countries' experiences suggest a negligible impact on the GDP.

Recommendations:

- It is the right time for India to **adopt environmental fiscal reforms** as it will not only help reduce environmental pollution but also generate resources for financing the health sector.
- The architecture of the **eco tax framework should be credible, transparent and predictable.**
 - The eco tax rate should be commensurate to the marginal social cost arising from the negative externalities associated with the production, consumption or disposal of goods and services. This should consider both short and long term impacts both on humans and other living beings.
- The environmental taxes must be **integrated with the Goods and Services Tax framework.**

7. Cairn Energy verdict 'highly flawed': Ministry

Context:

The Union Government is defending its case against an **international arbitration** order asking it to refund \$1.2 billion to Cairn Energy over a **retrospective tax dispute.**

Details:

- Cairn Energy filed a lawsuit in a U.S. court against Air India, seeking to make the national carrier **liable to pay the damages awarded to it**, but which are **not yet honoured by the Indian government.**
- Earlier, the **Permanent Court of Arbitration (PCA) at The Hague** ruled in **favour of Cairn Energy PLC** of the U.K and **awarded \$1.2 billion in damages against India** in the **retrospective taxation case.**

India's stand:

- The Indian government has termed the tribunal's December 2020 decision highly flawed.
- The government has raised several arguments that call for **setting aside the award including** but not limited to **the arbitral tribunal improperly exercising jurisdiction over a national tax dispute that India never offered and/or agreed to arbitrate.**
- It argues that the **award improperly ratifies Cairn's scheme to achieve Double Non-Taxation**, which was **designed to avoid paying taxes anywhere**

in the world, a significant public policy concern for governments worldwide.

8. 'Tuber Man' wins India Biodiversity Awards

What's in News?

Called the '**Tuber Man of Kerala**', Shaji N.M has been awarded the **India Biodiversity Award 2021**.

- He has been awarded in the **individual category of 'Conservation of domesticated species'**.

India Biodiversity Award:

- India Biodiversity Awards are given by the **Ministry of Environment, Forests and Climate Change** in association with UNDP.
- The first round of Awards was **launched in 2012 during India's Presidency of the Eleventh Meeting of Conference of Parties to the Convention on Biological Diversity**.
- The **award selection process** is conducted in partnership with the **National Biodiversity Authority of India**.
- The awards are announced on **22nd May on the occasion of the International Day for Biological Diversity**.
- Awards are given in the following **categories**.
 1. Conservation of Wild and Domesticated Species
 2. Sustainable Use of Biological Resources
 3. Replicable Mechanisms for Access and Benefit Sharing
 4. Best Biodiversity Management Committees

GS 2 : Polity, Governance, International Relations

1. Kharif Strategy for Oilseeds

Why in News

The Ministry of Agriculture & Farmers Welfare has formulated Kharif Strategy 2021 to achieve self-sufficiency in edible oils.

Kharif Season

- Crops are sown from June to July and Harvesting is done in between September-October.
- Crops are: Rice, maize, jowar, bajra, tur, moong, urad, cotton, jute, groundnut, soyabean etc.
- States are: Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra.

Key Points

- **About the Kharif Strategy 2021:**
 - An ambitious plan for the **free distribution of high yielding varieties of seeds** to the farmers for the Kharif season 2021 in the form of mini-kits.
 - Strategy for both area and productivity enhancement has been formulated for **soybean and groundnut** under the **National Food Security Mission (Oil Seeds and Oil Palm)**.
 - It will bring an additional 6.37 lakh hectare area under oilseeds and is likely to produce 120.26 lakh quintals of oilseeds and edible oil amounting to 24.36 lakh quintals.
- **Basic Information Related to Oilseeds:**
 - Oilseed crops are the **second most important determinant of the agricultural economy**, next only to cereals within the segment of field crops.
 - The self-sufficiency in oilseeds attained through the “**Yellow Revolution**” during early 1990’s, could not be sustained beyond a short period.

- Oilseed crops are **primarily grown for the purpose of obtaining vegetable oils from them**. Oil content in them varies from 20% in soybeans to 40% in sunflowers and canola (rapeseed).
- India is able to produce a huge amount of oilseeds because of the favourable environmental conditions.
 - Castor seed, sesamum, rapeseed, groundnut, mustard, soyabean, linseed, niger seed, sunflower and safflower are **some of the important oilseeds India is known to produce**.
- Despite **being the fifth largest oilseed crop producing country** in the world, India is also **one of the largest importers of vegetable oils** today.
 - India buys more than two-thirds of its total edible oil imports as **palm oil**.
- India has a marked position in the world in the production of a large amount of oilseeds.
 - After China, India is the **second largest producer of groundnut** and is **third in position in the production of Rapeseed** after China and Canada.
- **Major Oilseeds Producing Areas in India are:** Rajasthan, Gujarat, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra, Karnataka, Andhra Pradesh.
- **National Food Security Mission (Oil Seeds and Oil Palm):**
 - **Objective:**
 - To augment the availability of edible oils and reduce the import of edible oils by increasing the production and productivity of oilseeds and oil palm.
 - **Merger of NMOOP under NFSM:**
 - **National Mission on Oilseeds & Oil Palm (NMOOP)** was **launched in 2014-15** and continued upto 2017-18.
 - **From 2018-19 onwards, the NMOOP is being implemented under NFSM** as NFSM-Oilseeds & Oil palm comprising the **sub components NFSM- Oilseeds, NFSM-Oil Palm and NFSM-Tree Borne Oilseeds (TBOs)**.
 - **Multi-Pronged Strategy:**
 - Increasing **Seed Replacement Ratio (SRR)** with focus on varietal replacement.
 - **SRR** is the percentage of area sown out of total area of crop planted in the season by using certified/quality seeds other than the farm saved seed.
 - **Productivity improvement** by adoption of proven and **climatic resilient technologies** like water saving devices (sprinklers/rain gun), zero tillage, **inter-cropping**, relay cropping, strategic application of micronutrient and soil ameliorants.

- **Area expansion** through diversification of low yielding food grains.
- **Capacity building.**
- **Supporting cluster demonstrations** for the adoption of good agricultural practices.
- **Creation of 36 oilseed hubs** with a focus on regional approach for larger availability of quality seeds.
- **Post-harvest management** at farm and village level.
- Formation of **Farmer Producer Organisations.**
- **Funding Pattern:**
 - The cost sharing pattern between Central and State Governments, is in the **ratio of 60:40 for general category of States and 90:10 for North Eastern and Himalayan States.**
 - For few interventions, like purchase of breeder seeds by both State and Central seed producing agencies, supply of seed mini-kits to the farmers, **100% funding is provided by Government of India.**

2. COP 28

Why in News

Recently, the **United Arab Emirates** announced an **offer to host** the **28th session of Conference of Parties (COP 28)** to the **UNFCCC** in **Abu Dhabi in 2023.**

- **COP 26** was **postponed** in **2020** and will take place in **Glasgow, UK** in November 2021.

Key Points

- **About UNFCCC:**
 - The **United Nations Framework Convention on Climate Change (UNFCCC)**, signed in **1992** at the **United Nations Conference on Environment and Development** also known as the **Earth Summit**, the **Rio Summit** or the **Rio Conference.**
 - **India** is among the select few countries to have **hosted the COP of all three Rio conventions on climate change (UNFCCC), biodiversity (Convention on Biological Diversity) and land (United Nations Convention to Combat Desertification).**
 - The UNFCCC entered into force on **21st March 1994**, and has been **ratified by 197 countries.**

- It is the **parent treaty of the 2015 Paris Agreement**. It is also the **parent treaty of the 1997 Kyoto Protocol**.
- The **UNFCCC secretariat** (UN Climate Change) is the **United Nations entity** tasked with supporting the global response to the threat of climate change. It is **located in Bonn, Germany**.
- **Objective:**
 - To achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous repercussions within a time frame so as to allow ecosystems to adapt naturally and enable sustainable development.
- **The Conference of the Parties (COP):**
 - COP is the **apex decision-making authority** of UNFCCC.
 - The COP **meets every year**, unless the Parties decide otherwise. The first COP meeting was held in Berlin, Germany in March, 1995.
 - The COP **meets in Bonn**, the seat of the secretariat, unless a Party offers to host the session.
 - The office of the COP President normally **rotates among the five United Nations regional groups** which are - Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe and Western Europe and Others.
 - The President is usually the environment minister of his or her home country. S/he is elected by acclamation immediately after the opening of a COP session.

GS 3 :Economy, Science and Technology,Environment

3. Competition Commission Of India

Why in News

Recently the **12th Annual Day** of the **Competition Commission of India (CCI)** was observed on **20th May**.

Key Points

- **About:**
 - **Statutory Body:**
 - Competition Commission of India is a **statutory body** responsible for enforcing the objectives of the **Competition Act, 2002**.

- CCI was established by the **Central Government** with effect from **14th October 2003**, but it became fully functional on **20th May, 2009**.
- **Composition:**
 - **A Chairperson and 6 Members** appointed by the **Central Government**.
- **Formation of CCI:**
 - The CCI was established under the provisions of the **Competition act 2002:**
 - **The Competition Act, 2007**, was enacted after amending **Competition Act, 2002**, that led to the establishment of the CCI and the **Competition Appellate Tribunal**.
 - The government replaced the **Competition Appellate Tribunal (COMPAT)** with the **National Company Law Appellate Tribunal (NCLAT)** in 2017.
- **Functions and Role of CCI:**
 - **To eliminate practices** having adverse effects on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.
 - The Competition Commission of India takes the **following measures** to achieve its objectives:
 - **Consumer welfare** to make the markets work for the benefit and welfare of consumers.
 - **Ensure fair and healthy competition** in economic activities in the country for faster and inclusive growth and development of the economy.
 - **Implement competition policies** with an aim to effectuate the most efficient utilization of economic resources.
 - **Develop and nurture effective relations** and interactions with sectoral regulators to ensure smooth alignment of sectoral regulatory laws in tandem with the competition law.
 - **Effectively carry out competition advocacy** and spread the information on benefits of competition among all stakeholders to establish and nurture competition culture in Indian economy.
- **Need of CCI:**
 - **Promote free enterprise:** Competition is important for the preservation of economic freedom and our free enterprise system.
 - **Protect against market distortions:** The need for competition law arises because markets can suffer from failures and distortions, and various players can resort to anti-competitive activities such as cartels, abuse of dominance etc. which adversely impact economic efficiency and consumer welfare.

- **Promotes domestic industries:** During the era in which the economies are moving from closed economies to open economies, an effective competition commission is essential to ensure the continued viability of domestic industries, carefully balanced with attaining the benefits of foreign investment increased competition.

4. Zebrafish and its Importance in Human Spaceflights

Why in News

A new research in **zebrafish** has demonstrated how **induced hibernation (torpor)** may protect humans from the elements of space, especially radiation, during space flight.

Key Points

- **About the Study:**
 - The researchers **exposed zebrafish to radiation** like what would be experienced on a six-month journey to Mars.
 - They observed signs of oxidative stress (**imbalance between antioxidants and free radicals**), DNA damage, stress hormone signaling and changes to the cell-division cycle.
 - The researchers then **induced torpor in a second group of zebrafish** which were then exposed to the same dose of radiation.
 - The results showed that **torpor lowered the metabolic rate within the zebrafish and created a radioprotective effect**, protecting against the harmful effects of radiation.
 - Torpor, **a form of hibernation**, is a brief spell of suspended animation. It usually lasts less than a day. When in torpor, an animal's metabolism, heartbeat, breathing, and body temperature are greatly reduced.

Zebrafish

- **Scientific Name:** *Danio rerio*
- **Habitat:**
 - It is a small (2-3 cm long) freshwater fish found in the **tropical and subtropical regions**. The fish is native to **South Asia's Indo-Gangetic plains**, where they are mostly found in the paddy fields and even in stagnant water and streams.
 - They are classified as a **species of least concern** on the IUCN's Red List of Threatened Species.

- **Organism for Biomedical Research:**
 - They have been used to study vertebrate development, evolution, genetics, and disease due to its adequate **regeneration capacity of almost all its organs**, including the brain, heart, eye, spinal cord.
 - Zebrafish have a **similar genetic structure** (around 70%) to humans.
 - As a vertebrate, the zebrafish has the same major organs and tissues as humans. Their muscle, blood, kidney and eyes share many features with human systems.

- **Need of the Study:**
 - Recent technological advancements might have made space travel more accessible. However, long-term space travel is incredibly **detrimental to human health**.

- **Significance:**
 - The study could help in understanding how a form of **hibernation, known as induced torpor (a state of reduced metabolic activity)** may provide radio-protective effects.
 - Hibernation is a physiological condition found in many species.
 - It **protects them against harsh conditions**, such as food scarcity and low environmental temperatures.
 - Replicating hibernation may therefore **protect astronauts** against the **harsh conditions of space flight**, which include challenges such as **radiation exposure, bone and muscle wastage, advanced ageing and vascular problems**.
 - The **European Space Agency (ESA)** is also conducting research into the impacts of **hibernating astronauts not just for health reasons**, but because it could **reduce the amount of consumables required for a space journey** and allow the **mass of a spacecraft to be reduced by a third**.

Challenges of Space Travel

- **Radiation:**
 - Any space flight is outside **Earth's protective magnetic field**, where radiation is much higher as compared to International space stations. (International space station is just within the earth's protective atmosphere; even then radiation is 10 times higher when compared to earth.)
 - **Radiation exposure** increases **cancer risk, damages the central nervous system, can alter cognitive function, reduce motor function and prompt behavioural changes**.

- **Isolation and Confinement:**

- **Behavioural issues** among astronauts crammed in a small space over a long period of time, are inevitable.
- Sleep loss, circadian desynchronization, and work overload compound this issue and may lead to performance decrements, adverse health outcomes.
- **Distance from Earth:**
 - As distance of space flight increases from earth, communication delay increases. For example, there will be a communication delay of 20 minute in space travel to Mars.
- **Gravity:**
 - Different planets have **different gravitational pull**, for example astronauts would need to live and work in three-eighths of Earth's gravitational pull on Mars. Additionally, explorers will experience total weightlessness during the course of travel.
 - To further complicate the problem, when astronauts transition from one gravity field to another, it's usually quite an intense experience.
 - Blasting off from the surface of a planet or a descent through an atmosphere is many times the force of gravity.
- **Hostile/Closed Environments:**
 - NASA has learned that the **ecosystem inside the spacecraft** plays a big role in everyday astronaut life. Microbes can change characteristics in space, and microorganisms that naturally live on your body are transferred more easily from person to person in closed habitats like the space station.

5. Net Zero by 2050: IEA

Why in News

Recently, the **International Energy Agency's (IEA)** released its **Net Zero Emissions (NZE) Roadmap** - named 'Net Zero by 2050'.

- It is the **World's first comprehensive energy roadmap** which comes ahead of the **United Nations Conference of the Parties (COP) 26 climate change** convention in Glasgow, Scotland in November 2021.
- '**Net zero emissions**' refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

Key Points

- **Need:**
 - Climate **pledges by governments till date even if fully achieved would fall well short of what is required** to bring global energy-related **carbon dioxide (CO₂) emissions to net zero by 2050** and give the world an even chance of **limiting the global temperature rise to 1.5 °C**.
- **Aim of the Roadmap:**
 - **Examine Impact:**
 - To **examine the impacts of announced NZE pledges** and what they might mean for the energy sector.
 - **New Energy Pathway:**
 - To **develop a new energy-sector pathway towards achieving NZE globally by 2050**.
 - **Recommend Governments:**
 - To set out key policy **recommendations for governments to act upon in the near-term, and a long-term agenda** for change to achieve net-zero goals, including with a view to reaching other Sustainable Development Goals.
- **Principles to be Followed:**
 - **Technology Neutrality:**
 - Technology neutrality, with **adoption driven by costs, technological readiness, country and market conditions** and trade-offs with wider societal goals.
 - **Technology Neutrality** is generally described as the **freedom of individuals and organizations to choose the most appropriate and suitable technology** to their needs and requirements for development, acquisition, use or commercialisation, **without dependencies on knowledge involved as information or data**.
 - **Universal Cooperation:**
 - Universal international cooperation, in which **all countries contribute to net zero**, with an eye to a 'just transition' and where advanced economies lead.
 - **Minimizing Volatility:**
 - An **orderly transition** that seeks to **minimise stranded assets** where possible, while **ensuring energy security and minimising volatility in energy markets**.
- **Milestones Set by the Roadmap:** More than **400 milestones** to guide the global journey to net zero by 2050 which include:
 - **Fossil Fuels:**

- **No investment in new fossil fuel supply projects, and no further final investment decisions for new unabated coal plants.**
- **Vehicle sale:**
 - **No sales of new internal combustion engine passenger cars by 2035.**
- **Electricity Generation:**
 - **The global electricity sector should reach net-zero emissions by 2040.**
 - **It calls for annual additions of solar power to reach 630 gigawatts by 2030, and those of wind power to reach 390 gigawatts.**
 - **Together, this is four times the record level set in 2020.**
 - **It suggests the following on global electricity generation towards 2050:**
 - **714% more renewables.**
 - **104% more nuclear.**
 - **93% less coal (and all remaining coal with Carbon Capture and Storage (CCS)).**
 - **85% less natural gas (with 73% of that with CCS).**
- **Significance:**
 - **It is supposed to provide a pathway to bridge the current gap between rhetoric and reality in reducing GreenHouse Gas (GHG) emissions from the energy and industry sectors.**
- **Criticism:**
 - **Ignorance:**
 - **IEA did not consider historical emitters, ignoring the principle of 'climate justice'.**
 - **Developed countries benefited from the Industrial Revolution at the cost of emitting GHGs, leading to climate change.**
 - **Hence, they have the economies to decarbonise, allowing space for poor and developing countries to get financing and innovation organised to switch to cleaner energy options.**
 - **Regulations Needed:**
 - **There is potentially an over-reliance on behavioral change to consume less energy.**
 - **Regulations will be essential to positively motivate constructive social change in economies.**

International Energy Agency

- **IEA is an autonomous Intergovernmental Organisation established in 1974 in Paris, France.**

- IEA mainly focuses on its energy policies which include **economic development, energy security and environmental protection**. These policies are also known as the 3 E's of IEA.
- India became an **Associate member of IEA in March 2017** but it was in engagement with IEA long before its association with the organization.
 - Recently, India has **inked a Strategic Partnership Agreement with the IEA** to strengthen cooperation in global energy security, stability and sustainability.
- The **World Energy Outlook Report** is released by the IEA annually.
- Recently, it has released the **India Energy Outlook 2021 Report**.
- **IEA Clean Coal Centre** is dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.

Way Forward

- The world is facing a **formidable task of transforming the energy sector within 30 years in a cost-effective manner**, even as the world economy more than doubles in size and the global population increases by 2 billion people.
- The need for the world to reach NZE by 2050 lies in the **major interim steps** that need to be taken through 2030 – **to engineer cheap and green energy from hydrogen and renewable energy while making them accessible to all**.

Prelims Practice Questions

1. Consider the following statements:

1. Gujarat has the longest mainland coastline in India.
2. India's territorial waters extend to 200 nautical miles from baseline.

Which of the statements given above is/are correct?

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

Answer: A

Solution:

- India's territorial waters extend to **12 nautical miles from baseline**.

Enrich Your Learning:

India's territorial limit from the coast

- India has a coastline of about 7,500 km.
- All waters up to 12 nautical miles from the baseline is India's territorial seas.
- All waters beyond the limit of India's territorial seas would in sequence be the contiguous zone (up to 24 nautical miles) and **Exclusive Economic Zone or EEZ which runs up to 200 nautical miles**.
- Gujarat has the longest mainland coastline in India followed by Andhra Pradesh.

What is Baseline?

- The baseline from which the territorial sea is measured **is the low-water line along the coast** which is officially recognized by the coastal state.
- This is **either the low-water mark closest to the shore or it may be an unlimited distance from permanently exposed land** (provided that some portion of elevations exposed at low tide but covered at high tide (like mud flats) is within 3 nautical miles or 3.45 statute miles (5.5 km) of permanently exposed land.

Straight baselines can alternatively be defined connecting fringing islands along a coast, across the mouths of rivers, or with certain restrictions across the mouths of bays.

- Waters landward of the baseline are defined as internal waters.

2. Which of the following are criteria considered for providing Least Developed Country status to a nation?

1. Per capita Income
2. Gross Domestic Product Values
3. Consumer Price Index
4. Human Assets Index
5. Economic Vulnerability Index

Select the correct answer using the codes given below:

- a. 1 & 3 only

- b. 1, 2 & 3 only
- c. 2, 3, & 5 only
- d. 1, 4 & 5 only

Answer : d

Least Developed Country status

- UN Committee for Development Policy (CDP) decides on the Least Developed Country (LDC) status of a country based on three criteria,
 1. Per capita income,
 2. Human Assets Index
 3. Economic Vulnerability Index
- A country must achieve two of the three criteria at two consecutive triennial reviews to be considered for graduation.
- Recently CDP has recommended graduation of Bangladesh from the category of LDC to the category of Developing Country.
- Bangladesh has met for the second time all the three eligibility criteria for graduating from the LDC category to the developing nations category.
- This proposal will be sent to the UN Economic and Social Council (ECOSOC) for endorsement, late to the UN General Assembly (UNGA).
- Usually countries are given 3 years for transition but this year due to the pandemic, Bangladesh has been given 5 years i.e. up to 2026.

3. India conducts military exercise Sampriti with which of the following countries?

- a. Sri Lanka
- b. Bangladesh
- c. Nepal
- d. Myanmar

Answer: b

Explanation:

- Sampriti Exercise is a bilateral defence cooperation exercise between the armies of India and Bangladesh.
- It is seen as a part of Indo-Bangladesh defence cooperation.

- There are nine editions of Sampriti, the latest being Sampriti-IX that started off from February 3 – February 16, 2020, in Meghalaya.

4. Consider the following statements with respect to Chabahar Port:

1. It is the only oceanic port in Iran.
2. It is located in the southeastern part of Iran on the Gulf of Oman.
3. The International North South Transport Corridor (INSTC) passes through the port.

Which of the above statements is/are correct?

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

Answer: c

Explanation:

- Chabahar port is the only oceanic port in Iran.
- It is located in the southeastern part of Iran on the Gulf of Oman.
- While India made a proposal to include Chabahar port in the International North South Transport Corridor (INSTC), no decision has been taken yet. Therefore, the 3rd statement is wrong.

5. Which of the following international organization publishes 'Emissions Gap Report'?

- a) World Wildlife Fund (WWF)
- b) United Nations Environment Programme (UNEP)
- c) International Union for Conservation of Nature (IUCN)
- d) Friends of the Earth International

Answer: B

Solution:

- The Emission Gap is published by **United Nations Environment Programme (UNEP)**.

Enrich Your Learning:

Emissions Gap Report

• The Emissions Gap could also be called the “**Commitment Gap**”. It measures the **gap between what we need to do and what we are actually doing to tackle climate change.**

The Emission Gap is published by **United Nations Environment Programme (UNEP)**.

This report measures and projects three key trendlines:

- The amount of greenhouse gas emissions every year up to 2030.
- The commitments countries are making to reduce their emissions and the impact these commitments are likely to have on overall emission reduction.
- The pace at which emissions must be reduced to reach an emission low that would limit temperature increase to 1.5-degree C.

Report highlights

- The report presents the latest data on the expected gap in 2030 for the 1.5°C and 2°C temperature targets of the Paris Agreement.
- It considers different scenarios, from no new climate policies since 2005 to full implementation of all national commitments under the Paris Agreement.
- **For the first time, it looks at how large annual cuts would need to be from 2020 to 2030 to stay on track to meeting the Paris goals.**
- This year, the report looks at the potential of the energy transition – particularly in the power, transport and buildings sectors – and efficiency in the use of materials such as iron steel and cement.

6. The ‘Food Waste Index Report’ is released by which of the following?

- A World Food Programme
- B Food and Agriculture Organization
- C United Nations Development Programme
- D United Nations Environment Programme

Answer : D

Explanation

- Recently, the **United Nations Environment Programme (UNEP)** released the **Food Waste Index Report 2021**. Hence, option **D** is correct.

- It has revealed that 17% of all food available at consumer level (11% in households, 5% in food service and 2% in retail) was wasted in 2019 and around 690 million people had to go hungry.
 - It presents the most comprehensive food waste data collection, analysis and modelling to date, generating a new estimate of global food waste.
 - It also publishes a methodology for countries to measure food waste, at household, food service and retail level, to track national progress towards 2030.
 - In contrast to the Food Loss Index, the Food Waste Index measures total food waste (rather than loss or waste associated with specific commodities)

Mains Practice Questions

1. "Corruption is an important manifestation of the failure of ethics." In the light of the statement discuss the various reasons for the prevalence of corruption and measures needed to eradicate it. (250 words)

Approach

- Start with briefly explaining the given statement.
- Discuss various reasons for the prevalence of corruption emphasising on the ethical reasons.
- Examine the measures needed to eradicate corruption and focus more on the ethical measures.
- Conclude suitably.

2. What do you mean by Basel accords? Discuss the major changes proposed in Basel III over earlier accords and its significance over the Indian banking sector. (250 words)

Approach

- Explain Basel accord.
- Mention major changes proposed in Basel III over earlier accords.
- Discuss the significance of these accords for Indian banking sector.
- Conclude with the likely impact on Indian banking sector.