

17 Jan 2021: UPSC Exam Comprehensive News Analysis

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Category: SCIENCE AND TECHNOLOGY

1. Web3: A vision for the future

Syllabus: Awareness in the fields of Information technology and internet.

Prelims: Web 3.0 framework

Mains: Significance and concerns associated with web 3.0 framework

Context:

- The concept of Web3, also called **Web 3.0** has been in news of late.

Evolution of the internet:

Web 1.0:

- Web 1.0 is the world wide web or the internet that was invented in 1989 and lasted till around 1999.
- Under this phase, the internet consisted mostly of **static web pages**.
- Here the users could go to a website and only read and interact with the static information on the page. The internet users **didn't have any avenue to create any content**.

Web 2.0:

- Web 2.0 started in some form in the late 1990s itself though it was only by 2004 that most of the features related to web 2.0 became fully available. As of now we are still in the age of Web 2.0.
- The major differentiating characteristic of Web 2.0 compared to Web 1.0 is that in Web 2.0 **users can create content**. The **users can interact and also contribute** in the form of comments, likes, sharing and uploading of their photos or videos.

Web 3.0:

- Web 3.0 is the potential next phase of the internet. The term was **first coined in 2014 by Ethereum co-founder Gavin Wood**, and the idea gained interest in 2021.
- Web 3.0 would be based on **blockchain technology** and would incorporate concepts such as **decentralization and token-based economics**.
- Web 3.0 promotes would **allow for peer to peer transactions** based on the blockchain technology.
 - Currently if a seller has to make a business to the buyer, both the buyer and seller need to be registered on a "shop" or "platform" like Amazon or Ebay or any such e-commerce portal to help authenticate that the buyer and seller are genuine parties for the transaction. Web3 tries to remove the role of the "platform" by incorporating block chain technology. Thus, Web3 enables peer to peer (seller to buyer) transaction by **eliminating the role of the intermediary**.
 - Similarly under the proposed web 3.0 platform, a person would be able to share pictures and videos to his/her followers without the need to have any social media accounts.
- The spirit of Web3 is **Decentralized Autonomous Organization (DAO)** which is that all the business rules and governing rules in any transaction are transparently available for anyone to see

and software will be written conforming to these rules. Under the web 3.0, there is **no need for a central authority** to authenticate or validate.

Significance of web 3.0:

Decentralization:

- In Web 2.0, data and content are centralized in a small group of companies sometimes referred to as “Big Tech”. Most of the data in the internet and the internet traffic are owned or handled by these few large companies. This development has given rise to a sense of disappointment that the original purpose of the internet- to democratize availability of information has been distorted.
- Web3 offers a solution to these problems by envisaging a **more decentralised internet** to be run on blockchain technology.
- Hence Web 3.0 would help **shift power from big tech companies to individual users**.

Ownership rights:

- Web 3 can be understood as the “read/write/own” phase of the Internet. Rather than just using free tech platforms in exchange for our data, **users can participate in the governance and operation of the protocols themselves**. This means people can become participants and shareholders, not just customers or products.
- Under web 3.0 the users will have ownership stakes in platforms and applications unlike now where tech giants control the platforms. Hence under the Web 3.0 the **users would have more control over their own data** and will thus help address the problems of data monopoly.

Enhanced data security:

- The centralization of data by the tech companies creates issues of data privacy and possible avenues for **abuse of data**. The general public is quite cognizant about the way their personal data is being harvested by tech giants and used to create tailored advertisements and marketing campaigns. Facebook, has been in news for **breaching data privacy laws**. The web 3.0 system would allow anyone to **participate without having to monetize their personal data**.
- Also the centralized data with the tech companies is prone to issues of data security. However in web 3.0 being based on a decentralized system, a **network can still function even if a large proportion of participants are attacked/taken out**. Hence it is more secure.

Concerns/challenges:

- The main criticism of Web 3 technology is that it falls short of its ideals. **Ownership over blockchain networks is not equally distributed** but concentrated in the hands of early adopters and venture capitalists.
- From a **technology perspective**, Web3 will require deviation from the current architecture where there is a front-end, middle layer and back-end. This would be complex to implement.
- **Scalability challenges**– The **transactions on web 3.0 could be slower** because they are decentralized. Simple processes like a payment will need to be processed by a miner and propagated throughout the network.

- **Accessibility-** The lack of integration in modern web browsers would make web3 less accessible to most users. Also since interacting with web3 applications would **require extra steps, software, and education**. This can be a hurdle to adoption.
- **Censorship would be much harder in web 3.0**, as information would have many ways to propagate across the network. This could make **genuine state efforts to limit propagation of fake news and incriminatory hate speeches difficult**.
- The web 3.0 framework will make it easier for people indulging in illegal activities like smuggling and terrorism to communicate without the fear of being monitored.

Conclusion:

Though it is still early to know whether Web3 will become the dominant mode of handling the internet but the questions it raises are relevant. Despite some concerns associated with it, Web 3 still has a lot of potential.

Nut Graf

The proposed web 3.0 framework could offer a solution to the challenges of data monopoly and data privacy in the increasingly digitizing world.

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: DISASTER MANAGEMENT

1. Storm warnings of a megacity collapse

Syllabus: Disaster and disaster management.

Mains: – Critical Analysis of Increased Events of Urban flooding India

Context: –

This article examines the criticality of the Urban flooding problem in India in the context of increasing risk of urban collapse due to extreme weather events.

What is Urban Flooding?

- Urban flooding refers to the problem of flooding in urban areas caused by overflowing rivers, as well as misinformed approaches to dealing with urbanization.
- Overburdened drainage, hasty and unregulated development, and buildings built without regard for natural topography and hydro-geomorphology all contribute to the problem.
- As a result, urban floods are clearly a man-made tragedy.

Know More About the [**Factors Responsible For Urban Flooding And Mitigation Methods**](#)

What are the Issues Responsible for Increased Urban Flooding in India?

Issues Responsible for Increased Urban Flooding

- **Neglect of municipal councils.**
- **Lack of empowerment and failure to build capacity among municipal authorities.**
- **Informality remained dominant and No efficient implementation of laws.**
- **Unsustainable changes were made to the urban environment.**
- **Permanent, elite constructions were favored at the cost of ecology.**
- **Very few cities have master plans.**
- **Extreme dependence on market forces to supply affordable urban houses.**
- **Little funds to create even basic infrastructure such as water supply, sanitation and roads.**
- **Unplanned densification in large parts of the metropolitan area.**
- **Increased Housing prices in urban areas and absence of adequate good rental housing.**

Niti Aayog Recommendations:

- Climate impacts are certain to affect cities even more fundamentally and permanently, according to NITI Aayog's report on "Reforms in Urban Planning Capacity in India."
- NITI Aayog advises that 500 priority cities be included in a competitive framework, using participatory planning tools, surveys, and focus group discussions to examine people's needs and aspirations.

Recommendations: –

- Efficient Planning and Resource Management:** Identifying a city's assets and planning spatially, technical tools, private sector talent, and mapping techniques should be given a lot of weight in planning and management.
- Strengthen role of Local Government:** To achieve greater inclusion and a sense of community, democratically elected local governments must play a vital role.
- Focus on Sustainable Urban Development:** If climate change is the guiding concept, urban development must be more sustainable and equitable. This new method would put environmental and sustainability considerations in urban planning.
- Multidimensional Development:** All aspects of a city's development, beginning with cheap housing, are crucial in adapting to future climate change.
- Need for Separate department for climate change adaptation:** A top-level department for climate change adaptation is required which will bring together all relevant departments to collaborate with elected local governments.

Way Forward: –

- With considerable production and consumption, India's cities will continue to be drivers of economic growth, but unsustainable urban development in the face of climate change threatens this success story.
- Today, robust, functional metropolitan communities that can withstand floods, heat waves, pollution, and mass movement to keep the engines of the economy going are required, not glitzy retrofitted smart urban enclaves.
- Otherwise, urban India would become a risky investment.

Nut Graf

The recent events of urban flooding in Mumbai and Chennai implies that Urban floods have extensive socio-economic effects on the livelihood of individuals. To make better planning decisions, policymakers need to focus on decentralization of governance which can be the efficient way forward to sustainable development of Urban India.

Category: ECONOMY**1. Taxing cryptocurrency transactions**

Syllabus: *Issues relating to mobilization of resources.*

Mains: *-Possibility and concerns associated with the Process of taxing crypto transactions in India.*

Context: –

This article examines the possibility and concerns associated with the Process of taxing crypto transactions in India.

What Are The Available Legal Options To Bring The Cryptocurrencies Under Taxation?

Income Tax Act, 1961

- Section 56 of the IT Act shall come into play, making cryptocurrencies taxable under the head 'Other sources of income'.

As 'Capital gains'

- Trading in cryptocurrency may be classified as transfer of a 'capital asset', taxable under the head 'capital gains'.

As 'business income':

- If cryptocurrencies are held as stock-in trade and the taxpayer is trading in them frequently, the same will attract tax under the head 'business income'.

What are the Challenges in the Process of taxing crypto transactions?

1. **Varied interpretations:** The absence of explicit tax provisions has led to uncertainty and varied interpretations being adopted in relation to mode of computation, applicable tax head and tax rates.
2. **Ambiguity over Fair Market value:** Since there is no consistency in the rates provided by the crypto-exchanges, it is difficult to arrive at a fair market value.
3. **Difficulty in Identifying Tax Jurisdiction:** It is often tricky to identify the tax jurisdiction for crypto transactions as taxpayers may have engaged in multiple transfers across various countries and the cryptocurrencies may have been stored in online wallets.
4. **Risk of Tax Evasion:** Crypto does not reveal the person's real identity, giving tax evaders a cloak of invisibility. The lack of third party information on crypto transactions makes it difficult to scrutinize and identify instances of tax evasion.
5. **Crypto Funding Black Money and Terrorism:** There are serious concerns with cryptocurrencies being used to park black money abroad and fund criminal activities, terrorism, etc.
6. **Unregulated intermediates:** Crypto-market intermediaries like the exchanges, wallet providers, network operators, miners, administrators are unregulated and collecting information from them is very difficult.
7. **Difficulty in Tracing Transactions:** Due to lack of information on crypto transactions, they are hard to trace and only voluntary disclosures from the parties involved or a search/survey operation may reveal the tax evaders.

What Steps can be taken to provide a robust mechanism for taxing crypto transactions?

1. **Clear laws:** The income-tax laws pertaining to the crypto transactions need to be made clear by incorporating detailed statutory provisions.
2. **Generating Awareness:** This should be followed by extensive awareness generation among the taxpayers regarding the same.
3. **Separate Mandatory Disclosure:** The practice of having separate mandatory disclosure requirements in tax returns should be placed on the taxpayers as well as all the intermediaries involved, so that crypto transactions do not go unreported.
4. **Strengthening international legal framework:** The existing international legal framework for exchange of information should be strengthened to enable collecting and sharing of information on crypto-transactions.
5. **Linking crypto Identities:** This will go a long way in linking the digital profiles of cryptocurrency holders with their real identities.
6. **Impart Training:** The Government must impart training to its officers in blockchain technology.
7. **Use of Latest Technology:** Tax authorities should also equip themselves with the latest forensic software which can analyze a high volume of crypto transactions at a time and raise red flags in cases of suspicious transactions.

Conclusion: –

It is certain that cryptocurrencies are here to stay. A streamlined tax regime will be essential in the formulation of a clear, constructive and adaptive regulatory environment for cryptocurrencies.

Nut Graf

Increasing use of cryptocurrencies by Indians not only creates an avenue for generation of tax revenue for the nation but also puts forth a Herculean challenge for the tax authorities to track and tax transactions involving cryptocurrencies.

Category: SCIENCE AND TECHNOLOGY**1. A 'lifeline', animal farmed**

Syllabus: Developments and their applications and effects in everyday life

Mains: – Concerns Associated with Xenotransplantation

Prelims:- Xenotransplantation

Context: –

This article discusses Xenotransplantation and the concerns Associated with it in the light of recent transplantation of pig's heart.

Background: –

- The 'xenotransplant' is the process which involves interspecies transplants and exhibits endless possibilities to treat otherwise untreatable diseases.
- Both living and dead humans are being sourced as donors but because of scientific, ethical and social challenges, the number of human donors remains restricted.

Know More About the [Xenotransplantation](#)

Brief history of Xenotransplant:

- Early kidney and liver transplants were attempted from baboons and chimpanzees as these primates were considered closest to humans.
- In the early 1960s, a surgeon called Reemtsma in New Orleans performed 13 chimpanzees to human kidney transplants.

Why have scientists focused on pigs as a source of human organs?

- Pigs are genetically modifiable to reduce the chances of rejection by the human body.
- In the western world, it is socially more acceptable to breed pigs for this purpose.
- There are now companies breeding genetically modified pigs in special farms for the express purpose of transplantation.

What are the concerns Associated with Xenotransplantation?

1. **Transmission of Viruses:** There are concerns about the transmission of pig viruses through the transplant but this barrier has also been partly overcome by bio protection and genetic manipulation.
2. **Animal Rights Issue:** The animal rights movement is not impressed. Animal rights activities like PETA have decried the pig heart transplant.

Conclusion: –

As the increasingly common cause of death and suffering is end stage failure of critical organs there will be continuous efforts to widen the net for sourcing them. Recent events show that human lives depend not only on other humans but also on other species cohabiting the planet; all creatures big and small.

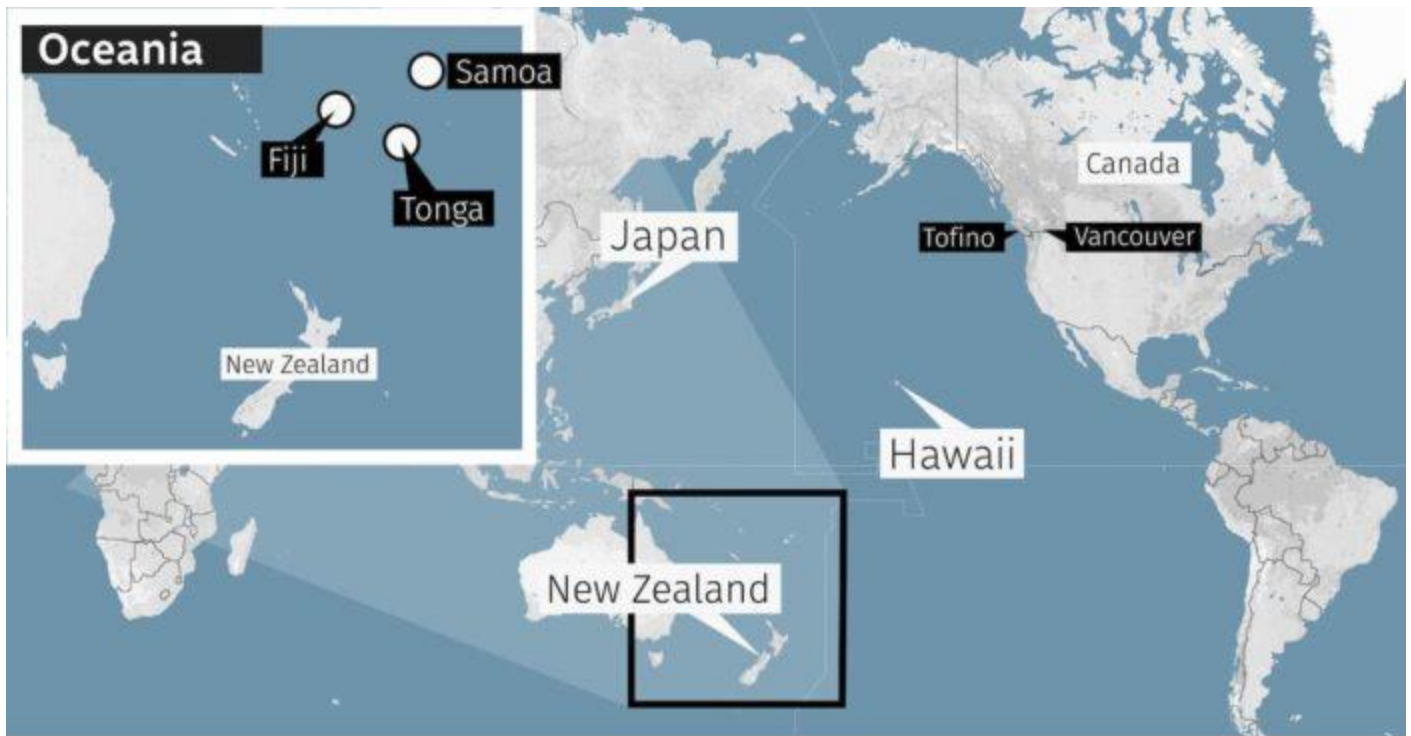
Nut Graf

Given organ shortage, Xenotransplantation is significant as it could provide an alternative supply of organs to those with life-threatening diseases. It also overcomes another hurdle in human to human transplant; one does not have to seek consent from an animal which can be sacrificed for the organ.

F. Prelims Facts

1. Volcano caused 'significant damage'

- A massive **volcanic eruption in Tonga** has triggered a **tsunami around the Pacific coastline** from Japan to the United States.
- The capital city of Nuku'alofa has suffered significant damage.



CBC NEWS

2. Sense and Sensitivity in self-driving cars

Doppler shift:

When a body that is emitting radiation or reflecting a radiation, has a non-zero velocity relative to an observer, the wavelength of the observed emission will be shortened or lengthened, depending upon whether the body is moving towards or away from an observer. This **change in observed wavelength, or frequency**, is known as the Doppler shift.

G. Tidbits

1. Ukraine says it has 'evidence' that Russia is behind cyberattack

- Amid the all-time **high tensions between Ukraine and Russia** in the backdrop of Russia amassing troops on its border ahead of a possible invasion, Ukraine has claimed that it has evidence of Russia being behind a **massive cyberattack that knocked out its key government websites** in the past week. Microsoft has warned that the malware under question could render government digital infrastructure inoperable.
- Russia is being alleged of waging a **hybrid war** against Ukraine
- This development brings to light the increasing **impact of cross-border cyber-attacks on a country's internal security**.

2. 'Govt. talk on marital rape a delaying tactic'

- The Delhi High Court is hearing multiple petitions challenging the **exception to Section 375 of the IPC**, which exempts forcible sexual intercourse by a man with his own wife from the offence of rape,

provided the wife is above 15 years of age. This has brought to the forefront the issue of **marital rape**.

- At least two big committees in the past decade have **recommended criminalising marital rape**.
 - The **J.S. Verma committee** had proposed removal of the exception for marital rape. It had held that the law must “specify that a marital or other relationship between the perpetrator and victim is not a valid defence against the crimes of rape or sexual violation”.
 - The **Pam Rajput committee (2015)** had also suggested that “marital rape should be made an offence”.
- Around 50 countries have made marital rape an offence.

H. UPSC Prelims Practice Questions

Q1. Consider the following statements:

1. He was a social and religious reformer who gave the universal message, “One caste, one religion, one God.”
2. He lent his support to the Vaikom Satyagraha which was aimed at temple entry in Travancore for the lower castes.
3. He built a temple dedicated to Lord Shiva at Aruvippuram which was against the caste-based restrictions of the time.

The above statements describe:

- a. Nataraja Guru
- b. Ramaswami Naicker
- c. Sahodaran Ayyappan
- d. Sree Narayana Guru

Answer: d

Explanation:

- Sree Narayana Guru was a pioneer reformer who rejected the caste system and stressed the equality of man. He also gave the universal message, “One caste, one religion, one God.”
- Guru built many Hindu temples which were open to people from all castes and religions.
- In 1888, he built a temple dedicated to Lord Shiva at Aruvippuram which was against the caste-based restrictions of the time. When questioned by Brahmins on this deed, Guru replied that the Shiva he had consecrated was not a Brahmin.
- In one temple he consecrated at Kalavancode, he kept mirrors instead of idols. This symbolised his message that the divine was within each individual.
- He also founded an Advaita Ashram in Kalady.
- He was also a keen educator and stressed on the importance of education for all. He taught Sanskrit and the Upanishads to students from all castes, including the ‘low caste’ students who were not permitted to study the scriptures.

- He also lent his support to the Vaikom Satyagraha which was aimed at temple entry in Travancore for the lower castes. Mahatma Gandhi met Guru during this time.

Q2. Which of the following statements about Matangini Hazra is/are correct?

1. She was arrested for taking part in the Civil Disobedience Movement in 1930 and the Salt March led by Gandhi.
2. She became the President of Indian national Congress in 1932.

Options:

- a. 1 only
- b. 2 only
- c. Both
- d. None

Answer: a

Explanation:

- Matangini Hazra was an Indian revolutionary who participated in the Indian independence movement until she was shot dead by the British Indian police in front of the Tamluk Police Station on 29 September 1942.
- She was affectionately known as Gandhi buri, Bengali for old lady Gandhi

Q3. Kohima War Cemetery is a memorial dedicated to the

- a. Soldiers who were killed while fighting insurgency in the Nagaland
- b. People who sacrificed their lives during the conflict between the British India and Burma
- c. Soldiers of the 2nd British Division of the Allied Forces who died in World War II
- d. Troops of British India who died in wars fought between 1914 and 1919

Answer: c

Explanation:

- Kohima War Cemetery is a memorial dedicated to soldiers of the 2nd British Division of the Allied Forces who died in the Second World War at Kohima, the capital of Nagaland

Q4. As a tsunami leaves the deep water of the open ocean and travels into the shallower water near the coast, which of the following events may take place?

1. The tsunami's speed diminishes as it travels into shallower water
2. It may grow to be several meters or more in height near the coast.

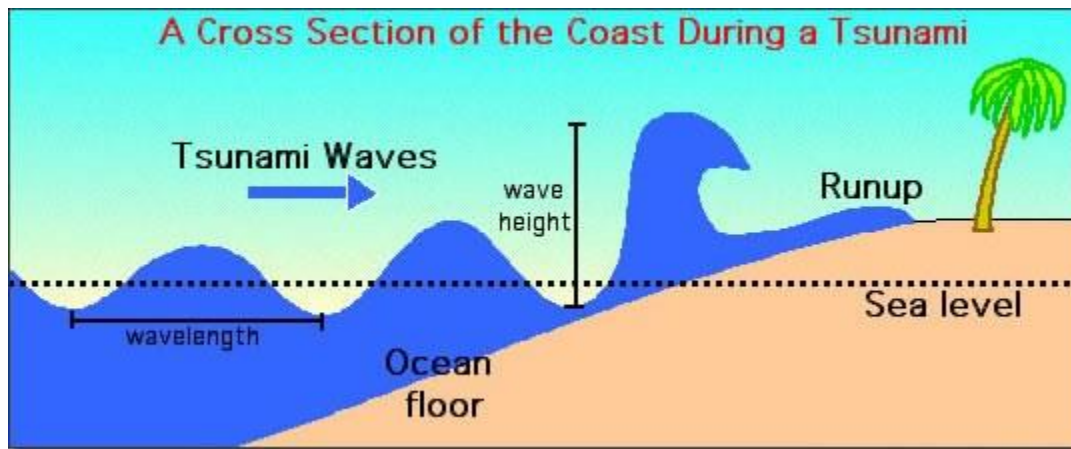
Options

- a. 1 only
- b. 2 only
- c. Both
- d. None

Answer: c

Explanation:

- As a tsunami leaves the deep water of the open ocean and travels into the shallower water near the coast, the tsunami's speed diminishes and it may grow to be several meters or more in height near the coast



Q5. Which of the following gives 'Global Gender Gap Index' ranking to the countries of the world?

- a. World Economic Forum
- b. UN Human Rights Council
- c. UN Women
- d. World Health Organization

Answer: a

Explanation:

- The Global Gender Gap Report was first published in 2006 by the World Economic Forum. The Global Gender Gap Index is an index designed to measure gender equality.

I. UPSC Mains Practice Questions

- India is in need of sound, functional metropolitan cities that can handle floods, heat waves, pollution and mass mobility to keep the engines of the economy running and not flashy retrofitted 'smart' urban enclaves. Substantiate. (10 Marks, 150 Words)[GS-1, Social Issues]

2. Predatory pricing and abuse of pricing power by startups and big corporates through preferential access may help the customers but can also eliminate the competition. In the light of the statement, critically examine if existing laws are able to regulate this practice. (10 Marks, 150 Words)[GS-3, Economy]

