

**INTRTATIONAL AFFAIRS**

❖ **Analysing the Kyrgyzstan-Tajikistan conflict**

❖ **CONTEXT:** Nearly 100 people have been killed and scores injured in violent border clashes between Kyrgyzstan and Tajikistan over the last week. A ceasefire, brokered by Russia, was agreed recently. The two landlocked countries share a 1,000-km long border, a large part of which is disputed. There have been flare-ups in the past as well over sharing water and land resources.

❖ **What is happening at the border?**

- The last few weeks have seen constant shelling, violent confrontations by local communities, and active engagement by security forces on either side. The Batken region of Kyrgyzstan is seeing families being moved out and getting relocated. According to the Ministry of Emergency Situations of Kyrgyzstan, close to 1,50,000 people out of the 5,50,000 odd population of the Batken region have either fled the area or have been relocated by the state. The situation in Osh, Kyrgyzstan, is no different. The highly militarised borders also add to tensions.
- The clashes are replaying old pre- and post-Soviet era legacies. The borders of the two republics were demarcated under Joseph Stalin's leadership.
- Historically, the Kyrgyz and Tajik populations enjoyed common rights over natural resources.
- The issue of the delimitation of the border is a relic of the Soviet era. While regular talks have tried to resolve the issue, one of the crucial points of disagreement remains over the map which should be used for demarcation purposes. Almost half of its close to a 1000 km border is disputed.
- The creation of the Soviet Union saw the large-scale redistribution of livestock to collective and state farms, which upset the existing status quo.
- There was only so much land to go around. The Tajik territory saw their livestock increase, and with scarce grazing land, agreements were signed between the two populations over the utilisation of Kyrgyz territory by the Tajiks' livestock.

❖ **What led to the current flare-up?**

- The ideological basis of the current set of clashes is reinforced by developmental issues, thus providing a fertile ground for the entire geopolitical space to become a hotbed of multiple minor conflicts and clashes.
- The environmental trajectory of the conflict can be further highlighted by incidents which saw groups from either side planting trees in disputed areas and engaging in a physical confrontation using agricultural equipment as weapons.
- Ferghana valley continues to be a site of struggle and frequent violent outbursts, with the location consisting primarily of Tajiks, Kyrgyz, and Uzbeks, who have historically shared common sociological specificities, economic activities, and religious practices.
- The collapse of the Soviet Union and the subsequent dissolution of the then-existing water and land agreements saw the creation of multiple smaller independent farms, which led to a marked increase in water consumption patterns among the farmers.
- Both countries share multiple water channels with undulating trajectories and flow, which upset equitable access to water on both sides. As a result, small-scale conflicts occur practically every year during the crucial irrigation period.
- Both countries, while sharing a closely intertwined historical past, have had differing internal dynamics since coming into statehood.
- One can trace their instability to transnational challenges and internal ethnic strife. Leaders of both countries have contributed in one way or the other to the continuation of the conflict through the imagination of a particular type of development project, hoping to stabilise the internal dynamics of their respective countries and legitimise their power.
- This 'development project' is similar to how the Soviet Union looked at modernisation — which resulted in the large-scale displacement of nomadic communities, eventually contributing to the 'environment driver' of the current conflict.

❖ **What is the road ahead?**

- The path to resolution of the conflict will require groups to agree upon a common map. The international community will have to make efforts to solve the dispute by involving elders in the communities, as historically, elders have been used to resolve conflicts. The informal small-scale governance mechanisms would also have to be further strengthened through a concerted effort by the respective countries to stabilise the geopolitical dynamics.

**INTERNAL SECURITY**

❖ **Popular Front of India (PFI)**

❖ **CONTEXT:** The massive searches and raids that the National Investigation Agency (NIA) has carried out on properties linked to the Popular Front of India (PFI) are related to five Unlawful Activities Prevention Act, 1967 (UAPA) cases registered against the body, including one on April 2022.

- The case registered in April is a broad investigation following "credible information" gathered by the central government that office bearers and members of the PFI were collecting funds from India and abroad to "committing terrorist acts".

- On September 22 2022, the NIA searched and raided 93 locations across the country and arrested at least 45 people linked to the PFI. The states where the raids were held are Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Uttar Pradesh, Rajasthan, Delhi, Assam, Madhya Pradesh, Maharashtra, Goa, West Bengal, Bihar and Manipur. Many arrested.
- While seeking the remand of some of these people, the NIA claimed the PFI has been involved in “recruiting Muslim youth to proscribed organisations like ISIS”. The PFI has also been accused of providing training to its members to carry out acts of terror.
- In June this year, the ED after filing prosecution complaints against the PFI and attaching Rs 68.62 lakh under the Prevention of Money Laundering Act, 2022, had claimed that the “PFI was covertly mobilising funds through well-organised networks in Gulf countries”.
- According to ED that funds were being sent to India through illegal channels and “foreign remittances into the bank accounts of sympathisers/office bearers / members and their relatives /associates in India, and thereafter these funds were transferred to the bank accounts of PFI, RIF (Rehab India Foundation) and other individuals/entities”. The funds were being “used to carry out various unlawful activities”.
- ❖ **What is the Popular Front of India?**
- The PFI was created in 2007 through the merger of three Muslim organisations in southern India
  - National Democratic Front in Kerala
  - Karnataka Forum for Dignity
  - Manitha Neethi Pasarai in Tamil Nadu.
- A decision to bring the three outfits together was taken in November 2006 at a meeting in Kozhikode in Kerala. The formation of the PFI was formally announced at a rally in Bengaluru during what was called the “Empower India Conference” on February 16, 2007.
- The PFI, which emerged in the aftermath of the ban on the Students Islamic Movement of India (SIMI), has projected itself as an organisation that fights for the rights of minorities, Dalits, and marginalised communities.
- The PFI has never contested elections and has been involved in carrying out social and Islamic religious work among Muslims, on the lines of the work done by right-wing groups such as the VHP and Hindu Jagaran Vedike among Hindus. Like these Hindu groups, the PFI doesn't maintain records of its members, making it difficult for law enforcement agencies to pin crimes on the organisation after arrests.
- In 2009, a political outfit named Social Democratic Party of India (SDPI) evolved out of the PFI, with the aim of taking up the political issues of Muslims, Dalits, and other marginalised communities.
- ❖ **What are some of the cases of violence the PFI has been linked with?**
- According to NIA A large number of criminal cases has been registered by different states over the last few years against the PFI and its leaders and members for their involvement in many violent acts. Criminal acts carried out by PFI, such as chopping off the hand of a college professor, cold blooded killings of persons associated with organisations espousing other faiths, collection of explosives to target prominent people and places, support to Islamic State and destruction of public property have had a demonstrative effect of striking terror in the minds of the citizens
- A 2011 case in Kerala of the chopping of a college professor's hand.
- The murder of RSS worker R Rudresh in Bengaluru in 2016, in which the NIA named Asim Shariff, president of the PFI's Bengaluru unit, as an accused.
- Also in 2016, Mysuru Police arrested Abid Pasha, a youth with PFI links, for the murder of Bajrang Dal worker K Raju. Pasha has been accused of being involved in six communally motivated murders in the region.
- In 2017, the police in Dakshina Kannada arrested two PFI activists in connection with the stabbing of RSS worker Sharath Madivala, 28, in Bantwal town of the district. The murder was allegedly in retaliation for the killing of SDPI worker Ashraf Kalayi.
- Persons linked to the SDPI are accused in a 2019 attempt to murder Tanveer Sait, the multiple-term Congress MLA from Narasimharaja.
- The 2019 murder of a social activist Ramalingam in the Thanjavur region of Tamil Nadu.

#### **SOCIAL ISSUE**

- ❖ **The case of nikah halala in India, and a long court battle**
- ❖ **The story so far: Sameena Begum, a Delhi-based victim of instant triple talaq and a fraud marriage approached the Supreme Court in 2018 seeking a ban on nikah halala. Following her petition, the Court issued notices to the Government of India, the National Human Rights Commission, the National Commission for Women and the National Minorities Commission. The five-judge Bench headed by Justice Indira Banerjee shall hear the case this October 2022.**
- ❖ **Why did Sameena Begum approach the Supreme Court?**
- Sameena Begum filed a PIL seeking the annulment of halala marriage and polygamy. She requested the court that Section 2 of the Muslim Personal Law (Shariat) Application Act, 1937, be declared arbitrary and in violation of Articles 14, 15, 21 and 25 of the Constitution.
- She has also requested the court to ensure that provisions of the Indian Penal Code, 1860, apply to all Indian citizens. She contended that nikah halala is rape under IPC Section 375.

- She was not alone in seeking annulment of nikah halala. With her was Farzana Parveen who used to live in Noida with her husband Abdul Qadir. Qadir pronounced triple talaq but later put a condition to accept her back: she should undergo halala marriage. Parveen refused to marry another man for the sake of getting back to Qadir. Instead, she sought judicial redress, seeking a ban on nikah halala.
  - The Koran allows a man to divorce his wife a maximum of two times. On both the occasions, separated by at least one menstrual cycle — instant triple talaq is not mentioned anywhere in the Koran — he is allowed to cancel the divorce. If the spouses fail to resume cohabitation during this period, they are allowed to remarry without any third-party intervention. This can be done only twice. If the man takes his wife back after the second pronouncement of divorce and then divorces her for the third time, he is not allowed to marry her again. The woman becomes an independent being with full choice over her life.
  - Halala, the way the Koran speaks of it, empowers women to take independent decisions. It saves women from temperamental husbands who divorce in a fit of anger, then cancel it, then divorce again, unleashing an endless cycle of marriage and divorce.
  - The Indian reality is way removed from the scriptural injunctions. Often a man pronounces triple talaq in a fit of anger. A little later, he realises his mistake and approaches a maulana who often tells him that he has exhausted all three chances at divorce; his erstwhile wife is now prohibited to him for reconciliation unless she marries another man, and he either divorces her or dies. For the purpose of going back to the erstwhile husband, sham marriages are enacted wherein a woman marries another man with a pre-decided date and time of divorce. The nikah is conducted with the understanding that the divorce shall take place the next day after consummation of marriage. Usually, nikah halala stems from instant triple talaq and ends with it.
- ❖ **Is nikah halala prevalent across the globe?**
- In Saudi Arabia, where divorces are on the rise, no cases of halala have been reported.
  - No case has been reported from the UAE, Kuwait and Yemen either.
  - In India, the Muslim Women’s Protection of Rights on Marriage, passed after invalidation of triple talaq by the Supreme Court, is silent on nikah halala. The Act made instant triple talaq a criminal offence but steered clear of halala which takes place as a consequence of triple talaq.

**PRELIMS**

1. **Dvorak Technique**

- ❖ **CONTEXT:** September 20, 2022 the American meteorologist Vernon Dvorak passed away at the age of 100. In the era of advanced satellite technology, Machine Learning (ML), Artificial Intelligence (AI), this key technique, named after him, continues to be widely relied upon by forecasters till date.
- ❖ **Who was Vernon Dvorak?**
- Dvorak was an American meteorologist best credited for developing the Dvorak (read as Do-rak) technique in the early 1970s. The technique has been upgraded multiple times since then, and after a recent software update in May2022, it has been named the Advanced Dvorak Technique (ADT), coined by the National Hurricane Centre of the National Oceanic and Atmospheric Administration (NOAA).
  - According to American meteorologist the updated technique, would improve the tropical storm forecasts by many folds as they would have access to sharper and detailed images than ever before.

DEVELOPMENTAL PATTERN TYPES	PRE STORM	TROPICAL STORM		HURRICANE PATTERN TYPES		
		(Minimal)	(Strong)	(Minimal)	(Strong)	(Super)
	T1.5 - 5	T2.5	T3.5	T4.5	T5.5	T6.5 - TB
CURVED BAND PRIMARY PATTERN TYPE						
CURVED BAND EIR ONLY						
CDO PATTERN TYPE VIS ONLY						
SHEAR PATTERN TYPE				EYE TYPES		

- Dvorak was educated at the University of California, Los Angeles. His Master’s degree thesis in 1966 was titled ‘An investigation of the inversion-cloud regime over the subtropical waters west of California’. He worked with the National Environmental Satellite, Data, and Information Service of NOAA.
  - He was bestowed with the United States Department of Commerce Meritorious Service award in 1972. In 2002, he received a Special Lifetime Achievement Award from the National Weather Association.
- ❖ **What is the Dvorak technique?**

- It was first developed in 1969 and tested for observing storms in the northwest Pacific Ocean. Forecasters used the available satellite images obtained from polar orbiting satellites to examine the features of the developing tropical storms (hurricanes, cyclones and typhoons). During day time, images in the visible spectrum were used while at night, the ocean would be observed using infrared images.
- The Dvorak technique was a cloud pattern recognition technique based on a concept model of the development and decay of the tropical cyclone.
- “From the satellite images thus obtained, the Dvorak technique helps forecasters to do a pattern recognition from the observed structure of the storm, locate its eye and estimate the intensity of the storm.
- Through this statistical technique, scientists are able to measure the cyclone’s convective cloud pattern — curved bands, eye and central dense or cold region and shear. It is the Dvorak technique which gives the best estimates of the cyclone intensity — a vital component while issuing weather warnings.
- This tool, experts claim, cannot help make any predictions, measure wind or pressure or any other meteorological parameters associated with the cyclone. But it is a guide to estimate the storm’s intensity and possible intensification — which is crucial for local administration in planning evacuation measures of coastal or other nearby residents.
- The veteran meteorologist had also presented the wind speed and associated category of the tropical cyclone, making it a near-perfect tool for the operational cyclone forecasters.

❖ **Why is technique still widely in use?**

- Unlike land, ocean observations in the 1970s were sparse.
- Today, there continues to be an improved network of land-based meteorological observations, either in the form of taking manual observations, installing automatic weather stations or automatic rain gauges.
- On the other hand, ocean observations still remain limited. There are many vast regions across the four oceans that have not been fully examined with meteorological instruments.
- Ocean observations are mostly taken by deploying buoys or dedicated ships, but the number of observations from the seas is still not sufficient across the world.
- That is why meteorologists have had to depend more on satellite-based imageries, and combine it with the available ocean-data at the time of forecasting the intensity and wind speed of the tropical cyclones.
- The Dvorak technique, said to be one of the greatest meteorological innovations, has undergone several advancements since its inception. Even in the present day, when forecasters have access to several state-of-the-art tools like model guidance, animations, artificial intelligence, machine learning and satellite technology, it is the advanced versions of the 50-year-old technique that continues to be widely used. It has saved the lives of millions of people across the world and will continue to do so.

2. **Launch of Two Diving Support Vessels**

❖ **Context: Two Diving Support Vessels (Nistar & Nipun) being built by Hindustan Shipyard Ltd, Vishakapatnam for the Indian Navy, are scheduled to be launched.**

- The Diving Support Vessels (DSVs) are first of the kind, ships indigenously designed and built at HSL for the Indian Navy.
- These ships would be deployed for deep sea diving operations.
- Additionally, with Deep Submergence Rescue Vehicle (DSRV) embarked, the DSVs are designed to undertake submarine rescue operations.
- These ships will be capable of sustained patrolling, conducting Search & Rescue operations and carrying out Helicopter Operations at high seas.

❖ **DSVs**

- A diving support vessel is a ship that is used as a floating base for professional diving projects.
- Basic requirements are the ability to keep station accurately and reliably throughout a diving operation, often in close proximity to drilling or production platforms, for positioning to degrade slowly enough in deteriorating conditions to recover divers without excessive risk, and to carry the necessary support equipment for the mode of diving to be used.
- DSVs for inshore operations tend to be much smaller, and may operate while moored for shallow work.

3. **Draft Indian Telecommunication Bill, 2022**

❖ **CONTEXT: In a bid to do away with British-era laws governing the telecom sector, the Department of Telecommunications (DoT) issued the draft Indian Telecommunication Bill, 2022. The proposed Bill aims to bring in sweeping changes to how the telecom sector is governed, primarily by giving the Centre more powers in several areas to do so.**

- The Centre aims to consolidate and amend the existing laws governing the provision, development, expansion and operation of telecommunication services, telecom networks and infrastructure, in addition to assignment of spectrum.
- The draft Bill consolidates three separate acts that govern the telecommunications sector — Indian Telegraph Act 1885, Indian Wireless Telegraphy Act 1933, and The Telegraph Wires, (Unlawful Protection) Act 1950.

❖ **Amendments**

- Inclusion of new-age over-the-top communication services like WhatsApp, Signal and Telegram in the definition of telecommunication services.
- As per the draft law, providers of telecommunication services will be covered under the licensing regime, and will be subjected to similar rules as other telecom operators. This issue has been under contention for several years now with telecom service providers seeking a level-playing field with OTT apps over communication services such as voice calls, messages, etc. where operators had to incur high costs of licences and spectrum, while OTT players rode on their infrastructure to offer free services.
- The Centre is also looking to amend the Telecom Regulatory Authority of India Act (TRAI Act) to dilute the sectoral watchdog's function of being a recommendatory body. The current TRAI Act mandates the telecom department to seek the regulator's views before issuing a new licence to a service provider. The proposed Bill does away with this provision.
- The new Bill also proposes to remove the provision where if the DoT cannot accept TRAI's recommendations or needs modification, it had to refer back the recommendation for reconsideration by TRAI.
- The DoT has also proposed that if a telecom entity in possession of spectrum goes through bankruptcy or insolvency, the assigned spectrum will revert to the control of the Centre. So far, in insolvency proceedings, there has been a lack of clarity on whether the spectrum owned by a defaulting operator belongs to the Centre, or whether banks can take control of it.
- It also proposes to replace the Universal Service Obligation Fund (USOF) with the Telecommunication Development Fund (TDF).

**ANSWER WRITTING**

**Q. Despite Hydrogen fuel cells (HFCs) having many advantages, there are some concerns as well. Discuss.**

**Introduction**

Hydrogen fuel cells are a clean, reliable, quiet, and efficient source of high-quality electric power.

They use hydrogen as a fuel to drive an electrochemical process that produces electricity, with water and heat as the only by-products.

Hydrogen is one of the most abundant elements on earth for a cleaner alternative fuel option.

The National Hydrogen Energy Mission (NHM) was launched in the Union Budget for 2021-22 to promote hydrogen production and its uses.

**Significance of Hydrogen fuel cells**

- **Best Zero Emission Solutions:** It is one of the best Zero Emission solutions. It is completely environment friendly with no tailpipe emissions other than water.
- **Quiet operation:** The fact that the fuel cells make little noise means that they can be used in challenging contexts, such as in hospital buildings.
- **Easier scaling:** Operation times of fuel cells are longer than those of batteries, with fuel cells, only the amount of fuel needs to be doubled to double the operation time, while batteries require the capacity of the components to be doubled to achieve the same.

**Issues associated with Hydrogen fuel cells**

- **High Cost:** Green hydrogen makes up only 0.03% of global hydrogen production and it is up to five times more expensive than 'grey' hydrogen produced from natural gas or worse, 'brown' hydrogen produced from coal.
- **Hydrogen Storage:** Storage and transportation of hydrogen is more complex than that required for fossil fuels. This implies additional costs to consider for hydrogen fuel cells as a source of energy.
- **Hydrogen Extraction:** Despite being the most abundant element in the Universe, hydrogen does not exist on its own so needs to be extracted from water via electrolysis or separated from carbon fossil fuels.
  - Both of these processes require a significant amount of energy to achieve. This energy can be more than that gained from the hydrogen itself as well as being expensive.
  - In addition, this extraction typically requires the use of fossil fuels, which in the absence of carbon capture and storage (CCS) undermines the green credentials of hydrogen.

**Way Forward**

- Another alternative that many hydrogen councils across the world are pushing for is 'blue' hydrogen, which is grey hydrogen coupled with additional installations for carbon capture and storage incorporated into the production facility. This way, up to 90% of the CO2 emitted during hydrogen production can be captured for reuse or storage and prevented from escaping into the atmosphere.

**MCQs**

1. Consider the following characteristics of a tropical cyclone:
  1. A warm sea temperature of > 26°C
  2. High relative humidity of atmosphere at a height of > 700 m
  3. Atmospheric instability

The above mentioned characteristics are associated with which one of the following cycles of its development?

- a) **Formulation and initial stage**
- b) Modification stage

- c) Full maturity  
d) Decay
2. India celebrated Sign Language Day-2022 on which of the following date?  
a) September 21  
b) September 22  
c) **September 23**  
d) September 24
3. Terms like Nistar & Nipun often mentioned in news are related to which of the following?  
a) Nuclear Submarines  
b) **Diving Support Vessels**  
c) Warships  
d) Coast guard Patrolling vessels
4. Puneet Sagar Abhiyan often mentioned in media recently is related to which of the following?  
a) Green high way construction  
b) Restoration of wetlands  
c) **Clean sea shores of plastic & other waste material**  
d) Afforestation coastal areas
5. Advanced Dvorak Technique (ADT) recently seen in news is related to which of the following?  
a) **Cyclone**  
b) Tsunami  
c) Earthquake  
d) Rainfall pattern
6. Recently Batken region in news, is situated in which of the following country?  
a) Uzbekistan  
b) Tajikistan  
c) Mongolia  
d) **Kirgizstan**
7. With reference to International Telecommunication Union (ITU) consider the following  
1. It is a specialised agency of UN with headquartered in Geneva  
2. As it is an intergovernmental organization under UN only sovereign countries can be its member  
Choose the correct statement/s using the codes given below  
a) **1 only**  
b) 2 only  
c) Both 1 and 2  
d) Neither 1 nor 2
8. Consider the following statements about Unlawful Activities (Prevention) Act (UAPA)  
1. Passed in 2004, the law aims at effective prevention of unlawful activities associations in India.  
2. It has life imprisonment but not death penalty as highest punishment  
Which of the above statements is/are correct?  
a) 1 only  
b) 2 only  
c) Both 1 and 2  
d) **Neither 1 nor 2**
9. Consider the following statements with regards to plastic pollutions  
1. The atomic structure of plastic or the monomer is essentially made up of carbon and hydrogen that has a strong bond which make plastic non-biodegradable and causing plastic pollution.  
2. Till now no plant/animal/bacteria exists has the ability to break down the bonds between carbon and hydrogen atoms of the monomer of plastic.  
3. In exposure to ultra violet rays of sunlight, plastic breaks down into very small pieces known as micro plastics.  
Choose the correct statement using the codes given below  
a) 1 and 2 only  
b) 1 and 3 only  
c) 2 and 3 only  
d) **1,2,3**
10. Malampuzha dam often mentioned in news is located in which state?  
a) Karnataka  
b) **Kerala**  
c) Tamil Nadu  
d) Andhra Pradesh