

# SosinClasses

**INSTITUTE FOR IAS EXAMINATION**

(IAS, IFS, IPS, IRS, IRMS, IFoS & Other Civil Services)

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DAILY NEWS DIARY

Of

**10.05.2022**

**FOR PRELIMS AND MAINS**

Warm Greetings.

- DnD aims to provide every day news analysis in sync with the UPSC pattern.
- It is targeted at UPSC – Prelims & Mains.
- Daily articles are provided in the form of Question and Answers
- To have a bank of mains questions.
- And interesting to read.
- Providing precise information that can be carried straight to the exam, rather than over dumping.

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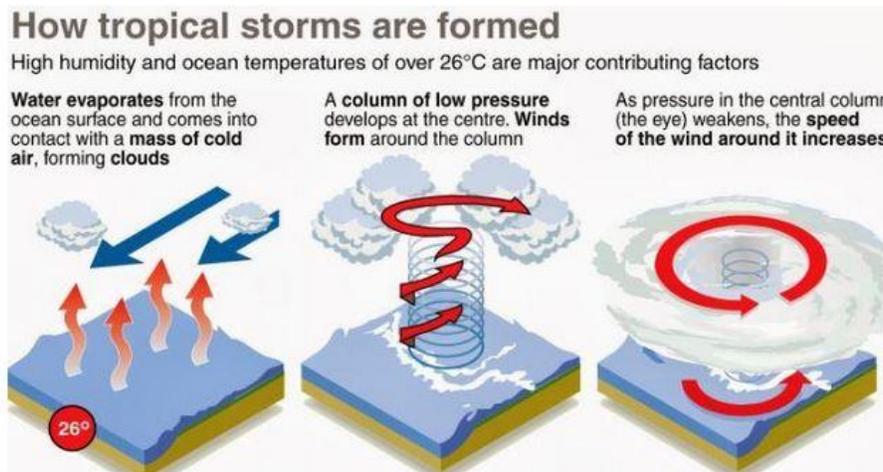
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**GS 1****❖ GEOGRAPHY**

**Q) In the context of the frequent recurrence of the cyclones in India, explain how tropical cyclones are formed.**

**Context:**

Severe cyclonic storm 'Asani', packing winds above 105 kmph and setting off heavy rain, is likely to make landfall on the eastern coast of India.

**Tropical Cyclones:**

- A tropical cyclone is an intense circular storm that originates over warm tropical oceans and is characterized by low atmospheric pressure, high winds, and heavy rain.
- Cyclones are formed over slightly warm ocean waters. The temperature of the top layer of the sea, up to a depth of about 60 meters, need to be at least 28°C to support the formation of a cyclone.
- This explains why the April-May and October-December periods are conducive for cyclones.
- Then, the low level of air above the waters needs to have an 'anticlockwise' rotation (in the northern hemisphere; clockwise in the southern hemisphere).
- During these periods, there is an ITCZ in the Bay of Bengal whose southern boundary experiences winds from west to east, while the northern boundary has winds flowing east to west.
- Once formed, cyclones in this area usually move northwest. As it travels over the sea, the cyclone gathers more moist air from the warm sea which adds to its heft.

**Requirements for a Cyclone to form:**

There are six main requirements for tropical cyclogenesis:

1. Sufficiently warm sea surface temperatures
2. Atmospheric instability

3. High humidity in the lower to middle levels of the troposphere
4. Enough Coriolis force to develop a low-pressure centre
5. A pre-existing low-level focus or disturbance
6. Low vertical wind shear

**How are the cyclones named?**

- a. In 2000, a group of nations called WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific) decided to name cyclones.
- b. It comprised Bangladesh, India, the Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand, decided to start naming cyclones in the region.
- c. After each country sent in suggestions, the WMO/ESCAP Panel on Tropical Cyclones (PTC) finalised the list.
- d. The WMO/ESCAP expanded to include five more countries in 2018 — Iran, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

**Why is it important to name cyclones?**

- ✓ Adopting names for cyclones makes it easier for people to remember, as opposed to numbers and technical terms.
- ✓ It's easier and less confusing to say "Cyclone Titli" than remember the storm's number or its longitude and latitude.
- ✓ Apart from the general public, it also helps the scientific community, the media, disaster managers etc.
- ✓ With a name, it is also easy to identify individual cyclones, create awareness of its development, rapidly disseminate warnings to increase community preparedness etc.

**Source: The Hindu**

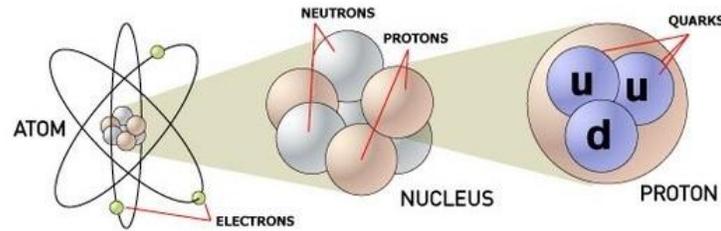
**GS 3****❖ SCIENCE & TECHNOLOGY**

**Q) What are W Bosons? Explain the debates over W Boson's mass.**

**Context:**

Researchers from Collider Detector at Fermilab (CDF) Collaboration, in the US, announced that they have made a precise measurement of the mass of the so-called W boson.

The Standard Model is the collection of theories that describe the smallest experimentally observed particles of matter and the interactions between energy and matter.



Three categories of particles form the **Standard Model**. Matter is composed of **fermions (quarks and leptons)**. **Bosons** provide three forces: **electromagnetism**, the **strong** nuclear force and the **weak** nuclear force.

Currently the Standard Model is incomplete and does not explain many important features of the known universe, such as:

- **gravity**
- **mass**
- **dark matter** (23% of the universe)
- **dark energy** (73% of the universe)

Elementary Particles in the Standard Model						
FERMIONS			FORCE-CARRIERS			
<b>u</b> UP	<b>c</b> CHARM	<b>t</b> TOP	<b>γ</b> PHOTON	<b>g</b> GLUON	<b>Z<sup>0</sup></b> WEAK FORCE	
<b>d</b> DOWN	<b>s</b> STRANGE	<b>b</b> BOTTOM				
<b>ν<sub>e</sub></b> ELECTRON NEUTRINO	<b>ν<sub>μ</sub></b> MUON NEUTRINO	<b>ν<sub>τ</sub></b> TAU NEUTRINO				
<b>e</b> ELECTRON	<b>μ</b> MUON	<b>τ</b> TAU				
LEPTONS						<b>W<sup>±</sup></b> WEAK FORCE

### W Boson:

- Discovered in 1983, the W boson is a fundamental particle.
- Together with the Z boson, it is responsible for the weak force, one of four fundamental forces that govern the behaviour of matter in our universe.
- Particles of matter interact by exchanging these bosons, but only over short distances.
- The W boson, which is electrically charged, changes the very make up of particles.
- It switches protons into neutrons, and vice versa, through the weak force, triggering nuclear fusion and letting stars burn.
- This burning also creates heavier elements and, when a star dies, those elements are tossed into space as the building blocks for planets and even people.

### Debate over W Boson's mass:

- The weak force was combined with the electromagnetic force in theories of a unified electroweak force in the 1960s, in an effort to make the basic physics mathematically consistent.
- But the theory called for the force-carrying particles to be massless, even though scientists knew the theoretical W boson had to be heavy to account for its short range.
- Theorists accounted for the mass of the W by introducing another unseen mechanism. This became known as the Higgs mechanism, which calls for the existence of a Higgs boson.

**Present context:**

1. CDF researchers stated that this precisely determined value did not match with what was expected from estimates using the standard model of particle physics.
2. This result is highly significant because this implies the incompleteness of the standard model description.
3. This is a major claim, since the standard model has been extraordinarily successful in the past decades.
4. Hence, physicists are looking for corroboration from other, independent, future experiments.

**Standard model of elementary particle physics:**

- The Standard Model of particle physics is the theory describing three of the four known fundamental forces (the electromagnetic, weak, and strong interactions while omitting gravity) in the universe and classifying all known elementary particles.
- It is a theoretical construct in physics that describes particles of matter and their interaction. Ex. Proton, Neutron, Electron etc.
- It is a description that views the elementary particles of the world as being connected by mathematical symmetries, just as an object and its mirror image are connected by a bilateral (left–right) symmetry.
- These are mathematical groups generated by continuous transformations from, say, one particle to another.
- According to this model there are a finite number of fundamental particles which are represented by the characteristic “eigen” states of these groups.
- The particles predicted by the model, such as the Z boson, have been seen in experiments and the last to be discovered, in 2012, was the Higgs boson which gives mass to the heavy particles.

**Why is the standard model believed to be incomplete?**

- The standard model is thought to be incomplete because it gives a unified picture of only three of the four fundamental forces of nature and it totally omits gravity.
- So, in the grand plan of unifying all forces so that a single equation would describe all the interactions of matter, the standard model was found to be lacking.
- The other gap in the standard model is that it does not include a description of dark matter particles.

**Where do we stand now in terms of new physics?**

- ✓ New physics is in the air, and experiments have been gearing up for some years now to detect new particles.
- ✓ With its high-precision determination of the W boson mass, the CDF has struck at the heart of the standard model.
- ✓ So, it is a significant finding and if this is confirmed by the LHC and other experiments, it will throw open the field for ideas and experiment.

**Source: The Hindu**

## ❖ ECONOMY

### Q) Analyse the tax evasion involved in the Xiaomi scam.

#### Context:

Last week, the Enforcement Directorate had seized Rs 5551.27 crore (\$725 million) from the local bank accounts of the Chinese smartphones company, Xiaomi.

#### Unfolding the Xiaomi Scam:

- Xiaomi faces charges of having made illegal remittances to foreign entities by passing them off as royalty payments.
- It is a charge that Xiaomi has been continuously facing in India.
- The 'royalty and licence fee' paid by Xiaomi India were not being added to the transaction value of the goods imported by the company and its contract manufacturers.
- By not adding "royalty and licence fee" into the transaction value, Xiaomi was evading Customs duty.

#### Recent probe:

- The Enforcement Directorate has seized the bank account assets from Xiaomi Technology India, under the provisions of Foreign Exchange Management Act (FEMA).
- The company had remitted over Rs 5500 crore to foreign-based entities, including one Xiaomi group entity, in the guise of royalty payments.
- Such huge amounts in the name of royalties were remitted on the instructions of their Chinese parent group entities.

#### Xiaomi's response:

- Xiaomi, for its part, said that it is committed to working closely with government authorities to clarify any misunderstandings.
- It argued that the royalty payments and statements to the bank are all legit and truthful and were made for the in-licensed technologies and IPs used in our Indian version products.
- It is a legitimate commercial arrangement for Xiaomi India to make such royalty payments.
- But it is a typical corporate response, something on the lines that Xiaomi did on the previous occasion too.

#### China' response:

- China firmly supports its companies in protecting their lawful rights and interests.
- It urged India to provide a fair, just and non-discriminatory business environment for Chinese companies making investment and operating in the country.
- It is visible that China has made a dovish statement as they usually do.
- Xiaomi now has alleged its top executives faced threats of "physical violence" and coercion during questioning by ED.

**Indian Govt. on strong wicket:**

- ✓ Indian governmental authorities have made it clear that the Chinese companies were not being targeted.
- ✓ And financial misdemeanours had indeed been committed by these companies.
- ✓ The government has also explained the various cases in details and what it has seized so far.
- ✓ But the Chinese companies seem to be playing the victim card.

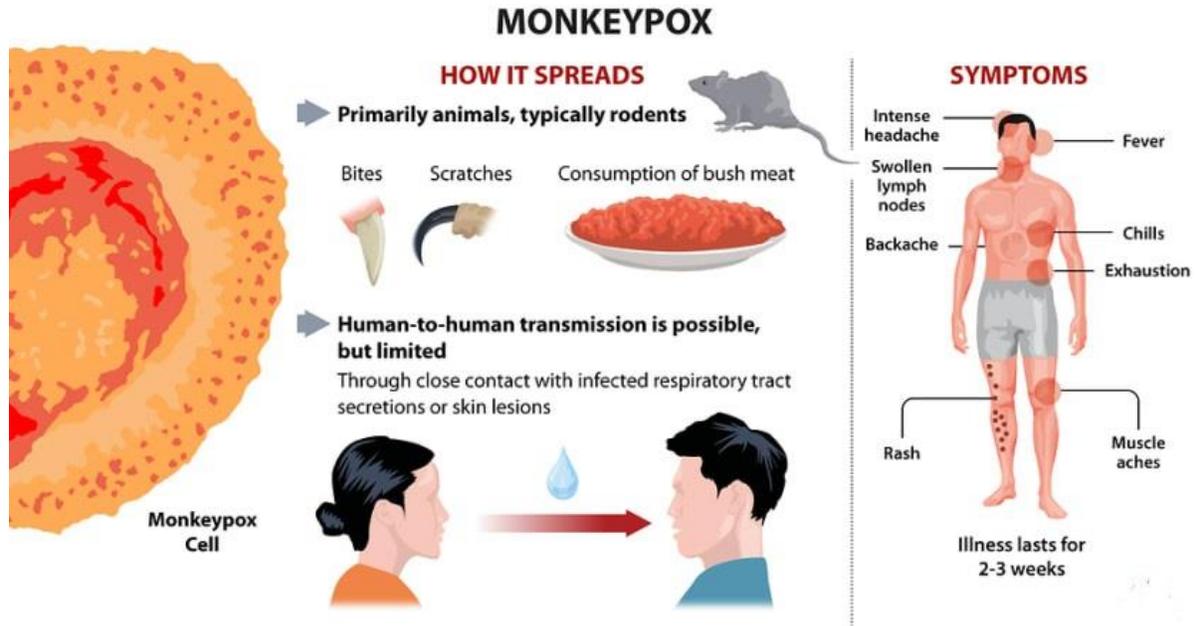
**Source: The Hindu**

**SNIPPETS****GS 3****❖ HEALTH SCIENCE****Q) Assess the origin and severity of the monkey pox.****Context:**

The UK health authorities have confirmed a case of Monkeypox, which is a virus passed from infected animals such as rodents to humans, in someone with a recent travel history to Nigeria where they are believed to have caught it.

**Monkeypox:**

- The monkeypox virus is an orthopoxvirus, which is a genus of viruses that also includes the variola virus, which causes smallpox, and vaccinia virus, which was used in the smallpox vaccine.
- It causes symptoms similar to smallpox, although they are less severe.
- While vaccination eradicated smallpox worldwide in 1980, monkeypox continues to occur in a swathe of countries in Central and West Africa, and has on occasion showed up elsewhere.
- According to the WHO, two distinct clades are identified: the West African clade and the Congo Basin clade, also known as the Central African clade.



#### Its origin:

- Monkeypox is a zoonosis, that is, a disease that is transmitted from infected animals to humans.
- Monkeypox virus infection has been detected in squirrels, Gambian poached rats, dormice, and some species of monkeys.
- According to the WHO, cases occur close to tropical rainforests inhabited by animals that carry the virus.

#### Symptoms and treatment:

- a. Monkeypox begins with a fever, headache, muscle aches, back ache, and exhaustion.
- b. It also causes the lymph nodes to swell (lymphadenopathy), which smallpox does not.
- c. The WHO underlines that it is important to not confuse monkeypox with chickenpox, measles, bacterial skin infections, scabies, syphilis and medication-associated allergies.
- d. The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days.
- e. There is no safe, proven treatment for monkeypox yet.

**Source: The Hindu**

**Q) With respect to the Members of Parliament Local Area Development Scheme (MPLADS) program, which of the following statements are correct?**

- a. MPLADS program was first launched Atal Bihari Vajpayee government in 1996.
- b. Individual MPs are entitled Rs 5 Crore for every two years.
- c. Funds should be used to create durable assets like public health, education, etc.
- d. District authority must inspect at least 10% of all works under implementation.

 **Hey from Yesterday –**

**Q) Which one of the following served as the highest court of appeal before the Supreme Court was established by the Constitution of India?**

- a. Privy Council
- b. Allahabad High Court
- c. Federal Court
- d. None of the above

**Answer: a**

**Explanation:**

- During the British regime, the King in Council, or Privy Council as it was generally called, was the highest forum to entertain appeals from the judgments and orders passed by the courts in India.
- On enactment of the Judicial Committee Act, 1833, it came to be called the Judicial Committee of Privy Council. The decisions of the Judicial Committee used to be couched in advisory form, though, in practice, the Crown always accepted its advice.
- The Privy Council acted as a channel, through which English concepts came to be assimilated with Indian laws. It served as a bridge between the Indian and the English legal system.
- However, there was a rising demand for establishment of Supreme Court in India, since it was felt that appeal to the Privy Council was very costly and beyond the means of common man.
- The Government of India Act, 1935 provided for the establishment of a Federal Court to interpret the Act and adjudicate disputes relating to the federal matters.
- To begin with, Federal Court had a very limited jurisdiction, confined to original jurisdiction in disputes between the centre and constituent units or inter se amongst the latter, advisory jurisdiction and appellate jurisdiction on a certificate from the High Court. Appeals from Federal Court could go to the Privy Council.
- In cases involving interpretation of Constitution, the parties had to first go to Federal Court in appeal from the High Court, and in other cases appeals from High Courts lay directly to the Privy Council. **Hence, Option (a) is correct.**

**UPSC - CSE****OUR PROGRAMS TARGETING 2022 – 23  
OFFLINE / ONLINE  
COURSES OFFERED****GS RAPID REVISION ONLINE COURSE FOR PRELIMS 2022**

- POLITY + GEOGRAPHY MODULE FROM 2<sup>nd</sup> May to 9<sup>th</sup> May 2022
- SCIENCE & TECHNOLOGY MODULE FROM 10<sup>th</sup> May to 12<sup>th</sup> May 2022
- HISTORY MODULE FROM 10<sup>th</sup> May to 20<sup>th</sup> May 2022
- CURRENT AFFAIRS MODULE FROM 13<sup>th</sup> May to 19<sup>th</sup> May 2022

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- OFFLINE COMPREHENSIVE & FOUNDATION COURSE FROM: 22<sup>nd</sup> JUNE 2022
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- FOUNDATION COURSE 29<sup>th</sup> JUNE 2022 (ONLINE)
- ANTHROENHANCE TEST SERIES FROM 2<sup>nd</sup> JULY 2022 (OFFLINE/ONLINE)