

INTERNATIONAL BIOLOGY OLYMPIAD

Recently, India topped the medals tally at the 34th International Biology Olympiad (IBO) 2023 which was held in Al Ain, UAE, from July 3 to 11.



About International Biology Olympiad:

- It is a biological Olympiad for **pre-university students under the age 20**, and is one of the most well-known International Science Olympiads.
- The first **IBO was held in Czechoslovakia in 1990**, and it has since been held annually.
- The competition has gradually expanded to include more than 75 participating countries across five continents.
- All participating countries **send the four winners of their National Biology Olympiad** to the IBO, usually accompanied by two adults who are members of the international jury, for the duration of the competition.
- To select these top four life science contestants for this international competition, all member countries host Biology Olympiad competitions in typically 3-5 consecutively more difficult national competition rounds.
- As a consequence, this leads to a trickle-down effect, engaging more than 1 million students worldwide in life science each year.
- Every year it is being **organised by a different country**.
- India organized this Olympiad in 2008

ENFORCEMENT DIRECTORATE (ED)

- **About**
 - The Enforcement Directorate was established in the year 1956 as an 'Enforcement Unit' under the Department of Economic Affairs.
 - Later, in 1957, this Unit was renamed as 'Enforcement Directorate'.
- **Administrative control**

- Presently, it is under the administrative control of the Department of Revenue (under the Ministry of Finance) for operational purposes.

Functions

- ED is responsible for enforcement of the Foreign Exchange Management Act, 1999 (FEMA), and certain provisions under the PMLA.
- ED has the power to attach the asset of the culprits found guilty of the violation of FEMA.
- It has also been empowered to undertake, search, seizure, arrest, and survey, etc. against the offences committed under PMLA.

Appointment of Director of ED

- The ED Director is appointed by the central government on the recommendation of a committee:
 - chaired by the Central Vigilance Commissioner and
 - members comprising of Vigilance Commissioners, Home Secretary, Secretary DOPT and Revenue Secretary.

WHAT IS A SCHENGEN VISA?

As per new data released, India became the second country with the highest rejection rate for the Schengen Visa last year.



About Schengen Visa:

- It is an official document mandatory for some non-Europeans to travel to all the 27 countries which are part of the Schengen area.
- Once granted, this visa allows the traveller to cross the borders of the other member-states without going through identity checks at the border.
- This type of visa is issued by one of the Schengen States and allows you to visit any of the Schengen countries for a duration of up to 90 days in total within 180 days.

What is the Schengen Area?

- The Schengen Area, or Schengen Countries Zone, is a **group of 27 European nations** that have **abolished their internal borders**, for the **free and unrestricted movement of people**.
 - **Members** of this area include: **23 of the 27 EU member states** (except for Bulgaria, Cyprus, Ireland and Romania) and **all members of the European Free Trade Association** (Iceland, Liechtenstein, Norway and Switzerland).
 - **Switzerland, Iceland, and Norway are not in the EU but are inside of the Schengen Area.**
 - **Being part of this area means that countries:**
 - **do not carry out checks at their internal borders**, except in cases of specific threats;
 - **carry out harmonized controls at their external borders**, based on clearly defined criteria.
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WHAT IS A MONEY MULE?

Young people under the age of 21 account for around one in five cases in the UK where money muling activity is suspected, according to new figures.



About Money Muling:

- A money mule is **someone who transfers or moves illegally acquired money on behalf of someone else.**
 - **Criminals recruit money mules to help launder proceeds** derived from online scams and frauds or crimes like human trafficking and drug trafficking.
 - Money mules **add layers of distance between crime victims and criminals**, which makes it **harder for law enforcement to accurately trace money trails.**
 - Money mules **can move funds in various ways**, including through bank accounts, cashier's checks, virtual currency, prepaid debit cards, or money service businesses.
 - **Some money mules know they are supporting criminal enterprises; others are unaware that they are helping criminals' profit.**
 - When such frauds are reported, the **money mule becomes the target of police investigations.**
 - Money mules **often receive a commission for their service, or they might provide assistance because they believe they have a trusting relationship** with the individual who is asking for help.
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WHAT IS E-WAY BILL?

The GST Council meeting recently gave sanction to issue the order making e-way bill mandatory for intra-state transportation of gold, gold jewellery and precious stones.



About E-Way Bill:

• An e-way bill, short form for electronic way bill, is a permit needed for inter-state and intra-state transportation of goods worth more than Rs.

50,000.

- It contains details of the goods, the consignor, the recipient and the transporter.
- It can be electronically generated through the Goods and Services Tax Network (GSTN).
- When an e way bill is generated, a unique E-way Bill Number (EBN) is allocated and is available to the supplier, recipient, and the transporter.
- **Working:**
 - E-way bill must be raised before the goods are shipped and should include details of the goods, their consignor, recipient and transporter.
 - Though check-posts have been abolished under GST, a consignment can be intercepted at any point for the verification of its E-way bill, for all inter-State and intra-State movement of goods.
 - If a consignment is found without an E-way bill, a penalty of ₹10,000 or tax sought to be evaded, whichever is greater, can be levied.
- **Coverage:**
 - The GST e-way bill became mandatory from April 1, 2018 for all inter-state transport of goods valued above Rs 50,000.
 - Starting from April 15, 2018, it was made compulsory for the moving goods within a state in a phased manner.
- **Validity:** The e-way bill's validity varies depending on the distance that the goods have to travel. Typically, the bill's validity is one day for every 100 km of movement of goods.

- **Goods excluded from e-way bill's ambit: Perishable items** (such as meat, milk and milk products and fruits and vegetables), **gold and silver jewellery, cooking gas cylinders, raw silk, wool and handlooms.**
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CHANDRAYAAN-3 MISSION - WHY ISRO WANTS TO EXPLORE THE MOON'S SOUTH POLE

Why in news?

- India is set to launch Chandrayaan-3, India's third lunar mission, from Andhra Pradesh's Sriharikota on July 14.
- If everything goes well, the Chandrayaan-3 will become the **world's first mission to soft-land near the lunar south pole.**
 - All the previous spacecraft that have landed on the Moon have landed in the equatorial region, a few degrees latitude north or south of the lunar equator.

The Chandrayaan-3 Mission:

- **Chandrayaan-3** ("mooncraft") is a planned **3rd lunar exploration mission by the ISRO** to demonstrate end-to-end capability in -
 - **Safe landing** (through the lander Vikram - after Vikram Sarabhai, the father of the Indian space programme) and
 - **Roving** (through the rover Pragyan) on the lunar surface.
- Unlike Chandrayaan-2, it will **not have an orbiter** and its propulsion module will behave like a communications relay satellite.
- Chandrayaan-3 mission has **three major modules:** the Propulsion module, Lander module, and Rover.

Why do scientists want to explore the lunar south pole?

- **Exploring the unexplored**
 - Due to their rugged environment, the polar regions of the Moon have remained unexplored.

- There are indications of the presence of ice molecules in substantial amounts in the deep craters in this region.
- India's **2008 Chandrayaan-1 mission** indicated the presence of water on the lunar surface with the help of its two instruments onboard.
- **Clue about solar region**
- The extremely cold temperatures here mean that anything trapped in the region would remain frozen in time, without undergoing much change.
- The rocks and soil in Moon's north and south poles could therefore provide clues to the early Solar System.

Why don't some parts of the lunar polar regions receive any sunlight?

- Unlike the Earth, whose **spin axis is tilted with respect to the plane of the Earth's solar orbit by 23.5 degrees**, the Moon's axis tilts only 1.5 degrees.
- Because of this unique geometry, sunlight never shines on the floors of a number of craters near the lunar north and south poles.
- These areas are known as Permanently Shadowed Regions, or PSRs.

GST COUNCIL

Why in News?

- The Goods and Services Tax (GST) Council, in its 50th meeting, decided to levy a uniform 28% tax on full face value for online gaming, casinos and horse-racing, while reducing the rate for uncooked/ unfried snack pellets, cancer medicine and imitation zari thread.

What Exactly is the Goods and Services Tax (GST)?

- It is an **indirect tax** (not directly paid by customers to the government), that came into effect from **1 July 2017** through the implementation of the **101st Amendment to the Constitution of India** by the Indian government.

- It has actually **replaced** various indirect taxes such as - service taxes, VAT, excise and others in the country.
- It is **levied on the manufacturer or seller** of goods and the providers of services.
- It is divided into five different tax slabs for collection of tax - **0%, 5%, 12%, 18% and 28%**.
- **Types of GST:** State Goods and Services Tax (SGST), Central Goods and Services Tax (CGST) and the Integrated Goods and Services Tax (IGST, on exports and imports).

What is the GST Council?

- **Article 279A** of the Indian Constitution gives power to **the President of India** to constitute a joint forum of the Centre and States called the GST Council, consisting of the -
 - Union Finance Minister - **Chairperson**
 - The Union Minister of State, in-charge of Revenue of finance - **Member**
 - The Minister in-charge of finance or taxation or any other Minister nominated by each State Government - **Members**
- The GST Council is **an apex committee** to modify, reconcile or to make recommendations to the Union and the States on GST, like the goods and services that may be subjected or exempted from GST, model GST laws, etc.
- Decisions in the GST Council are taken **by a majority** of not less than three-fourth of weighted votes cast.
 - **Centre** has one-third weightage of the total votes cast and **all the states taken together** have two-third of weightage of the total votes cast.
 - All decisions taken by the GST Council have been arrived at through consensus

E20 FUEL OUTLETS WILL HAVE PAN-INDIA PRESENCE BY 2025

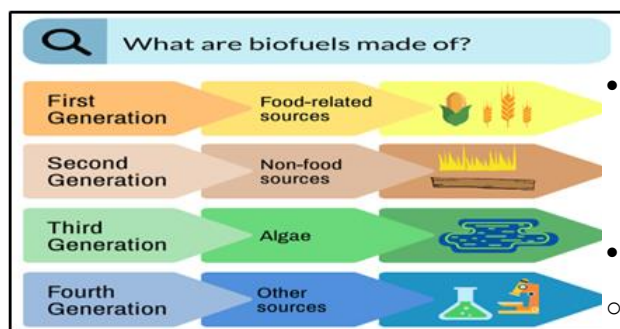
Why in News?

- E20 petrol, or petrol with 20 per cent **ethanol**, is now available at 1,350 fuel retail outlets and will be available all over the country by 2025.
- This was declared by the Union Petroleum Minister Hardeep Singh Puri.

About Biofuel:

- Biofuel is a **fuel that is produced over a short time span from biomass**, rather than by the very slow natural processes involved in the formation of fossil fuels, such as oil.
- Since biomass can be used as a fuel directly (e.g., wood logs), some people use the words biomass and biofuel interchangeably.
- However, the **word biofuel is usually reserved for liquid or gaseous fuels**, used for transportation.
- Most of biofuel consumption occurs as a blend with refined petroleum products such as gasoline, diesel fuel, heating oil, and kerosene-type jet fuel.
 - However, some biofuels do not require blending with their petroleum counterparts and are referred to as drop-in biofuels.
- The most common biofuels now are –
 - **Bioalcohols** such as ethanol, propanol, and butanol (a substitute for petrol/gasoline);
 - **Biodiesel** (a substitute for diesel);
 - **Bio-oils** (substitutes for kerosene).

Generations of Biofuel:



- Biofuels are also divided into four categories depending on their origin and production technologies.
- **First generation–**
 - **1G** biofuels are produced from **consumable food items** containing starch (rice and wheat) and sugar (beets and sugarcane) for bio-alcohols, or vegetable oils for biodiesel.
 - However, the yields of 1G biofuels are low and can have negative impacts on food security.
- **Second generation–**
 - **2G** biofuels are mainly obtained from **non-food feedstocks** such as forest/industry/agricultural wastes and waste or used vegetable oils.

- **Third generation –**

- 3G biofuels, known as ‘algae fuel’, are **derived from algae** in the form of both, biodiesel and bio-alcohols.
- Although the yield of 3G biofuels is approximately 10 times higher than 2G biofuels, producing adequate algal biomass and scaling up extraction techniques are as yet unresolved challenges.

- **Fourth generation –**

- Like the third generation, **4G** biofuels are **made using non-arable land**.
- However, unlike the third, they do not need the destruction of biomass.
- This class of biofuels includes electro fuels and photo-biological solar fuels.

How is Ethanol Produced?

- In India, the nodal department for the promotion of fuel-grade ethanol-producing distilleries is the **Department of Food and Public Distribution (DFPD)**.
- Ethanol is produced or procured from sugarcane-based raw materials which are – heavy molasses, sugarcane juice, sugar syrup, surplus rice and maize with Food Corporation of India (FCI).

What are the Benefits of Ethanol Blending?

- Presently, India imports over 85 per cent of its oil requirement and ethanol blending could help in reducing dependency on petroleum.
- In 2020-21, the net import of petroleum in India was 185 million tones at **USD 551 billion**.
- Thus, ethanol blending can help in saving billions of dollars for the country and reduce import dependency.
- Also, ethanol is a less polluting fuel and equally efficient at a lower cost than petrol.