

7<sup>th</sup> May 2017

**GS : 3 - DISASTER MANAGEMENT**

**50 school students fall ill after chemical leak**

(The Hindu)

- Over 500 students, nine teachers and a security guard, were admitted to various hospitals after they inhaled poisonous fumes from a chemical spill near their schools.
- The chemical had spilled from a container 400 metres from their schools near the Inland Container Depot (ICD) in southeast Delhi's Tughlaqabad.
- The container full of **2-chloro-5-chloromethylpyridine** used in the **manufacture of pesticides**.

**WHAT'S CHLORO METHYL PYRIDINE?**

- It's a chemical intermediary that's used in making pesticides and insecticides
- Laboratories require it to be handled with the highest level of safety
- It is linked to serious eye damage and can be toxic when in contact with skin

**ITS LEAKAGE CAN CAUSE**

- Irritation, redness, watering of eyes
- Irritation of skin/ redness
- Respiratory symptoms may include sneezing, difficulty in breathing

**GS : 3 - SCIENCE AND TECHNOLOGY**

**India's first BIO-CNG fuel plant inaugurated at Pune**

- India's first BIO-CNG fuel plant was inaugurated in Pune, Maharashtra.
- The plant has been commissioned by city-based Primove Engineering Private Limited, and will use agricultural residue to generate CNG that can be used as fuel in automobiles.

**What is Bio-CNG?**

- BIO-CNG is the purified form of biogas from which all the **unwanted gases are removed** to get more than **93 per cent of pure methane gas**.
- In its composition and energy potential it is exactly similar to the commercially available natural gas.

**A century of looking at our closest star, the sun**

- Every day, since 1904, staff at the **Kodaikanal Solar Observatory in Tamil Nadu** have aimed their telescope at the sun, freezing the images of its disc.
- This data, spanning a hundred years and more, has now been digitised by astrophysicists from the **Indian Institute of Astrophysics, Bengaluru**, and opened up to the public.

**Achievements:**

- It also throws light on major events that had an impact on the earth's magnetic field. While 'spectroheliograms' were taken at the Kodai observatory since 1902, it was in 1909 that the data was used to discover the Evershed effect – that gases in sunspots flowed radially outwards.
- The discovery by John Evershed put the KSO at par with the best observatories in the world. But its importance eventually declined as it was not upgraded or maintained.
- The 100-year data is unique also for its three sets of images, taken using different filters – **White light, H-alpha and Calcium-K**. It is known that the **sun has a layered structure**, and each of the data sets exposes a different layer.
- Under white light filtering, the sun's photosphere and the sunspots are visible, while the Calcium-K light can show layers some 2,000 km above this, in the chromosphere.
- The H-alpha images show up layers a little above the Calcium-K images. Features called "filaments" which are related to large expulsions of material from the sun's surface can be viewed in the Calcium-K sets.

**European XFEL generates its first laser beam**

- The European XFEL is going to be the world's biggest X-ray laser when it launches in September, but the science team is already celebrating as the device just completed its last major test, shining its powerful X-ray beam for the first time.

**Key facts:**

- The facility is **3.4 kilometers** (2.1 miles) long and produces X-rays through the **acceleration of electrons**, the so-called **synchrotron radiation**.
- The tiny particles are first pushed to almost the speed of light in a 2.1-kilometer (1.3-mile) accelerator tunnel and then 17,290 permanent magnets with alternating poles get them on a slalom course, forcing them to release short X-ray bursts.
- These X-rays have a wavelength of 0.8 nanometers, about the width of an atom and 500 times smaller than visible light. Their size makes the European XFEL an important instrument, as it can create pictures and movies with atomic resolution.
- Powerful X-ray lasers around the world have already been used to look at **biological and chemical reactions**, peering futher and further into the **nano** world.

**MISCELLANEOUS**

**World Water Council**

- The World Water Council is an international think tank founded in 1996, with its headquarters in **Marseille, France**.
- It has 341 members (March 2017) which include organizations from the UN and intergovernmental organizations, the private sector (construction, engineering and manufacturing companies), governments and ministries, academic institutions, international organizations, local governments, and civil society groups.
- Founders and constituent members of the World Water Council include the **International Commission on Irrigation and Drainage, the International Union for the Conservation of Nature(IUCN), the International Water Association (IWA), Suez Lyonnaise des Eaux, the United Nations agencies UNDP and UNESCO, and the World Bank**.
- Its stated mission is "to promote awareness, build political commitment and trigger action on critical water issues at all levels, including the highest decision-making level, to facilitate the efficient conservation, protection, development, planning, management, and use of water in all its dimensions on an environmentally sustainable basis for the benefit of all life on earth."
- Every third year the World Water Council organizes the World Water Forum in close collaboration with the authorities of the hosting country.
- The Forum is the largest international event in the field of water.
- 1st World Water Forum took place at **Marrakesh, Morocco in 1997**.
- The upcoming **8th World Water Forum will** take place in **Brasilia, Brazil**, from 18 to 23 March 2018 under the overarching theme 'Sharing Water'.

**CRPF Command Shifted from Kolkata to Chhattisgarh**

- The strategic anti-Naxal operations command headquarters of the Central Reserve Police Force (CRPF) has been shifted back from **Kolkata to Raipur**.

**Juvenile Justice (Care and Protection of Children) Act, 2015**

- It replaced Juvenile Justice (Care and Protection of Children) Act, 2000,
- It provides that juveniles in conflict with Law in the age group of **16-18, involved in Heinous Offences, can be tried as adults**.

**Kolkata doctor gets Asian Award**

- Dr Jack Preger, the city of joy's 'Pavement Doctor', has become the first living westerner to be honoured at the Asian Awards.
- The award was in recognition of his extraordinary service in helping the poorest of the poor in Kolkata for past 38 years.
- It is the first time that a living person, not of Asian origin, has been honoured at the awards, though Mother Teresa had received a posthumous award last year.