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e-Raktkosh portal

- e-Raktkosh portal is a Centralized Blood Bank Management System.
- It is a comprehensive IT solution to standardize and streamline the standard operating procedures, guidelines and workflow of blood banks across the nation.
- It was inaugurated in 2016 by then Minister of Health and Family Welfare (MoHWFW)
- It enforces Drug & Cosmetic Act, National blood policy standards and guidelines ensuring proper management of blood.
- e-Rakt Kosh has components for management of the blood donation life cycle which includes :
    1. The biometric Donor Management System
    2. Blood grouping,
    3. TTI screening,
    4. antibody screening,
    5. A centralized Blood Inventory Management System
    6. Bio-Medical Waste Management System for disposal of discarded blood

Blood Disorder

- A blood disorder is any condition that impacts one or more parts of the blood, usually interfering with its ability to work correctly.
- Blood disorder can be categorized as Common Blood Disorder like anemia and Rare Blood Disorder like thalassemia.
- Types of Blood Disorder

1. Blood Disorders Affecting Red Blood Cells like Anemia, Pernicious anemia (B12 deficiency), Aplastic anemia, autoimmune hemolytic anemia etc.
2. Blood disorders that affect White Blood Cells like Lymphoma, Leukemia, Multiple myeloma.
3. Blood Disorders Affecting Blood Plasma like hemophilia
4. Blood Disorders Affecting Platelets like thrombocytopenia.

World Creativity and Innovation Day

- The United Nations General Assembly adopted the resolution to celebrate World Creativity and Innovation Day in 2017.

- The first World Creativity and Innovation Day was observed in 2018.
- The United Nations aims to raise awareness about the role of creativity and innovation in all aspects of human development by celebrating the World Creativity and Innovation Day.
- The UN through this day wants to highlight the importance of creativity and innovation to achieve sustainable development goals.

Earth Day

- Every year, April 22 is celebrated as Earth Day to raise public awareness about the environment and inspire people to save and protect it.
- It was first celebrated in 1970, and is now coordinated globally by the Earth Day Network and celebrated in more than 193 countries each year.
- The year 2020 marks 50 years since the start of this modern environmental movement in 1970.
- The Earth Day also recognizes a collective responsibility, as called for in the 1992 Rio Declaration (Earth Summit), to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.
- The Paris Agreement was also opened for signature on 22 April 2016, Earth Day, at UN Headquarters in New York.
- World Earth Day encourages people to take more steps for the protection of nature and to thank mother earth for the rich environment.

Earth Day Network

- Earth Day Network is a nonprofit organization whose mission is to diversify, educate and activate the environmental movement worldwide.
- EDN main office is located in Washington DC, USA.
- Other significant days

a. 22 March: World Water Day
b. 22 April: Earth Day
c. 22 May : World Biodiversity Day

- Recently the Earth Hour was observed on 28th March, 2020,It encourages people to switch off the lights from 8.30 pm to 9.30 pm as per their local time.

Lithium

- Lithium (Li), is one of the three primordial elements, apart from Hydrogen and Helium (He), produced in the big bang nucleosynthesis (BBN).
- It is known as miracle element, since it as following properties

1. Highly reactive
2. Lightest of all Metals
3. Least dense solid element
4. Highest specific heat capacity
5. High electrochemical potential

Li- Red Clump Giants

- Indian Institute of Astrophysics (IIA) has discovered hundreds of Lithium (Li) rich giant stars which indicate that lithium is being produced in the stars and accounts for its abundance in the interstellar (between stars) medium.
- The scientists have discovered a number of super Li-rich giants with the Li quantity equal to or in some cases, more than 10 times the present value, A(Li) = 3.2 dex (measured in logarithmic scale relative to hydrogen).
- Hundreds of Li-rich giants were discovered by employing data from large scale ground and space missions.
- For the first time, it was shown that the Li enhancement in giants is associated only with central He-burning stars (also known as the Red Clump Giants)
- This discovery will help to eliminate or validate many proposed theories such as planet engulfment or Big Bang Nucleosynthesis (BBN) during the red giant evolution in which helium at the center is not burning.
- Stars are also proposed as a likely Li source in the Galaxy and are considered as Li sinks.

Planetary Engulfment

- In the universe, planets accompany host stars (like the Sun is the host star for the planets of the Solar system).
- As the host star evolves off the main sequence to become a white dwarf, the planets with sufficiently close orbits can be engulfed during the giant phase.
- Planetary engulfment events involve the chemical assimilation of a planet into a star's external layer.
- This can cause a change in the chemical pattern of the stellar atmosphere in a way that mirrors the composition of the rocky object engulfed.

Big Bang Nucleosynthesis

- It is the leading explanation about how the universe began.
- At its simplest, it says that the universe started with a small singularity and then inflated over the next 13.8 billion years to the cosmos currently observed.
- It is the production of nuclei other than those of the lightest isotope of

hydrogen during the early phases of the Universe.

- Primordial nucleosynthesis is believed by most cosmologists to have taken place in the interval from roughly 10 seconds to 20 minutes after the Big Bang.
- The Universe's light-element abundance is another important criterion by which this theory is verified.
- It is now known that the elements observed in the Universe were created in either of two ways.

1. **Light elements** (namely deuterium, helium, and lithium) were produced in the first few minutes of the Big Bang.
2. **Elements heavier than helium** are thought to have their origins in the interiors of stars which formed much later in the history of the Universe.

- The theory predicts that roughly 25% the mass of the Universe consists of Helium.
- It also predicts about 0.01% deuterium, and even smaller quantities of lithium.

Source: PIB, First Post, The Hindu, India Today

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