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DRDO's Oral Drug 2-DG

- The anti-Covid-19 drug, 2-deoxy-D-glucose (2-DG) was developed by the Institute of Nuclear Medicine and Allied Sciences (INMAS), a lab of the Defence Research and Development Organisation (DRDO).
- The Drugs Controller General of India had cleared the formulation for emergency use as an adjunct therapy in moderate to severe Covid-19 patients.
- **Working** - The drug is available in powder form in a sachet, and can be taken orally after dissolving in water.
- The drug accumulates in virus-infected cells, and prevents the growth of virus by stopping viral synthesis and energy production.
- Its selective accumulation in virally-infected cells makes it unique.
- **Advantages** - 2-DG being a generic molecule and an analogue of glucose, it can be easily produced and made available in large quantities.
- The molecule helps in faster recovery of patients hospitalised with Covid-19, and reduces their dependence on supplemental oxygen.
- In efficacy trends, the patients treated with 2-DG showed faster symptomatic cure than Standard of Care (SoC) on various endpoints.

SAMVEDNA

- Sensitizing Action on Mental Health Vulnerability through Emotional Development and Necessary Acceptance (SAMVEDNA) is a Toll-Free Helpline for Children.
- It was launched by the National Commission for Protection of Child Rights (NCPCR) to provide psycho-social first-aid and mental support for Children affected during COVID 19 Pandemic.
- It is provided on a toll-free No: 1800-121-2830 from Monday to Saturday from 10 a.m. to 1 p.m. and 3 p.m. to 8 p.m. in various regional languages.
- Tele counselling is provided to the children under three categories:
    1. Children who are in Quarantine/isolation/COVID Care centers.
    2. Children who have COVID positive parents or family members and near ones.
    3. Children who have lost their parents due to Covid-19 Pandemic.

National Commission for Protection of Child Rights (NCPCR)

- It is a statutory body set up in 2007 under the Commissions for Protection of Child Rights (CPCR) Act, 2005. It works under the aegis of Ministry of Women and Child Development, Govt. of India.
- Under the NCPCR, the Child is defined as a person in the 0 to 18 years age group.
- **Mandate** - To ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights perspective as enshrined in,
    1. The Constitution of India and
    2. The UN Convention on the Rights of the Child.
- It inquires into complaints relating to a child's right to free and compulsory education under the Right to Education Act, 2009.
- It monitors the implementation of Protection of Children from Sexual Offences (POCSO) Act, 2012.

SWAMIH Investment Fund

- The Special Window for Affordable & Mid-Income Housing (SWAMIH) Fund has completed its first residential project - Rivali Park, Mumbai.
- The SWAMIH Fund was set up in 2019 as a Category-II Alternate Investment Fund (AIF) debt fund registered with SEBI.
- Through the SWAMIH Fund, the Government had provides **Last Mile Funding** to the RERA-registered stressed affordable and mid-income housing projects thereby giving relief to the home buyers. It also funds,

1. Stalled projects that are net-worth positive,
2. Projects that were declared as Non-Performing Assets (NPAs),
3. Projects pending proceedings before the National Company Law Tribunal under the Insolvency and Bankruptcy Code,

- **Sponsor of the Fund** - Secretary, Department of Economic Affairs, Ministry of Finance, on behalf of the Government of India.
- **Investment Manager of the Fund** - SBICAP Ventures, a wholly-owned subsidiary of SBI Capital Markets, which is a wholly-owned subsidiary of the State Bank of India.

Climate Change destroying the Oldest Cave Art

- A new study has found that one of the oldest pieces of the world's human heritage in Sulawesi island of Indonesia is weathering at an alarming rate due to climate change.
- **Significance** -The Sulawesi cave art is much older than the prehistoric cave art of Europe.
- These Pleistocene-era rock paintings found in caves of the Maros-Pangkep

region in southern Sulawesi date back to 45,000-20,000 years.

- The area is known to be home to over 300 cave paintings, and more are being discovered with further explorations.
- **Artwork** in the area includes the world's oldest hand stencil (almost 40,000 years ago), created by pressing the hand on a cave wall, and spraying wet red-mulberry pigments over it.
- A nearby cave features the world's oldest depiction of an animal, a warty pig painted on the wall 45,500 years ago.
- **Findings of the Study** - The flakes of rock that have begun to detach from cave surfaces had calcium sulphate and sodium chloride salts. These salts form crystals on rock surfaces, causing them to break.
- The artwork made with pigments was decaying due to haloclasty process.
- This is a process triggered by the growth of salt crystals due to repeated changes in temperature and humidity, caused by alternating wet and dry weather in the region.
- Indonesia has also experienced several natural disasters in recent years, which have quickened the process of deterioration.
- **Recommendations** - Regular physical and chemical monitoring of the cave art sites would help.

Lightning kills 18 Elephants

- Eighteen elephants died on a hilltop in Assam after being struck by a single flash of lightning. They died due to the current flowing through the ground called 'step potential'.
- Many elephants can be killed in a single lightning flash as, in a single lightning flash, the current flows to the ground several times. These are termed **subsequent strokes**.
- There is a possibility of each subsequent stroke attaching to different nearby objects due to a few reasons explainable in physics.
- Since an elephant's front and hind feet are wide apart, it would appear to make it more vulnerable than a smaller animal, such as a rat.
  - The potential difference increases with increasing distance between the two feet.
  - The larger the potential difference, the greater the current through the body.

Ways Lightning kill Animals

- **Direct Flash** - An animal in an open field may be struck directly by lightning if part of its body protrudes over other objects in the vicinity. Taller animals are more vulnerable.
- **Side Flash** - When lightning strikes a tall object such as a tree, it may

generate a side flash that can strike an animal standing underneath the tree.

- **Touch Potential** - If one part of a tall animal's body is in contact with the ground while another part, at a higher elevation, comes in contact with a lightning-struck object, a partial current may pass through its body.
- **Step Potential** - When an animal's front and hind feet are far enough apart, a partial current may pass through the body in certain circumstances.
- This is the most common lightning hazard among four-legged animals.

American Red-eared Slider

- The invasive red-eared slider (), released in natural water bodies by people who keep them as pets, could threaten to invade the natural water bodies across the Northeast.
    - Northeast is home to 21 of the 29 vulnerable native Indian species of freshwater turtles and tortoises (72% of the turtle and tortoise species in India).
- The red-eared slider (Trachemys scripta elegans) derives its name from red stripes around the part where its ears would be and from its ability to slide quickly off any surface into the water.
- Native to the **U.S. and northern Mexico**, this turtle is a popular pet due to its small size, easy maintenance, and relatively low cost.
- But, they grow fast and virtually leaves nothing for the native species to eat. Hence, they are **invasive species**.
- **Catch-22 situation** - People who keep red-eared slider as pets become sensitive about turtle conservation but endanger the local ecosystem by releasing them in natural water bodies after they grow big.
- Also, these turtles can impact human health as they may accumulate toxins in their tissues which pass on with the food chain upto humans.

Source: PIB, The Hindu, The Indian Express