



12 March, 2024

Revamped Pharmaceuticals Technology Upgradation Assistance Scheme

Context: The Ministry of Chemicals and Fertilizers' Department of Pharmaceuticals has unveiled the Revamped Pharmaceuticals Technology Upgradation Assistance Scheme (RPTUAS).

➤ Key Features of the Revised Scheme:

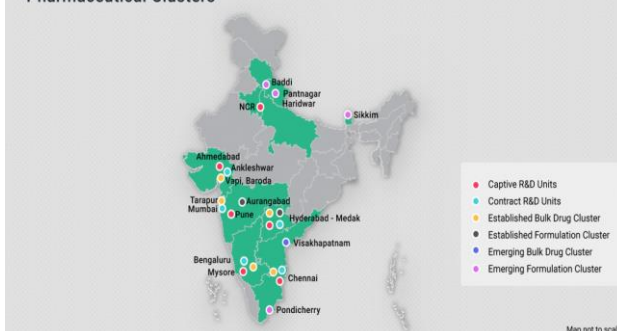
- **Broadened Eligibility Criteria:**
 - Eligibility expanded beyond Micro, Small, and Medium Enterprises to include any pharmaceutical manufacturing unit with a turnover of less than 500 crores.
 - Preference remains for MSMEs, supporting smaller players in achieving high-quality manufacturing standards.
- **Flexible Financing Options:**
 - Introduces more flexible financing options, emphasizing subsidies on a reimbursement basis rather than a traditional credit-linked approach.
 - Designed to diversify financing options for participating units, facilitating wider adoption of the scheme.
- **Comprehensive Support for Compliance:**
 - Supports a broader range of technological upgrades in alignment with revised Schedule-M and WHO-GMP standards.
 - Eligible activities include improvements in HVAC systems, water and steam utilities, testing laboratories, stability chambers, clean room facilities, effluent treatment, waste management, etc.
- **Dynamic Incentive Structure:**
 - Incentives provided based on average turnover for the last three years, subject to a maximum of Rs. 1.00 crore per unit.
 - Incentive percentages vary based on turnover range, ranging from 10% to 20% of investment under eligible activities.
- **State Government Scheme Integration:**
 - Allows integration with state government schemes, providing units with additional top-up assistance.
 - Collaborative approach aims to maximize support for the pharmaceutical industry in their technology upgradation efforts.
- **Enhanced Verification Mechanism:**
 - Introduces a robust verification mechanism through a Project Management Agency.
 - Ensures transparency, accountability, and efficient resource allocation.

➤ Pharmaceutical Industry in India

- **Segments of Indian Pharmaceutical Industry:**
 - **Generic Drugs:** India is a major supplier of generic medicines globally.
 - **OTC Medicines:** Over-the-counter medicines are widely produced and distributed in the Indian pharmaceutical market.

- **Bulk Drugs:** India manufactures a significant portion of bulk drugs used in pharmaceutical production.
- **Vaccines:** India is a global leader in vaccine production, particularly for DPT, BCG, and Measles vaccines.
- **Contract Research & Manufacturing:** Many pharmaceutical companies in India offer contract research and manufacturing services.
- **Biosimilars:** India has a growing market for biosimilars, with several companies investing in their development.
- **Biologics:** The biologics segment is also emerging in the Indian pharmaceutical industry.
- **India's Role in Vaccine Production:**
 - India is a major supplier of low-cost vaccines worldwide.
 - It produces 60% of global vaccine supply, meeting up to 70% of WHO demand for DPT and BCG vaccines, and 90% of demand for measles vaccine.
- **Global Leadership in Generic Medicines:**
 - India occupies a 20% share in global supply of generic medicines by volume.
 - It is the largest provider of generic medicines globally, offering about 60,000 different brands across 60 therapeutic categories.
- **Manufacturing Strength:**
 - India has over 3,000 pharmaceutical companies and more than 10,500 manufacturing facilities.
 - It boasts the highest number of US-FDA compliant Pharma plants outside the USA.
 - API Industry Contribution: India's 500 API manufacturers contribute about 8% to the global API industry.
- **FDI Regulations:**
 - 100% FDI is allowed in the pharmaceutical sector under the automatic route for greenfield pharmaceuticals.
 - For brownfield pharmaceuticals, 100% FDI is permitted, with 74% allowed under the automatic route and the remainder through government approval.

Pharmaceutical Clusters



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12 March, 2024

Bhojshala

Context: Following the survey at Gyanvapi Mosque, the Archaeological Survey of India (ASI) is set to conduct a survey at Dhar Bhojshala in Madhya Pradesh.

- The ASI has been directed to utilize all available methods and cutting-edge equipment, such as Ground Penetration Radar System and carbon dating, to determine the age of the structure.

➤ Overview of Bhojshala:

- Bhojshala, also known as Bhojaśālā or Bhoj Shala, is a historic temple situated in Dhar, Madhya Pradesh, India.
- The name originates from King Bhoja of the Paramāra dynasty, renowned for his patronage of education and the arts.
- The architectural components of the structure belong to various periods but primarily date back to the 12th century, with Islamic tombs added between the 14th and 15th centuries.

➤ Current Status:

- Designated as a Monument of National Importance, Bhojshala is protected by the Archaeological Survey of India (ASI) under the Archaeological Sites and Remains Act, 1958.
- As per ASI guidelines, Muslims may pray on Fridays, while Hindus have access for prayers on Tuesdays and during the festival of Vasant Panchami. Visitation to the site is allowed on other days.

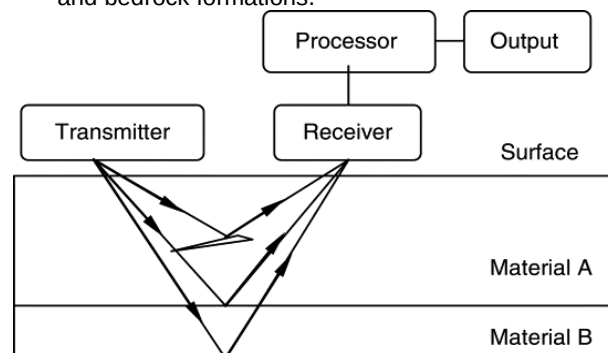
➤ History of King Bhoja:

- King Bhoja, reigning circa 1000 to 1055 in central India, is revered as one of the greatest monarchs in Indian tradition.
- Known for his patronage of arts, many Sanskrit works on various subjects were attributed to him by subsequent Hindu scholars.
- Notable among these works is the influential text on poetics, Śṛṅgaraprakāśa, which underscores the importance of Śṛṅgara (love) as a fundamental impulse in the universe.
- Bhoja initiated the construction of a grand Shiva temple at Bhojpur, which, had it been completed as planned, would have surpassed the size of Hindu temples at the Khajuraho Group of Monuments.
- His legacy continued through the centuries, with many regarding him as a divine or Bhoja-like ruler, as evidenced by later literary works.
- Bhopal, the capital of Madhya Pradesh, derives its name from Bhoja, reflecting his enduring significance.

➤ Ground Penetrating Radar (GPR)

- Ground penetrating radar (GPR) is a geophysical method used to locate objects below the ground's surface using radio waves.
- It operates in the microwave range of the electromagnetic spectrum, typically between 10 MHz and 2.6 GHz.
- GPR works by emitting electromagnetic pulses into the ground and analyzing the reflected signals to generate images of subsurface structures.

- The system consists of a transmitter, which sends energy waves into the soil, and a receiving antenna, which records variations in the return signals.
- By detecting changes in electrical permittivity, GPR can identify underground utilities and other objects without the need for invasive excavation.
- GPR is effective for mapping structures and utilities buried underground or within man-made structures.
- It can detect a variety of materials, including metal, plastic, PVC, concrete, and natural materials, making it suitable for various applications.
- Common uses of GPR include locating underground utility lines and pipes, identifying changes in ground strata, mapping geological features, detecting air pockets or voids, and determining groundwater tables and bedrock formations.



Mission Divyastra

Context: India conducted the maiden flight test of Mission Divyastra, featuring the indigenous Agni-5 missile with MIRV technology.

- MIRV technology enables warheads to split into multiple re-entry vehicles for precise attacks.
- Each missile can deliver multiple warheads, enhancing its effectiveness.
- The system boasts indigenous avionics systems and high-precision sensor packages.
- These features ensure that re-entry vehicles hit their target points accurately.

➤ Overview of Agni-V Missile:

- Agni-V, developed by DRDO, is a land-based nuclear-capable intercontinental ballistic missile (ICBM).
- It boasts a range exceeding 7,000 kilometers, with some sources suggesting up to 8,000 kilometers.
- This three-stage missile is solid-fueled, road-mobile, and canisterized, enhancing its versatility and ease of deployment.

➤ Propulsion:

- Agni-V features a three-stage solid-fueled design with composite motor casings.
- Composites are extensively used to reduce weight, enabling the missile to achieve intercontinental range.
- During its first flight test in April 2012, the total flight duration was 1130 seconds, with the first stage igniting for 90 seconds.

Face to Face Centres



12 March, 2024

➤ **Guidance and Control:**

- The missile utilizes a ring laser gyroscope-based inertial navigation system (RLG-INS) for primary guidance.
- Additionally, it incorporates a micro inertial navigation system (MINGS) as a backup.
- These systems can interact with both Indian and non-Indian satellite navigation systems, offering enhanced accuracy.

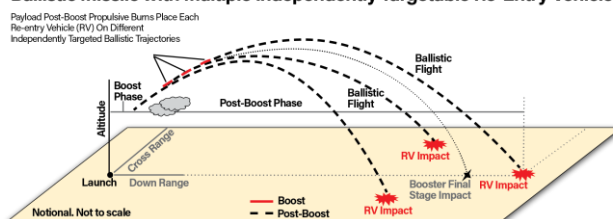
➤ **Mobility:**

- Agni-V is designed for road-mobility and utilizes a canister for launch.
- The canister, made of maraging steel, preserves the missile for extended periods and withstands the stresses of launch.
- The missile can be launched from any pre-surveyed location using a gas generator from the canister, reducing the need for pre-built launch sites.

➤ **MIRVs (Multiple Independently Targetable Reentry Vehicles):**

- Agni-V is expected to feature MIRVs, with each missile capable of carrying 2–10 separate nuclear warheads.
- MIRVs enhance the missile's second-strike capability, allowing it to target multiple locations or assign multiple warheads to a single target.
- The primary module for MIRV deployment is in an advanced stage of development as of 2012.

Ballistic Missile with Multiple Independently Targetable Re-Entry Vehicles



NEWS IN BETWEEN THE LINES

One Station, One Product



Prime Minister of India will inaugurate 'One Station, One Product' (OSOP) stalls at 205 railway stations across Southern Railway, including 168 in Tamil Nadu, through video conferencing today.

About One Station, One Product:

- The "One Station One Product" is an initiative by the Indian Railways, which provides uniquely designed sale outlets for **locals to sell indigenous products**.
- Its aim is to promote the 'Local for Vocal' vision of the Government of India.
- It establishes stalls at railway stations to showcase and sell locally-made products.
- This initiative expands the market reach for small-scale and marginalized producers.
- By creating additional sales avenues, OSOP **generates extra income opportunities for marginalized sections of society**.
- The initiative has the potential to revitalize traditional crafts, preserve cultural heritage and contribute to sustainable development goals.

The Gorsam Kora Festival



Recently, the Gorsam Kora Festival celebrated at Zemithang, Tawang district of Arunachal Pradesh.

About the Gorsam Kora Festival:

- The Gorsam Kora festival is an **annual festival** that celebrates the **friendship between India and Bhutan** and features cultural performances and Buddhist rituals.
- The festival takes place at **Gorsam Chorten, a 93-foot tall stupa built in the 13th century by a local monk**.
- Thousands of devotees, including many Bhutanese nationals, visit the festival, including Buddhist monks.
- The festival began with an invocation led by Thengtse Rinpoche, followed by prayers at the **Khinzemane holy tree**.
- The Khinzemane holy tree is thought to have been planted by the **14th Dalai Lama in 1959** when he traveled to India via the **Khinzemane-Zemithang route in Tawang**.
- The theme of 2024 festival is '**Zero Waste Festival**', with a cleanliness drive organized by the Further and Beyond Foundation.

Aid in Dying Bill



Recently, the France's President Emmanuel Macron announced the consideration of a bill to legalize aid in dying.

About Aid in Dying Bill:

- The proposed bill aims to **provide aid in dying for individuals** with incurable illnesses expected to result in short- or middle-term death.
- The bill will impose strict conditions governing the administration of **lethal medication**, allowing patients to self-administer or appoint a chosen person or medical professional for assistance.
- Aid in dying will be **available only to adults**, excluding individuals with certain **psychiatric conditions and disorders like Alzheimer's**.
- Patients must reconfirm their **choice within 48 hours**, followed by a two-week medical team review before a verdict is given.
- France currently allows **passive euthanasia**, where patients have the right to remove life support and opt for continuous and deep sedation.

Face to Face Centres



12 March, 2024

	- If the bill is cleared, France will join European countries like the Netherlands, Belgium, Luxembourg, Spain, Switzerland and Portugal, where euthanasia or assisted suicide is allowed. Germany has been negotiating such a law for the last couple of years. - Some states in the United States and Japan where such practices are already legal.
Rhodamine B 	Recently, the Karnataka government has banned the use of harmful colouring agents, Rhodamine B in cotton candy and Gobi Manchurian and warned of severe action against offenders. About Rhodamine B: - Rhodamine B (RhB) is a water-soluble chemical compound belonging to the family of xanthene dyes. - It is a bright pink to red fluorescent dye commonly used in industrial applications (textile, paper, leather, and paint industries), cosmetics, ink, food colouring and as a coloring agent in various consumer products. - It exhibits strong fluorescence under ultraviolet (UV) light, making it useful in fluorescence microscopy, flow cytometry and various diagnostic assays. - It is also employed in biological staining techniques for visualizing cell structures and in medical diagnostics for detecting specific biomolecules. - If consumed regularly, it can cause severe damage to the cerebellum tissue in the brain and to the brainstem that connect the brain to the spinal cord. - Preparation, packaging, importing, selling and serving food items containing Rhodamine B at wedding ceremonies and public events is punishable under the Food Safety Standards Act, 2006.
Place in News Belarus	Recently, the Foreign Minister Sergei Aleinik of Belarus arrived in Delhi on a three-day visit to India, where he is scheduled to hold meetings with External Affairs Minister Dr. S. Jaishankar. Belarus (Capital: Minsk) Location: Belarus, officially known as the Republic of Belarus is a landlocked country in Eastern Europe. Political Boundaries: Belarus shares its borders with Russia (East & Northeast), Poland (West) and Lithuania and Latvia (Northwest) and Ukraine (South). Physical Features: - The highest point in Belarus is Dzyarzhynskaya Hara (Dzerzhinskaya Hill), also known as Hara Dzyarzhynskaya. - The major rivers in Belarus include the Dnieper, Western Dvina (Daugava) and Neman (Nemunas). - Belarus has limited mineral resources, but it does have deposits of various minerals including peat, oil and natural gas, granite, dolomite (limestone), potash and phosphorites. 

POINTS TO PONDER

- Which ministry organizes Poshan Pakhwada, recently seen in the news? – **Ministry of Women and Child Development**
- Which country was honored with the prestigious 'Measles and Rubella Champion' global award for its exemplary efforts in combating these diseases? – **India**
- In which state was Bichom recently declared the 27th district? – **Arunachal Pradesh**
- Where was the 'Agriculture Integrated Command and Control Centre' recently inaugurated? – **New Delhi**
- Which day is annually celebrated as 'CISF Raising Day'? – **March 10**

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