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## Review of Policies and Schemes of HRD Ministry

## EQUIP

- Education Quality Upgradation and Inclusion Programme (EQUIP) Five-year vision plan of HRD Ministry:
- It sets out to deliver further on principles of Access, Inclusion, Quality, Excellence and enhancing employability in Higher Education.
- EQUIP is a vision plan aiming at ushering transformation in India's higher education system by implementing strategic interventions in the sector over five years (2019-2024).
- EQUIP has been prepared based on reports of Ten expert groups constituted to deliberate upon important aspects of Higher Education.
- Currently EQUIP has been submitted for in principal approval of Expenditure Finance Committee.

## Institution of Eminence (IoE)

- The regulatory infrastructure for the Institutes of Eminence (IoE) plan was provided by the University Grants Commission (UGC).
- Under this initiative 10 institutions in public sector and 10 institutions in private sector have to be declared as IoE.
- Each Public institute (IoE) will be eligible to receive Rs. 1000 crore during next 5 years.
- 10 Public Institutions are IISc Bangalore, IIT Delhi, IIT Bombay, IIT Madras, IIT Kharagpur, University of Hyderabad, Banaras Hindu University, University of Delhi, Jadavpur University & Anna University.
- 10 Private institutions are BITS Pilani, MAHE Karnataka, Jio Institute, Amrita Vishwavidyapeetham, Tamil Nadu , Vellore Institute of Technology, Tamil Nadu, Jamia Hamdard, New Delhi, Kalinga Institute of Industrial Technology, Odisha, O.P. Jindal Global University, Haryana, Bharti Institute, Satya Bharti Foundation, Mohali, Shiv Nadar University, Uttar Pradesh.

## SRATS

- Scheme for Transformational and Advanced Research in Sciences is to be implemented, monitored and managed by IISc, Bangalore.
- It will be providing extra mural funding to faculty of HE institutions for research projects in basic sciences.

## Higher Education Financing Agency

- Higher Education Financing Agency (HEFA) is a joint venture of MHRD Government of India and Canara Bank for financing creation of capital assets in premier educational institutions in India.
- It aims to expand the scope of covering school education, educational institutes under Ministry of health etc.
- HEFA is registered under Section 8, Not-for-profit under the Companies Act 2013 as a Union Govt company and as Non–deposit taking NBFC (NBFC-ND-Type II) with RBI.
- HEFA finances for HEIs, Kendra vidyalayas, Navodaya vidyalaya, AIIMS and other educational institutions of the Ministry of Health.

## Impactful Policy Research in Social Science (IMPRESS)

- It aims to support the social science research in the higher educational institutions and to enable research to guide policy making.

## SWAYAM

- It aims to offer Online Degree Programmes through SWAYAM by Top Ranking Universities.
- SWAYAM aims to access to Quality education ,Increase GER in Higher Education from 26 to 30 in next 5 years and Anyone, Anywhere, Anytime learning.

## SWAYAM PRABHA- DTH Educational Channels

- Project for telecasting high quality educational programs through 32 DTH channels on 24x7 basis to reach out to student/learners of India with wide reach and minimal cost.
- It aims to support those students who do not have good learning options like lack of teacher or internet etc.
- It also aims to provide dedicated channels ‘IITPAL’ to assist the students of 11 and 12 standards aspiring to join premier educational institutions in the country.
- SWAYAM Prabha project is managed by Chief Coordinator from IIT Madras.

## SHREYAS

- Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS) was launched for providing industry apprenticeship opportunities to the general graduates exiting in April 2019 through the National Apprenticeship Promotional Scheme (NAPS).
- The program aims to enhance the employability of Indian youth by providing 'on the job work exposure' and earning of stipend.

## ASEAN Fellowship

- It was launched by MHRD & MEA.
- It offers 1000 fellowships to the students of ASEAN countries for pursuing integrated Ph.D programmes in IITs.

## National Educational Alliance for Technology (NEAT)

- National Education Alliance of Technologies (NEAT) is a PPP Model between MHRD and EdTech companies
- It aims to offer Adaptive and personalized learning through Artificial Intelligence (AI) to the students with specific emphasis on students from economically and socially backward regions.

## India's Deep Sea Exploration Project

- Indian scientists are preparing to set sail to a region of the Indian Ocean, off the East coast of Madagascar, where they believe are plenty of valuable minerals to pick up.
- At a point in the Indian Ocean off the coast of Madagascar, around 26° South, three mid-ocean ridges intersect, This is estimated to be a highly productive area.
- The massive deposits "can range from several thousands to 100 million tonnes.
- The sea-bed sampling that NCPOR is planning for next year will pinpoint the best areas for further exploration and mining.
- This region has been proven to contain rich deposits of polymetallic nodules that hold copper and cobalt.
- India has an exclusive exploration right over a 75,000 sq km area.
- It's been two years since India leased a 10,000 sq km area (for 15 years) from the International Seabed Authority.
- National Centre for Polar and Ocean Research (NCPOR), Goa and Chennai-based National Institute of Ocean Technology (NIOT), will jointly

purchase an autonomous underwater vehicle — an unmanned, pre-programmed vehicle that can dive into the ocean and collect pictures and samples.
- Both NCPOR and NIOT are research institutions under the Ministry of Earth Sciences.
- NCPOR has "identified a dozen locations", potential candidates for detailed exploration for tapping into minerals spewed by 'hydrothermal vents'.

## Hydrothermal vents

- The Earth has about 65,000 km of underwater mountain ranges called the mid-ocean ridges.
- Like mountains on land, these ridges represent 'weak' spots, where it is easy for the semi-solid material from the mantle of the Earth to escape to the surface.
- This 'escape' is sometimes in the form of volcanoes.
- The mid-ocean ridges are also known for their volcanic activity — several islands in the Pacific ocean were formed by the molten rock spewed by them.
- But often, stuff from under the Earth's crust also escapes through 'vents' in the mountains.
- The discovery of such hydrothermal vent systems in the deep oceanic ridges has generated a lot of interest, mainly because of the material spewed can contain valuable metals such as copper, zinc, gold, silver, platinum and palladium.
- Apart from their economic potential, sea-floor hydrothermal vents are characterised by dense biological communities," More than 700 species have been reported.

## Samudrayaan

- The machine, currently stationed at NIOT, will move on tracks, but in order they don't get mired into the seabed, the vehicle has buoys on it to keep pulling it upwards.
- This machine is a precursor to another equipment, informally christened 'Samudrayaan', which will contain a module to hold human beings.

## Indian Ocean Dipole

- The Indian Ocean Dipole (IOD), also known as the Indian Niño, is an irregular oscillation of sea-surface temperatures in which the western

Indian Ocean becomes alternately warmer (positive phase) and then colder (negative phase) than the eastern part of the ocean.

- The IOD involves an aperiodic oscillation of sea-surface temperatures (SST), between "positive", "neutral" and "negative" phases.
- A positive phase sees greater-than-average sea-surface temperatures and greater precipitation in the western Indian Ocean region with a corresponding cooling of waters in the eastern Indian Ocean—which tends to cause droughts in adjacent land areas of Indonesia and Australia.
- The negative phase of the IOD brings about the opposite conditions, with warmer water and greater precipitation in the eastern Indian Ocean, and cooler and drier conditions in the west.
- The IOD also affects the strength of monsoons over the Indian subcontinent.
- The IOD is one aspect of the general cycle of global climate, interacting with similar phenomena like the El Niño-Southern Oscillation (ENSO) in the Pacific Ocean.

## Madden Julian Oscillation

- The Madden-Julian Oscillation (MJO) is the major fluctuation in tropical weather on weekly to monthly timescales.
- The MJO can be characterized as an eastward moving 'pulse' of cloud and rainfall near the equator that typically recurs every 30 to 60 days.
- Because of this pattern, the Madden–Julian oscillation is also known as the 30- to 60-day oscillation, 30- to 60-day wave, or intra-seasonal oscillation.
- The Madden–Julian oscillation is characterized by an eastward progression of large regions of both enhanced and suppressed tropical rainfall, observed mainly over the Indian and Pacific Ocean.
- The anomalous rainfall is usually first evident over the western Indian Ocean, and remains evident as it propagates over the very warm ocean waters of the western and central tropical Pacific.
- This pattern of tropical rainfall generally becomes nondescript as it moves over the primarily cooler ocean waters of the eastern Pacific, but reappears when passing over the warmer waters over the Pacific Coast of Central America.
- The pattern may also occasionally reappear at low amplitude over the tropical Atlantic and higher amplitude over the Indian Ocean.
- The wet phase of enhanced convection and precipitation is followed by a dry phase where thunderstorm activity is suppressed.

## Human Space Flight Centre

- India’s world-class facility for training GAGANYAAN astronauts will be established in three years at Challakere.
- It is a shrubby, arid oilseeds town on the Bengaluru-Pune NH4 in Chitradurga district of Karnataka.
- The 400-acre ISRO land at Challakere will be the single-stop consolidating infrastructure and activities related to space travellers.
- Challakere will also host work related to crew and service modules of the spacecraft that carries the astronauts and up to mission control.
- Challakere, is called the Science City, it houses facilities of the ISRO, the Defence Research & Development Organisation’s Advanced Aeronautical Test Range, the Bhabha Atomic Research Centre and the Indian Institute of Science.

## GAGANYAAN Mission

- Gaganyaan is an Indian crewed orbital spacecraft intended to be the formative spacecraft of the Indian Human Spaceflight Programme.
- The spacecraft is being designed to carry three people, and a planned upgraded version will be equipped with rendezvous and docking capability.
- In its maiden crewed mission, Indian Space Research Organisation's largely autonomous 3.7-tonne (8,200 lb) capsule will orbit the Earth at 400 km (250 mi) altitude for up to seven days with a two or three-person crew on board.
- The crewed vehicle is planned to be launched on ISRO's GSLV Mk III in December 2021.

## Star Link satellites

- SpaceX has launched its third batch of mini-satellites into orbit, consisting of 60 mini-satellites as a part of star link satellite constellation.
- The satellite cluster was launched on-board the Falcon 9 rocket from Cape Canaveral, Florida.
- Star Link is a plan of SpaceX to build a giant constellation of thousands of satellites that form a global broadband Internet system.
- To address the space debris issue Star link is designed in a way to use their propulsion systems to de-orbit over the course of a few months and if they fail, they will burn up naturally in the atmosphere in under five years, when their lifetime is almost up.

**Source:** PIB, The Hindu, Business line, Indian Express

