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Earthquakes

- An earthquake is shaking or trembling of the earth's surface, caused by the seismic waves or earthquake waves that are generated due to a sudden movement (sudden release of energy) in the earth's crust (shallow-focus earthquakes) or upper mantle (some shallow-focus and all intermediate and deep-focus earthquakes).
- A seismograph, or seismometer, is an instrument used to detect and record earthquakes.
- The point where the energy is released is called the focus or the hypocentre of an earthquake.
- The point on the surface directly above the focus is called epicentre (first surface point to experience the earthquake waves).
- A line connecting all points on the surface where the intensity is the same is called an isoseismic line.
- Richter magnitude scale (ML) is used for measuring the strength (amount of energy released) of earthquakes in 1930s.
- Because of the various shortcomings of the ML scale, seismologists now use moment magnitude scale (Mw).
- Both the scales are logarithmic and are scaled to have roughly comparable numeric values.
- Moment magnitude scale Mw scale is now generally referred to as the Richter scale.
- Earthquakes of magnitude four or below hardly cause any damage anywhere and are mostly inconsequential for practical purposes.
- Thousands of such earthquakes are recorded around the world every year, and most of them are uneventful and, they certainly do not signal any big upcoming event.
- Earthquakes cannot be predicted based on minor earthquake in any region.
- A magnitude 6 earthquake is typically associated with the kind of energy that was released by the atom bomb in Hiroshima.
- Since the magnitude of earthquakes are measured on a logarithmic scale, a magnitude 7 earthquake is about 32 times more powerful than a magnitude 6 earthquake.

- Accordingly, a magnitude 8 earthquake would be almost 1,000 times more powerful than a magnitude 6 event.

Minor Earthquakes in Delhi

- An earthquake of magnitude 2.1 was detected near Delhi Recently.
- It was the eleventh minor earthquake recorded in and around Delhi since May, the most powerful of which happened to be of magnitude 3.4.
- These recent earthquakes have triggered discussions on the possibility of increased seismicity around Delhi, and fears of an impending big earthquake sometime soon.
- According to earthquake catalogue, Delhi and its surrounding areas, and this would extend till Jaipur, Ajmer, Mount Abut and the Aravallis, usually experience between two and three earthquakes of magnitude 2.5 and above every month.
- But there are monthly and annual variations as well, here Geological and seismological processes are not very smooth.
- Detection of earthquakes, especially those of smaller magnitude, being recorded in an area also depends on the number of seismic recorders installed in that area.
- The area around Delhi has the densest concentration of seismometers anywhere in the country, even more than the Himalayan region which is seismically much more active.
- Out of the 115 detectors installed in the country, 16 are in or around Delhi.
- As a result, even the earthquakes of smaller magnitude, those that are not even felt by most people, are recorded, and this information is publicly accessible.
- Predicting earthquakes in a region like Delhi is all the more difficult because the place does not lie on any fault lines.
- Delhi does not lie on a plate boundary, it is located on a single plate, and the seismic activity is generated by internal deformities.

Deep Submergence Rescue Vehicle Complex

- The Deep Submergence Rescue Vehicle (DSRV) Complex was inaugurated at Visakhapatnam recently.
- The DSRV Complex is designed to accommodate the newly inducted Submarine Rescue System with state of the art facilities to store the DSRV

assets in a Rescue-Ready state.

- The DSRV system consists of a Submarine Rescue Vessel, a Remote Operations Vehicle, Side Scan Sonar and associated equipment.
- It also has Diver Decompression Chambers and hyperbaric medical equipment to decompress submariners after being rescued from a sunken submarine.
- The DSRV system can be rapidly mobilized by air or road to facilitate submarine rescue operations even at distant locations.
- The Indian Navy has inducted two such systems which will provide rescue cover to submarines on the West and East coast of India respectively.
- Currently, there are about 40 nations that operate submarines in the world out of which only a few have any form of submarine rescue capability.
- The third generation IN submarine rescue capability can, therefore, be called upon to assist during submarine contingencies of other navies in the IOR.

World Accreditation Day (WAD)

- Accreditation is a formal, independent verification that a program or institution meets established quality standards in terms of testing, inspection, or certification.
- It is an important tool to improve the quality of product and services in the field of health, education, food as well as other areas.
- It also promotes the adoption of quality standards relating to Quality Management Systems, Food Safety Management Systems and Product Certification.
- Overall, it helps in realizing the objective of improving quality competitiveness of Indian products and services.
- World Accreditation Day is celebrated on 9th June every year to highlight as well as promote the role of accreditation in trade & economy.
- National Accreditation Board for Certification Bodies (NABCB) and National Accreditation Board for Testing and Calibration Laboratories (NABL), the two accreditation boards of the Quality Council of India (QCI), organized a Webinar to commemorate the event, in which all concerned stakeholders participated.

International Accreditation Forum

- It is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of

management systems, products, services, personnel and other similar programs of conformity assessment.
- These are bodies that can certify product, process or services, management systems or persons. E.g. International Organization for Standardization (ISO).
- India is also a member.

National Accreditation Board for Certification Bodies

- The National Accreditation Board for Certification Bodies provides accreditation to Certification and Inspection Bodies based on assessment of their competence as per the Board's criteria and in accordance with International Standards and Guidelines.
- NABCB is internationally recognized and represents the interests of the Indian industry at international forums through membership and active participation with the objective of becoming a signatory to international Multilateral / Mutual Recognition Arrangements (MLA / MRA).
- NABCB is also MRA signatory of Asia Pacific Accreditation Cooperation (APAC) for Occupational Health Safety Management Systems.

Quality Council of India

- The Quality Council of India (QCI) set up in 1997 is an autonomous body attached to the Department of Industrial Policy & Promotion, Ministry of Commerce and Industry.
- The Chairman of QCI is appointed by the Prime Minister on recommendation of the industry to the government.
- Its mandate is to establish and operate the National Accreditation Structure (NAS) for conformity assessment bodies and providing accreditation in the field of health, education and quality promotion.
- National Accreditation Board for Certification Bodies (NABCB) and National Accreditation Board for Testing and Calibration Laboratories (NABL) are the two accreditation boards of the QCI.
- These two bodies work closely to support the Government and regulators to ensure that the data provided by accredited conformity assessment bodies is robust, reliable, trust worthy in terms of decision making, compliance testing and standards setting.
- Indian industry is represented in QCI by three premier industry associations namely ASSOCHAM; CII; and FICCI.

Nature Index

- The Nature Index is a database of author affiliation information collated from research articles published in an independently selected group of 82 high-quality science journals.
- The database is compiled by Nature Research, which is a part of Springer Nature which is an American German academic publishing company based in Germany.
- The Nature Index provides a close to real-time proxy of high-quality research output and collaboration at the institutional, national and regional level.
- The Nature Index is updated monthly, and a 12-month rolling window (1 April 2019 - 31 March 2020) of data is openly available.
- Recently three of the autonomous institutions of the Department of Science & Technology, Government of India have found their place among top 30 Indian Institutions including universities, IITs, IISERs, and Research Institutions and Labs as per Nature Index 2020 ratings.
- The overall ranking of India is 12th in the index and top 3 Ranking of Institutions from India are as follows

1. Council of Scientific and Industrial Research (CSIR)
2. Indian Institute of Sciences (IISc)
3. Tata Institute of Fundamental Research (TIFR)

QS Rankings

- Quacquarelli Symonds (QS) is a leading global career and education network for ambitious professionals looking to further their personal and professional development.
- QS develops and successfully implements methods of comparative data collection and analysis used to highlight institutions' strengths.
- The 'QS World University Rankings' is an annual publication of university rankings which comprises the global overall and subject rankings.
- Six parameters and their weightage for the evaluation:

1. Academic Reputation (40%)
2. Employer Reputation (10%)
3. Faculty/Student Ratio (20%)
4. Citations per faculty (20%)
5. International Faculty Ratio (5%)
6. International Student Ratio (5%)

- Recently, QS World University Rankings 2021 shows a decline in the rankings of the Indian Institutes of Technology (IITs) and the Indian

Institute of Science (IISc).

- Only the newer IITs in Guwahati and Hyderabad have shown some improvement.
- Only three educational institutes from India, the IIT Bombay (172), IISc Bengaluru (185) and IIT Delhi (193) feature in the top 200 list.
- Despite the Centre's flagship Institutes of Eminence (IoE) scheme to boost the Indian presence in these global rankings, the total number of Indian institutions in the top 1,000 global list has fallen from 24 to 21.
- In private universities, BITS Pilani and the Vellore Institute of Technology (VIT) have dropped out of the top 1,000 list, but OP Jindal Global University has climbed to the 650-700 band in the rankings.
- Out of the six parameters, Indian institutions get zero scores on the ratio of international faculty and students while scoring well on research impact, measured through citations per faculty.
- India also scores poorly on faculty-student ratio because of counting only full-time faculty whereas American universities include PhD students who are teaching or are research assistants.

Institutions of Eminence Scheme

- IoE is a government's scheme (MoHRD) to provide the regulatory architecture for setting up or upgrading of 20 Institutions (10 from public sector and 10 from the private sector) as world-class teaching and research institutions called ‘Institutions of Eminence’.
- It aims to provide for higher education leading to excellence and innovations in such branches of knowledge as may be deemed fit at post-graduate, graduate and research degree levels.
- It aim to rate Indian institutions internationally for its teaching and research as a top hundred Institution in the world over time.
- Institutes with IoE tag will be given greater autonomy and freedom to decide fees, course durations and governance structures.
- The public institutions under IoE tag will receive a government grant of Rs 1,000 crore, while the private institutions will not get any funding under the scheme.

NIRF India Rankings 2020

- Recently, ‘India Rankings 2020’ of Institutions of Higher Education was released.
- The Ministry of Human Resource Development (MHRD) has taken this important initiative of creating a National Institutional Ranking

Framework (NIRF), which has been used for the past five years for ranking institutions of higher education in different categories and domains of knowledge.

- NIRF was launched on 29th September 2015.
- It aims to encourage institutes to compete against each other and simultaneously work towards their growth.
- In addition, these rankings also attract foreign students, providing a solid base for the 'Study in India' programme for the growth of higher education in India.
- NIRF is one of the criterias for private institutions assessment for the Institutions of Eminence (IoE) Scheme.
- NIRF outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations and broad understanding arrived at by a Core Committee set up by MHRD.
- Broad Parameters:

1. Teaching, Learning and Resources.
2. Research and Professional Practices.
3. Graduation Outcomes.
4. Outreach and Inclusivity.
5. Peer Perception.

- According to the report overall, 3,771 institutions registered in the ranking framework this year which is a 20% increase in comparison to 2019.
- This is the fifth consecutive edition of these rankings. This year 'Dental' category has been introduced for the first time bringing the total tally to 10 categories/subject domains.

Source: PIB, the Hindu, Indian Express

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