



C.A Dated On 21-05-2019

**World gets the redefined units of measurement of kilogram, Kelvin, mole and ampere**

**Context:**

After decades of ground-breaking laboratory works, the world's scientific and technical community, in a landmark and historic decision taken in the recent open session of the General Conference on Weights and Measures (CGPM) at BIPM on 16 November 2018, has unanimously adopted the resolution to redefine four of the seven base units, the kilogram (SI unit of weight), Kelvin (SI unit of temperature), mole (SI unit of amount of substance), and ampere (SI unit of current).

**What will change?**

- This decision has now enabled scientists and researchers to base the SI units entirely on fundamental properties of nature, which will ensure their ongoing refinement and improvement for years to come.
- The fundamental constants are invariants of time and space and successfully replaced the artifact based units, and aptly opened up the new era for quantum world by linking all seven base units to fundamental constants/quantum standards.
- The new SI is being implemented worldwide from 20<sup>th</sup> May 2019 i.e. the World Metrology Day.
- The World Metrology Day (WMD) is celebrated annually on this very day as the Metre Convention was signed by representatives of seventeen nations on May 20, 1875.
- The Convention set the framework for global collaboration in the science of measurement and in its industrial, commercial and societal applications.

**How are they measured?**

- The kilogram, symbol kg, is the SI unit of [mass](#). It is defined by taking the fixed numerical value of the [Planck constant](#)  $h$  to be  $6.626\ 070\ 15 \times 10^{-34}$  when expressed in the unit J s,.
- "The kelvin, symbol K, is the SI unit of [thermodynamic temperature](#). It is defined by taking the fixed numerical value of the [Boltzmann constant](#)  $k$  to be  $1.380\ 649 \times 10^{-23}$  when expressed in the unit  $\text{J K}^{-1}$ , which is equal to  $\text{kg m}^2 \text{s}^{-2} \text{K}^{-1}$ .
- The mole, symbol mol, is the SI unit of [amount of substance](#). One mole contains exactly  $6.022\ 140\ 76 \times 10^{23}$  elementary entities. This number is the fixed numerical value of the [Avogadro constant](#),  $N_A$ , when expressed in the unit  $\text{mol}^{-1}$  and is called the [Avogadro number](#).



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- The ampere, symbol A, is the SI unit of [electric current](#). It is defined by taking the fixed numerical value of the [elementary charge](#)  $e$  to be  $1.602176634 \times 10^{-19}$  when expressed in the unit C, which is equal to A s

**8th Indo – Myanmar Coordinated Patrol**

**Why in News?**

Myanmar Navy Ship UMS King TabinShweHtee (773) and UMS Inlay (OPV-54) have arrived Port Blair on 20 May for the 'Opening Ceremony' of the 8th Indo-Myanmar coordinated patrol (IMCOR), at Andaman and Nicobar Command.

**About the Initiative:**

- The CORPAT initiative between the two navies is meant to address issues of terrorism, illegal fishing, drug trafficking, human trafficking, poaching and other illegal activities inimical to interest of both nations.
- Started in Mar 2013, the CORPAT series has enhanced the mutual understanding and fostered improved professional interaction between the two navies for maritime interoperability.
- The patrolling effort will be augmented by Maritime Patrol Aircraft from both the navies.
- The ships would patrol along the International Maritime Boundary Line (IMBL) between the two countries covering a distance of approximately 725 Kms over a period of four days.
- The ships will also undertake joint manoeuvres and drills during the sea phase of coordinated patrol (CORPAT) prior 'Closing Ceremony' of the CORPAT onboard Myanmar Naval Ship

**Human Rights Council Report:**

**Why in News?**



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Reacting angrily to a submission from the Geneva-based Human Rights Council (HRC) on the alleged violations in [Jammu and Kashmir](#), India has informed the United Nations body that it will no longer entertain any communication with the HRC's Special Rapporteurs on its report.

### **About the report:**

- The report from the UN body came at the same time a report from two NGOs in the State on the alleged cases of torture was released in Srinagar, which was endorsed by a former UN Special Rapporteur.
- The current Special Rapporteurs on Extrajudicial Executions, Torture, and Right to Health had referred to a June 2018 report of the Office of the High Commissioner of Human Rights (OHCHR) and written to the government in March 2019, asking about steps taken by New Delhi to address the alleged human rights violations listed in the report.
- In addition, the Special Rapporteurs had listed "13 cases of concern" from 2018 alone, in which "four children were among eight civilians killed by members of the security forces."



### **India's Response:**

- Rejecting all the claims, the Indian Permanent Mission to the [United Nations](#) in Geneva replied to the OHCHR saying that "India... does not intend to engage further with these mandate-holders or any other mandate-holders on the issue," whom it accused of "individual prejudice".
- India had also rejected the OHCHR's report on the 'Situation of Human Rights in Kashmir' — the [first-ever such report on Jammu and Kashmir that came out in June 2018](#) — and accused the High Commissioner of Human Rights Zeid Ra'ad Al Hussein of "clear bias" in bringing it out.
- When asked, the Ministry of External Affairs clarified that India's stand on not engaging with the Special Rapporteurs was only for those wishing to refer to the OHCHR report.

### **What did UN Say?**



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- However, UN officials say that India is already in contravention of several Conventions it has committed to, including a "Standing Invitation" signed in 2011 to all special rapporteurs to visit India.
- According to the UN records, more than 20 such visit requests, including to Jammu and Kashmir, are pending at present.
- UN sources also said that between 2016-2018, the OHCHR Special Rapporteurs had sent as many as 58 communications, and had received no response other than the April 23 letter on Jammu and Kashmir.
- "The only response so far has been to the communication relating to Jammu and Kashmir....The last visit was by the Special Rapporteur on water and sanitation, in October-November 2017.

**Report from NGOs**

- The UN submission on Jammu and Kashmir coincided with the release of an extensive 560-page report on Monday, prepared by the J&K based Association of Parents of Disappeared Persons (APDP) and the J&K Coalition of Civil Society (JKCCS).
- The report, entitled 'Torture: Indian State's Instrument of Control in J&K', documented 432 cases of suspected human rights violations and brutality by security forces of which only 27 had been investigated by the State Human Rights Commission.
- The report claimed that nearly "70% of torture victims in Jammu and Kashmir were civilians (not militants) and 11% died during or as a result of torture".
- The cases included incidents of electrocution, 'water-boarding' and sexual torture, which the government has repeatedly denied.

**Waste Water Treatment:**

**Why in News?**

Shortage of water is an annual story in [Gujarat](#), with limited sources of fresh water and rising demand. Every year, the State faces water shortage,



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particularly for drinking water in far-flung areas in Saurashtra and north Gujarat, both drought-prone regions in the State.

Now, the State government has come up with a detailed plan to address the water shortage by limiting the supply of fresh water only for drinking and irrigation purposes, while the growing demand of industries will be met through treated waste water, which will be supplied by State.

**Detailed plan**

- In the next 3-4 years, more than 80% of the water requirement of industries will be met through the supply of treated waste water (TWW), which will be supplied from Sewerage Treatment Plants (STPs).
- Industry will get only treated water in order to reserve fresh ground water for drinking and irrigation.
- State has limited sources of fresh water while demand is rising, which forces the authorities to adopt novel ways to address the issue.
- It has capacity to treat water at STPs and since there is no demand for treated water, it gets diluted and treated water is released into water bodies or farms.
- Now, It will be made mandatory for industries to use treated waters..

**Biotherapeutic medicines**

**Why in News?**

Over 60 civil society organisations from across the world have written to the Director General of World Health Organisation (WHO) demanding revision of the global health body's 'Guidelines for Evaluation of Similar Biotherapeutic Product (SBPs),' which were adopted in 2009.

**What are these products?**



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Biotherapeutic medicines, also known as biologics, are produced through biological processes and differ from the older generation small-molecule medicines that are derived through chemical synthesis.

#### **Concern::**

- Unfortunately, both accessibility and affordability of this new class of medicines in developing countries is abysmally poor, owing largely to their high prices.
- Civil Society groups claim that even though a Resolution of the World Health Assembly in 2014 mandates the Director General to convene the WHO expert committee on biological standardization to update the 2009 guidelines, "till date, the secretariat has neither updated the SBP guidelines nor has the WHO given any scientific reasons for the decision.
- They also sought public consultations to review the scientific evidence with respect to the need for comparative clinical trials, among other things.

#### **Healthcare in India:**

##### **Why in News?**

Despite the health sector employing five million workers in India it continues to have low density of health professionals with figures for the country being lower than those of Sri Lanka, China, Thailand, United Kingdom and Brazil, according to a World Health Organisation database.

##### **Issues:**

- Southeast Asia needs a 50% increase in healthcare manpower to achieve universal health coverage by 2030.
- India faces the problem of acute shortages and inequitable distributions of skilled health workers as have many other low- and middle-income countries.
- This workforce statistic has put the country into the "critical shortage of healthcare providers" category. Bihar, Jharkhand, Uttar Pradesh and



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Rajasthan are the worst hit while Delhi, Kerala, Punjab and Gujarat compare favourably.

**Statistics:**

- "Data on the prevalence of occupational vacancies in the health care system in India overall is scarce.
- Government statistics for 2008, based on vacancies in sanctioned posts showed 18% of primary health centres were without a doctor, about 38% were without a laboratory technician and 16% were without a pharmacist.
- The health workforce in India comprises broadly eight categories, namely: doctors (allopathic, alternative medicine); nursing and midwifery professionals; public health professionals (medical, non-medical); pharmacists; dentists; paramedical workers (allied health professionals); grass-root workers (frontline workers); and support staff.

**New courses needed**

- The need of the hour is to design courses for different categories of non-physician care providers.
- Competencies (and not qualification alone) should be valued and reform must be brought in regulatory structures to provide flexibility for innovations,