Topics

- Quarks
- Global Plastic treaty
- ILO Report on health and climate
- Mains

By saurabh pandey sir

Target Mains 2024/25 - essay topic

Q‘Climate change will alter the pace of economic growth”Discuss

Q 'जलवायु परिवर्तन आर्थिक विकास की गति को बदल देगा' चर्चा करें

send your answer - Saurabh pandey upsc telegram channel

Wealth distribution is not the only way to reduce inequalities "Discuss.

The Oxfam report highlights that more than 70% wealth concentration with only less than 1% people and less than 1% wealth concentration is with 90% of the people.

The existence of inequality related to wealth creates gender inequality pay for similar work and inappropriate skill functioning attracts low wages prevailing of social inequality.

WAYS TO REDUCE WEALTH INEQUALITIES

⊙ Skilling, re-skilling and upgrading

- People should be provided advanced skill accordingly work demand.
- Timely training should be given to workforce in a workplace to meet the gap of changing need.
- Focus on Skill up India, Made in India schems.

⊙ Quality education

- As targeted in SDG-4.
- Education should be with quality formally.
- Focussing of hybrid learning.
- Familiarity with actual challenge of workforce.
- Audio-visual images should be used.

⊙ SELF SUFFICIENT

- The children should be motivated enough to earn their expenditure since early age besides preparing for exam.

- To aid family work and business.

⊙ Opportunity Creation

- Women should be empowered and encouraged to earn and take part in economic activities of paid work.
- Educated women should not restricted at-service work only.

⊙ Adoption of technology

- People taking technical degree must have knowledge of advance machines and technology.
- Focus on machine learning and AI tools to use to create extraordinary presentation.

⊙ Self employed

People have wealth must utilise and invest in economy to create job opportunities for others.

⊙ Financial Inclusion facility

- Government scheme like MUDRA facilitates loan based on category to non-agricultural sector.
- Agricultural loan provided by NABARD, RRBs etc.
- SHGs encouraged as Kudumbshree in south India area.

CONSTITUTIONAL BACKUP

- Preamble - Social and economic justice, liberty and equality.
- Part 3 guarantees fundamental rights.
- Directive principle of state policy ensures social and economic justice (A-39 B)
- Right to property was made constitutional cum legal right from fundamental right so that government can better control resources and distribute properly.

Cases associated

- Golaknath case 1967

SC said Fundamental right can't be abridged to implement DPSP.

- Kesavananda case 1973

SC upheld A-31C under Judicial review.

- Minerva mills case 1980

SC highlighted to harmonise balance between FR and DPSP.

Wealth distribution is not only way to reduce social inequalities. India witnessed loan waiver, imposing high taxes etc. not futile step to reduce the inequalities. Government focusing on leveraging individuals to create opportunity establishing small entities and bridging technology advancement.

Particles called quarks hold the key to the final fate of some stars

In neutron stars, the strength with which the core collapses fuses protons and electrons into neutrons. Neutron stars are extremely dense, creating immense pressure that could be forcing the neutrons into a new state of matter. An old open problem asks whether this state could be quark matter

Qudsia Gani

We know that all matter is composed of atoms, and atoms are made of protons and neutrons inside the nucleus and electrons outside. But unlike electrons, protons and neutrons are composite particles because they are further made up of quarks.

Quarks can't exist in isolation. They can only be found in groups of two or three, if not more. Such clumps of quarks are called hadrons. Protons and neutrons are common examples. Physicists have mostly studied quarks based on the behaviour of hadrons, and are also interested in how quarks clump together.

When quarks clump

Two recent findings revealed new insights on this count. One, published on February 20, reported that three-quark clumps are more likely to form than two-quark clumps when a particular type of quark is more densely surrounded by some other particles. According to the international team of researchers that conducted this study, the finding rejects "conventional particle-physics models in which the consolidation of quarks is independent of the particle environment".

Another study, published on March 15, reported observing clumps composed entirely of the heavier quarks. Protons and neutrons are clumps of lighter quarks and are thus more long-lived. Heavy-quark clumps are very short-lived and harder to study, requiring more sophisticated tools and computing power. Yet understanding them is important to complete our understanding of all quarks, and by extension how these elusive particles affect what we know about nuclear fusion and the fate of stars.

In fact, in the particular and unusual case of quark stars, understanding quarks could have a more direct impact.

The tension of every star

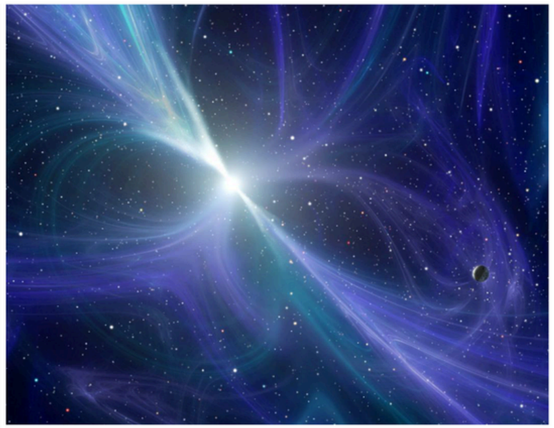
A star is a globe of matter that has found a way to strike a balance between two forces. The force of gravity – arising from the star's mass – encourages the star to collapse under its own weight and implode. The nuclear force, expressed in the explosive energy released by fusion reactions at its core, pushes the star to blow up and outwards. In a star, the two forces are equally matched and it shines in the sky.

But once a star runs out of material to fuse, nuclear fusion weakens and gravity starts to gain the upper hand. Eventually, the star will 'die' and implode. Its fate in its afterlife depends on how large and massive it was when it lived, as a result forming a white dwarf, a neutron star or a black hole.

Scientists have estimated that if the Sun were 20-times more massive, it may collapse into a black hole when it dies. If it were only eight-times heavier, it could become a neutron star. But could there be stars that are too heavy to form a neutron star yet not too heavy to form a black hole, and thus form a quark star?

Enter 'quark matter'

In neutron stars, the strength with which the core collapses will fuse all protons and electrons inside into neutrons, thus its name. Physicists understand neutron stars well – on paper. The problem is they can't run any direct experiments on them in any laboratory on the earth. They also don't know either the masses or the radii of most neutron stars in the universe. So astrophysicists are very interested in studying them.



An artist's conception of the pulsating neutron star PSR B1257+12, with a planet orbiting it nearby. NASA

The matter inside neutron stars is extremely dense. For example, two Suns' worth of mass is packed into a sphere only 25 km wide. This creates an immense pressure that could be forcing the neutrons into a new state of matter.

An old open problem in physics asks whether this state could be quark matter – when there are no longer any neutrons, only quarks.

In December 2023, researchers from the University of Helsinki reported in the journal *Nature Communications* that the insides of most massive neutron stars have an 80-90% chance of being made of quark matter.

The research team combined astrophysical observations with theoretical *ab initio* (from scratch) calculations to develop a model that they ran using a supercomputer, and arrived at this result. However, these astrophysical observations were small in number, meaning the result is not so reliable. Astrophysicists need more observational data to understand quark matter and how exactly it forms.

The need for quarks

A popular way of calculating the bulk properties of any material is to use an equation of state – an equation that, when solved with data about some of a material's physical properties, reveals the values of other properties. For neutron stars, this is the Tolman-Oppenheimer-Volkoff equation: it is very complex but it assigns a probability to the presence of quarks within neutron stars.

> Once a star runs out of material to fuse, nuclear fusion weakens and gravity gains the upper hand. Eventually, the star will implode. Its fate in its afterlife will depend on how large and massive it was when it lived

Physics has a rich tradition of giving quirky names to things physicists find. For example, quarks come in six 'flavours' – three are called charm and strange; quarks themselves have a property called colour charge; and so on. The name 'quark' itself is courtesy physicist Murray Gell-Mann, who named these particles after a line in James Joyce's 1939 masterpiece, *Finnegan's Wake*.

Protons are positively charged and therefore have a magnetic moment (a turning force exerted by a magnetic field) associated with them. But neutrons have a magnetic moment, too, yet they are neutrally charged. So physicists in the 1960s figured neutrons must be made of smaller particles that gave rise to the magnetic moment but whose electric charges cancel themselves out. Gell-Mann called them quarks and their existence was confirmed in the 1970s.

Setting quarks free

There are six types of quarks: up, down, top, bottom, strange, and charm. Each quark can have one of three types of colour charge. Then there are also antiquarks, their antimatter versions. A quark-antiquark clump is called a meson (they don't annihilate each other because they are of different types, e.g. up + anti-down). Three-quark clumps are called baryons and they form the normal matter surrounding us.

Quarks are further held together by another set of particles called gluons. Because nuclear forces are very strong, quarks are always tightly bound to each other and are not free, even in the vacuum of empty space.

The nuclear force that holds quarks together is explained by a theory called quantum chromodynamics. It predicts that at sufficiently high (by all means extreme) energies, nuclear matter can become 'deconfined' to create a new phase of matter in which quarks don't have to exist in clumps.

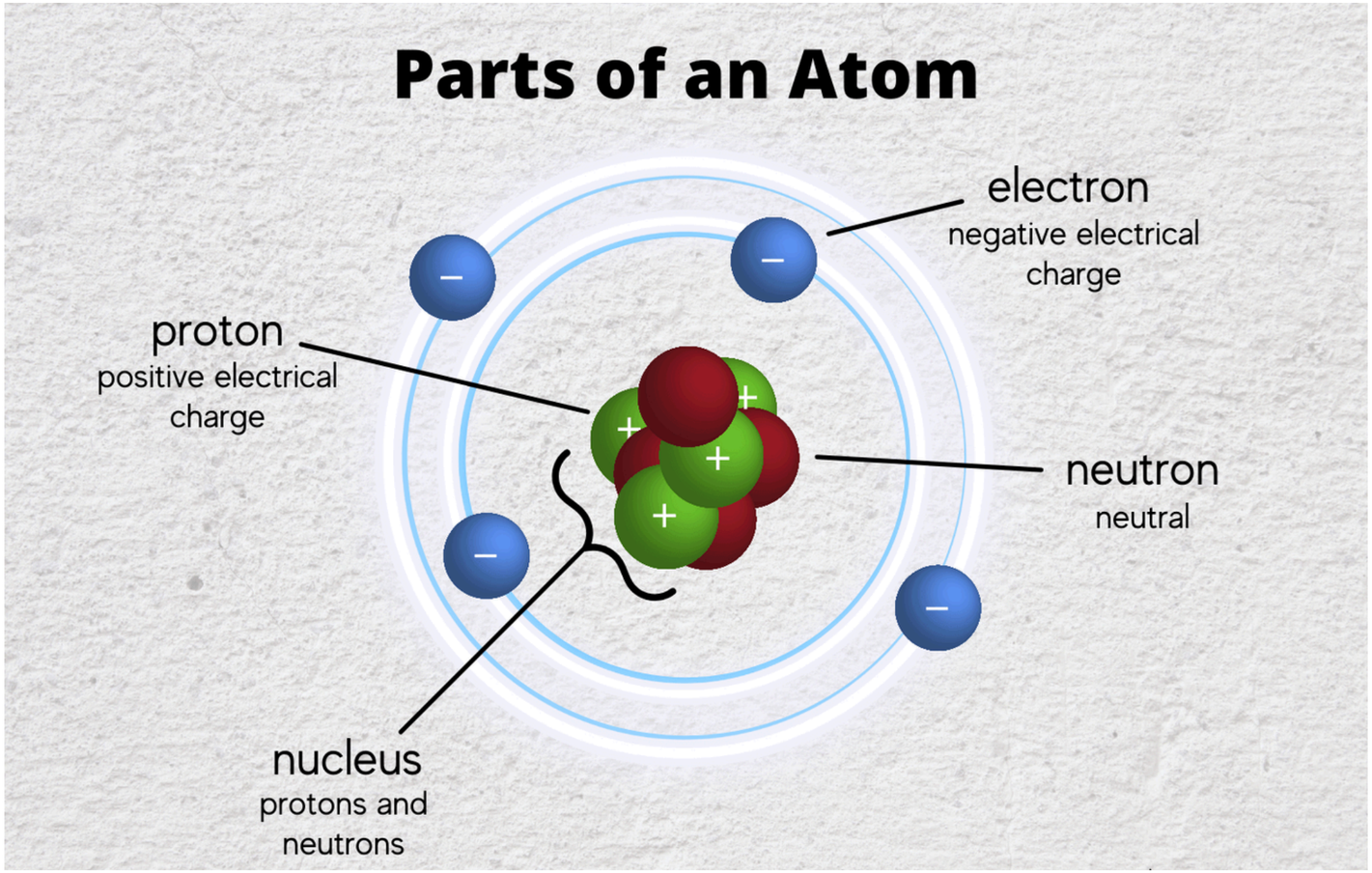
Physicists have been able to obtain evidence of deconfinement by smashing lead ions against each other at very high energies in machines like the Large Hadron Collider. In these experiments, a state of matter called a quark-gluon plasma exists for a brief moment; the 'plasma' means the quarks are independent. According to the Big Bang theory, the universe was filled with this plasma before the particles clumped and formed the first blobs of matter.

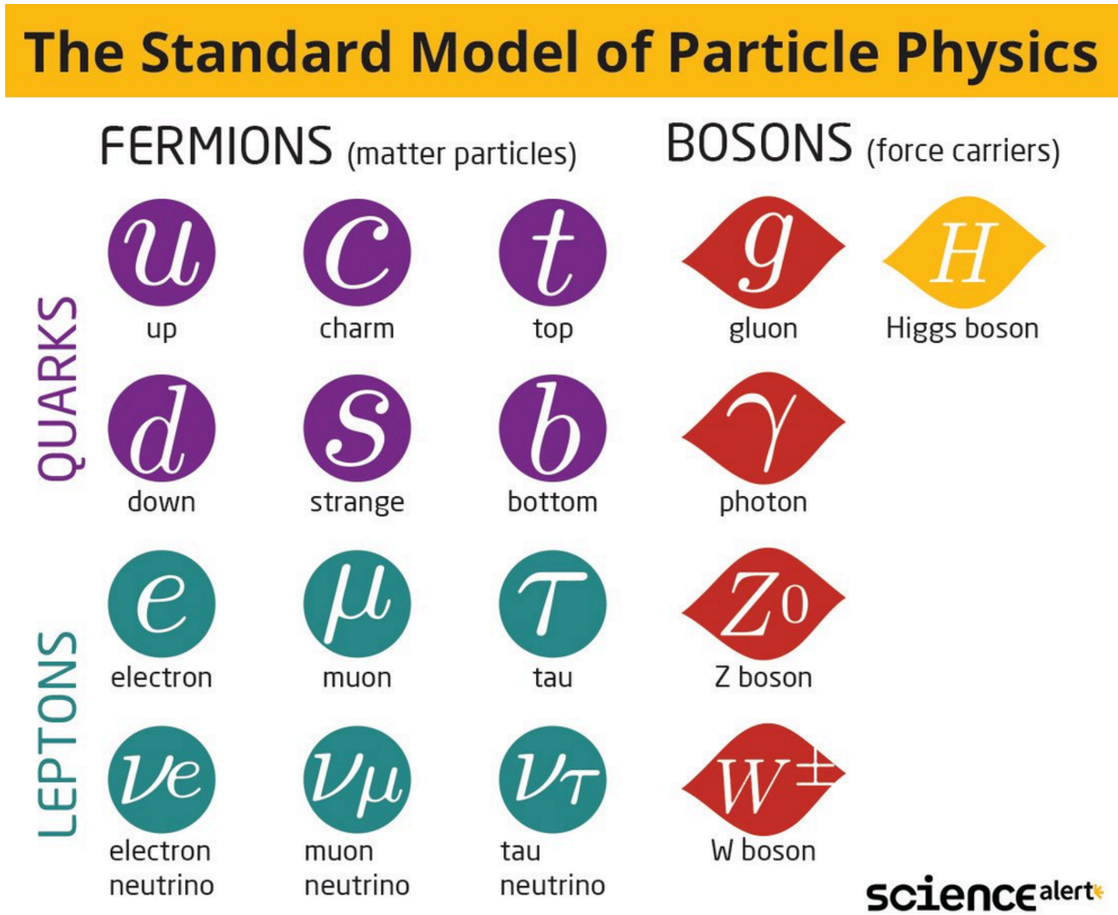
This clumping process may release energy or modify its surroundings in a way that astrophysicists can look for, and eventually discover a quark star. Until then, the possibility will live on as one of the many open problems of physics.

(Qudsia Gani is an assistant professor in the Department of Physics, Government Degree College Pattan, Baramulla.)

Quarks

- We know that all matter is composed of atoms, and atoms are made of protons and neutrons inside the nucleus and electrons outside.
- But unlike electrons, protons and neutrons are composite particles because they are further made up of quarks. Quarks can’t exist in isolation.
- They can only be found in groups of two or three, if not more. Such clumps of quarks are called hadrons.
- Protons and neutrons are common examples. Physicists have mostly studied quarks based on the behaviour of hadrons, and are also interested in how quarks clump together





The Hindu analysis by saurabh pandey sir

- three-quark clumps are more likely to form than two-quark clumps when a particular type of quark is more densely surrounded by some other particles.
- Protons and neutrons are clumps of lighter quarks and are thus more long-lived.
- Heavy-quark clumps are very short-lived and harder to study, requiring more sophisticated tools and computing powe

Case of Star

- A star is a globe of matter that has found a way to strike a balance between two forces. The force of gravity — arising from the star's mass — encourages the star to collapse under its own weight and implode.
- The nuclear force, expressed in the explosive energy released by fusion reactions at its core, pushes the star to blow up and outwards.
- In a star, the two forces are equally matched and it shines in the sky.
- But once a star runs out of material to fuse, nuclear fusion weakens and gravity starts to gain the upper hand.

- Eventually, the star will ‘die’ and implode.
- Its fate in its afterlife depends on how large and massive it was when it lived, as a result forming a white dwarf, a neutron star or a black hole.
- Scientists have estimated that if the Sun were 20-times more massive, it may collapse into a black hole when it dies.
- If it were only eight-times heavier, it could become a neutron star
-

- Eventually, the star will ‘die’ and implode.
- Its fate in its afterlife depends on how large and massive it was when it lived, as a result forming a white dwarf, a neutron star or a black hole.
- Scientists have estimated that if the Sun were 20-times more massive, it may collapse into a black hole when it dies.
- If it were only eight-times heavier, it could become a neutron star
-

- The matter inside neutron stars is extremely dense. For example, two Suns' worth of mass is packed into a sphere only 25 km wide.
- This creates an immense pressure that could be forcing the neutrons into a new state of matter.
- An old open problem in physics asks whether this state could be quark matter — when there are no longer any neutrons, only quarks.

- For neutron stars, this is the Tolman-Oppenheimer-Volko equation: it is very complex but it assigns a probability to the presence of quarks within neutron stars.
- Physics has a rich tradition of giving quirky names to things physicists find. For example, quarks come in six ‘flavours’ — three are called charm and strange; quarks themselves have a property called colour charge; and so on.
- The name ‘quark’ itself is courtesy physicist Murray Gell-Mann, who named these particles after a line in James Joyce’s 1939 masterpiece, Finnegan’s Wake.

- There are six types of quarks: up, down, top, bottom, strange, and charm. Each quark can have one of three types of colour charge.
- Then there are also antiquarks, their antimatter versions.
- A quark-antiquark clump is called a meson (they don’t annihilate each other because they are of di□erent types, e.g. up + anti-down).
- Three-quark clumps are called baryons and they form the normal matter surrounding us.
-

- Quarks are further held together by another set of particles called gluons.
- Because nuclear forces are very strong, quarks are always tightly bound to each other and are not free, even in the vacuum of empty space.
- The nuclear force that holds quarks together is explained by a theory called quantum chromodynamics.
- It predicts that at sufficiently high (by all means extreme) energies, nuclear matter can become ‘deconfined’ to create a new phase of matter in which quarks don’t have to exist in clumps.

A a public art installation outside a United Nations conference on plastics, in Ottawa, Ontario. AP

Plastic treaty talks conclude in Ottawa with little progress

Jacob Koshy

Activist and environmentalist groups have termed the Global Plastics Treaty negotiations that concluded in Ottawa, Canada, on Tuesday as "disappointing". Nearly 192 member countries deliberated for nearly a week to iron out a legally binding agreement to "end plastic pollution". This was the fourth round of talks since countries resolved in 2022 to eliminate plastics and formed an Intergovernmental Negotiating Committee (INC), which consisted of government representatives tasked with drawing up a timeline for countries to not only eliminate plastic use but also halt production.

However the close connection between plastics and the oil economies of prominent countries, the vast manufacturing businesses that revolve around making and supplying different grades of plastics, the near ubiquity of the polymer's use in a variety of applications and the paucity of affordable, equivalent alternatives constitute the biggest roadblocks to its elimination. Because plastics do not easily degrade organically, they pollute marine and terrestrial ecosystems and have been long characterised as among the toughest environmental contaminants.

"The INC has once again failed to ask the most fundamental question to the success of the future treaty: how do we tackle the unsustainable production of plastics?" said Jacob Kean-Hammerson, Environmental Investigation Agency, United Kingdom and who was present at the talks.

The fourth round of talks was expected to deliver a timeline whereby primary plastic production was to halt. This didn't happen, though countries agreed to move forward with and come up with more detailed assessments of emissions,

The close connection between plastics and the oil economies of prominent countries constitutes the biggest roadblock to its elimination

production, product design, waste management, problematic and avoidable plastics, financing, and a just transition.

"We came to Ottawa to advance the text and with the hope that members would agree on the inter-sessional work required to make even greater progress ahead of INC-5. We leave Ottawa having achieved both goals and a clear path to landing an ambitious deal in Busan ahead of us," said Inger Andersen, Executive Director of the UN Environment Programme (UNEP). "The work, however, is far from over. The plastic pollution crisis continues to engulf the world and we have just a few months left before the end of year deadline agreed upon in 2022," she noted.

Inter-sessional work is expert meetings that take place between the official INC sessions and expected to catalyse agreement on key issues. The next meeting, expected to be the final one , is scheduled for November 2024 in Busan, South Korea.

"India opposed restrictions on producing so called primary plastic polymers or virgin plastics, arguing that production reductions exceed the scope of UNEA [United Nations Environment Assembly] resolutions. While acknowledging the chemicals used in plastic manufacturing, India highlighted that some are already subject to prohibition or regulation.

Global Plastics Treaty

- Activist and environmentalist groups have termed the Global Plastics Treaty negotiations that concluded in Ottawa, Canada, on Tuesday as “disappointing”.
- Nearly 192 member countries deliberated for nearly a week to iron out a legally binding agreement to “end plastic pollution”.
- This was the fourth round of talks since countries resolved in 2022 to eliminate plastics and formed an Intergovernmental Negotiating Committee (INC), which consisted of government representatives tasked with drawing up a timeline for countries to not only eliminate plastic use but also halt production.
-

The Hindu analysis by saurabh pandey sir

End Plastic Pollution: Looking forward

GENEVA ENVIRONMENT NETWORK

2022

UNEA-5.2

28 Feb – 2 Mar | Nairobi, Kenya
Adoption resolution 5/14 End Plastic Pollution: Towards an International Legally Binding Instrument

OEWG

30 May - 1 Jun | Dakar, Senegal

2023

INC-1

28 Nov - 2 Dec | Punta del Este, Uruguay
Preceeded by a multi-stakeholder forum

INC-2

29 May - 2 June | Paris, France

INC-3

13 - 19 Nov | Nairobi, Kenya

2024

INC-4

21-29 April | Ottawa,Canada

UNEA-6

26 Feb - 1 Mar | Nairobi, Kenya
Report progress of the INC

UNEA-5 resolution sets the ambition of completing the INC work by the end of 2024

INC-5

25 Nov - 1 Dec | Busan, Republic of Korea

2025

Diplomatic Conference of Plenipotentiaries

Mid 2025 | For the purpose of adoption and opening for signature the new instrument

- However the close connection between plastics and the oil economies of prominent countries, the vast manufacturing businesses that revolve around making and supplying different grades of plastics, the near ubiquity of the polymer’s use in a variety of applications and the paucity of affordable, equivalent alternatives constitute the biggest roadblocks to its elimination.
- Because plastics do not easily degrade organically, they pollute marine and terrestrial ecosystems and have been long characterised as among the toughest environmental contaminants

- “India opposed restrictions on producing so called primary plastic polymers or virgin plastics, arguing that production reductions exceed the scope of UNEA [United Nations Environment Assembly resolutions.
- While acknowledging the chemicals used in plastic manufacturing, India highlighted that some are already subject to prohibition or regulation.

Analysing labour on a warming plane

The link between labour productivity, human health and climate change gets scant attention, as the focus remains on economic and infrastructure resilience. The International Labour Organization's latest report points to the need to ensure that labour becomes climate proofed

FULL CONTEXT

Kunal Shankar

The story so far:

The International Labour Organization's (ILO) latest report, 'Ensuring safety and health at work in a changing climate', is an urgent call to ensure the future of labour is climate proofed and to address the constantly evolving work environment as the planet warms. The UN body states that well over a third of the world's population, are exposed to excessive heat annually, leading to almost 23 million work-related injuries.

What are the emerging hazards?

The ILO has identified six key impacts of climate change. They are – excessive heat, solar ultraviolet radiation, extreme weather events, workplace air pollution, vector-borne diseases and agrochemicals. These could lead to a range of health issues such as stress, stroke and exhaustion. The ILO mentions agriculture workers, workers in the construction sector, conservancy workers in cities and those employed in transport and tourism as most affected by climate change. It is also important to take note of the global rise in gig employment, which is highly heat-susceptible. Gig workers constitute about 1.5% of India's total work force, which is projected to grow to about 4.5% by 2030, according to a Nasscom study. In the Indian context, all these segments put together suggest that about 80% of the country's 2023 workforce of 600 million is susceptible to heat-related hazards.

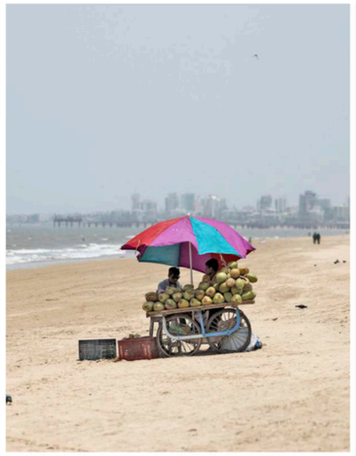
Which sectors are affected?

Agriculture is by far the most heat susceptible sector globally, particularly so in the developing world, where informal farm labourers work with little to no weather protection. The NSSO data of July 2018-June 2019 reveal that almost 90% of Indian farmers own less than two hectares of land, and earn an average monthly income of a little over ₹10,000 with farmers in the bottom three States of Jharkhand, Odisha and West Bengal earning as low as ₹4,895, ₹5,112, and ₹6,762. This leaves little room for them to invest in adapting to a warming planet.

Agriculture is followed by India's sprawling Micro, Small and Medium Enterprises (MSME) sector that employs about 21% of the country's workforce, or more than 123 million workers. The overwhelming informalisation of the sector has meant little to no oversight of worker conditions by State Occupational Safety and Health (OSH) departments, leaving them highly vulnerable to heat hazards. This sector is followed by the building and construction segment which constitutes about 70 million workers, almost 12% of India's workforce. Workers here must cope with the urban heat island effect, as construction is a highly urban-centric economy, with rising growth in cities. Construction workers are also the most prone to physical injuries and air pollution related health hazards, like asthma, as several Indian cities are among the most polluted globally.

What laws address workplace safety ?

A range of more than 13 central laws in India including, the Factories Act, 1948, the Workmen Compensation Act, 1923, the Building and Other Construction Workers Act, 1996, the Plantations Labour Act, 1951, the Mines Act, 1952 and the Inter-State Migrant Workmen Act, 1979, regulate working conditions across several sectors. These laws were consolidated and amended in September 2020 under one law – the Occupational Safety, Health and Working Conditions Code, 2020 (OSH Code, 2020). While several unions are critical of the new law for watering down safety and inspection standards, the Union government is yet to officially notify its enforcement. This has meant that unions and the judiciary continue to rely on the older laws to seek redress and accountability.



Scorching heat: A vendor selling coconut water at a beach in Mumbai on April 29. REUTERS

The Indian Factories Act defines a factory as an enterprise with "10 or more" workers, but those registered under this law are less than a quarter of a million based on the latest available data. The Labour Bureau in its 2020 report observes "an increase of 2.48% in the number of total registered factories that is, from 2,22,012 in the beginning of the year to 2,27,510 at the end of the year 2020." This means the overwhelming majority of India's 64 million MSMEs are not registered under this law, and are therefore outside the purview of governmental inspections.

What do they say about heat hazards?

When it comes to dealing with occupational heat, the Factories Act broadly defines "ventilation and temperature" and leaves it to the States to decide optimal standards based on specific industries. However, these regulations were framed more than five decades back. For instance, Maharashtra framed its rules under the law in 1963, while Tamil Nadu did so in 1950. Both these rules mention a maximum wet bulb temperature of 30°C on a shop floor with a height of 1.5 metres and also mention provisioning "adequate air movement of at least 30 meters per minute".

But these rules lack a breakdown of thermal comfort based on the level of activity, nor do they mention air conditioning, or other cooling alternatives. This is not surprising as the rules were framed much before air conditioning became common as a heat coping method. But in the developing world, air conditioning is still a luxury at homes and a significant expense for businesses. With a warming climate, the government predicts 50% of Indian homes would have ACs by 2037, but we lack these numbers for businesses, indicating an urgent need to update India's Factories Act to incorporate technological changes in provisioning thermal comfort at businesses and add more categories of industries based on evolving production processes. Brazil for instance, mandates a stoppage of work "in cases where the WBGT (Wet Bulb Global Temperature) rises above 29.4°C for low intensity work, 27.3°C for moderate intensity work, 26.0°C for high intensity work, and 24.7°C for very high intensity work," the ILO mentions.

Speaking about extreme heat and instances of friction with top corporate management, S. Kannan, the leader of the recognised union at the BMW assembly plant at Mahindra World City, Chennai (which represents more than 200 of the 350 employees), pointed to an instance at the company where workers demanded additional "lemon juice, buttermilk, and tender coconuts at the canteen" to ensure hydration last year. He claimed that the workers concerns were scoffed at by the management as "petty" issues for "high income earners". Moreover, Mr. Kannan said that unions are pressured to submit not only from the management but from the State's bureaucracy who point to the "difficulty" in getting top class industries to set up shop in Tamil Nadu. They accuse unions of disincentivising MNCs from their expansion plans.

What about other climate hazards?

Amendments are also required to address the handling of effluents and byproducts disposal, as they could significantly impact human health based on temperature. Hindustan Unilever's thermometer manufacturing plant in Kodaikanal, Tamil Nadu was shut in 2001, as it was found disposing mercury-laced glass waste in the centre of the town. *Frontline* reports that the company dumped 7.4 tonnes, leaving townspeople exposed to a highly toxic and vapourable chemical that causes a range of diseases from birth defects to several types of cancer. "This was our main case in the Madras High Court against the company," tells S. Meenakshi, who was among a battery of lawyers representing retrenched workers and townspeople seeking redress for the serious illnesses caused across Kodaikanal that were attributed to Mercury exposure. A charge denied by Unilever, even as it reached an out of court settlement with workers in 2016 after a decades-long battle.

Another significant occupational illness to be addressed in the coming decades would be the possible rise in silicosis cases. Silicosis is a fatal and incurable pulmonary disease caused by what is commonly called "lung dust", the fine particulate matter emitted in the mines of coal, precious gems like quartz and diamonds and stone quarries. India is set to record its highest coal production ever in the financial year 2023-24 and has expanded the number of mines to meet rising power demand, leading to an increase in the probability of silica exposure. In 2016, the Supreme Court ordered the Gujarat government to pay ₹3 lakh as compensation to the families of 238 victims who died of silicosis while working at a quartz mine in Godhra. The Court blamed Gujarat's bureaucracy for 'neglecting' to protect the adivasi migrant labourers who worked in the mines.

It would have been the job of inspectors under the Factories Act to inspect and enforce the provisioning gears that protect employees from silica exposure. While the T.N. and Maharashtra rules under the Factories Act elaborate on silica exposure prevention, they do not mandate the use of silica removal technologies at stone quarries or mines. Again, these technologies were not available when these rules were framed. Mr. Kannan says that, "labour conciliation, industrial safety and worker welfare are weak wings of the government. There are several vacancies, both at the inspector level, and at the clerical level, and our main concern is training, sensitisation and the competence of inspectors to conduct specialised inspections." He spoke about instances where inspectors fear the "influence that private sector management, particularly, MNC's wield" with State bureaucrats. However, a retired official from Tamil Nadu's Directorate of Industrial Safety and Health, R. Jayakumar countered the charge of incompetence and unfilled job posts in the department he headed. He stated vacancies might have been temporary. "In fact, when the BOCW Act (Buildings and Construction Workers Act, 1996) was enacted, we formed a new wing and created new posts to look into its implementation," Mr. Jayakumar said, referring to the law that regulates employment in the construction sector. But he admitted that climate change raises concerns about working conditions.

Often the link between labour productivity, human health and climate change gets scant attention, as the focus remains on economic and infrastructure resilience. The ILO report points to the need to ensure a universally accepted regulatory framework to climate-proof work and workers.

THE GIST

- The ILO has identified six key impacts of climate change. They are – excessive heat, solar ultraviolet radiation, extreme weather events, workplace air pollution, vector-borne diseases and agrochemicals.
- When it comes to dealing with occupational heat, the Factories Act broadly defines "ventilation and temperature" and leaves it to the States to decide optimal standards based on specific industries. However, these regulations were framed more than five decades back.
- Amendments are also required to address the handling of effluents and byproducts disposal, as they could significantly impact human health based on temperature.

ILO Report on health and climate change

- T he International Labour Organization’s (ILO) latest report, ‘Ensuring safety and health at work in a changing climate’, is an urgent call to ensure the future of labour is climate proofed and to address the constantly evolving work environment as the planet warms.
- The UN body states that well over a third of the world’s population, are exposed to excessive heat annually, leading to almost 23 million work-related injuries.

The Hindu analysis by saurabh pandey sir

Which sectors are affected?

- Agriculture is by far the most heat susceptible sector globally, particularly so in the developing world, where informal farm labourers work with little to no weather protection.
- Agriculture is followed by India’s sprawling Micro, Small and Medium Enterprises (MSME) sector that employs about 21% of the country’s workforce, or more than 123 million workers.
-

- The overwhelming informalisation of the sector has meant little to no oversight of worker conditions by State Occupational Safety and Health (OSH) departments, leaving them highly vulnerable to heat hazards.
- This sector is followed by the building and construction segment which constitutes about 70 million workers, almost 12% of India’s workforce.
- Workers here must cope with the urban heat island effect, as construction is a highly urban-centric economy, with rising growth in cities
-

What laws address workplace safety ?

- A range of more than 13 central laws in India including, the Factories Act, 1948, the Workmen Compensation Act, 1923, the Building and Other Construction Workers Act, 1996, the Plantations Labour Act, 1951, the Mines Act, 1952 and the Inter-State Migrant Workmen Act, 1979, regulate working conditions across several sectors.
- These laws were consolidated and amended in September 2020 under one law — the Occupational Safety, Health and Working Conditions Code, 2020 (OSH Code, 2020).
-

- When it comes to dealing with occupational heat, the Factories Act broadly defines “ventilation and temperature” and leaves it to the States to decide optimal standards based on specific industries.
- However, these regulations were framed more than five decades back.
- Amendments are also required to address the handling of effluents and byproducts disposal, as they could significantly impact human health based on temperature.
-

Current affairs plus

Cover Advance current Affairs

- PIB
- YOJANA
- Down to earth
- Major Newspaper
- science daily
- GES REPORTER
- Physics.org

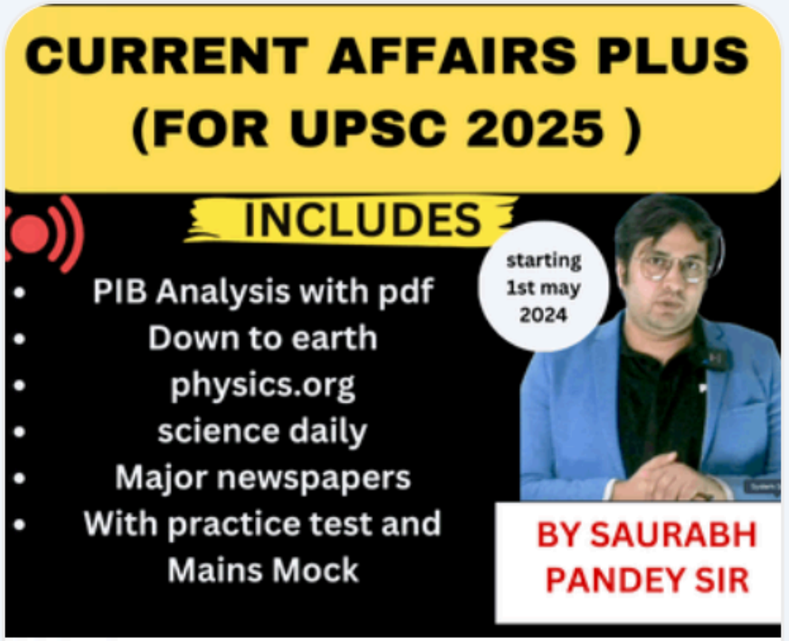
ONE STOP SOLUTION

MUST FOR UPSC 2025 ASPIRANTS

For upsc 2025/26 Aspirants

Download saurabh pandey cse app

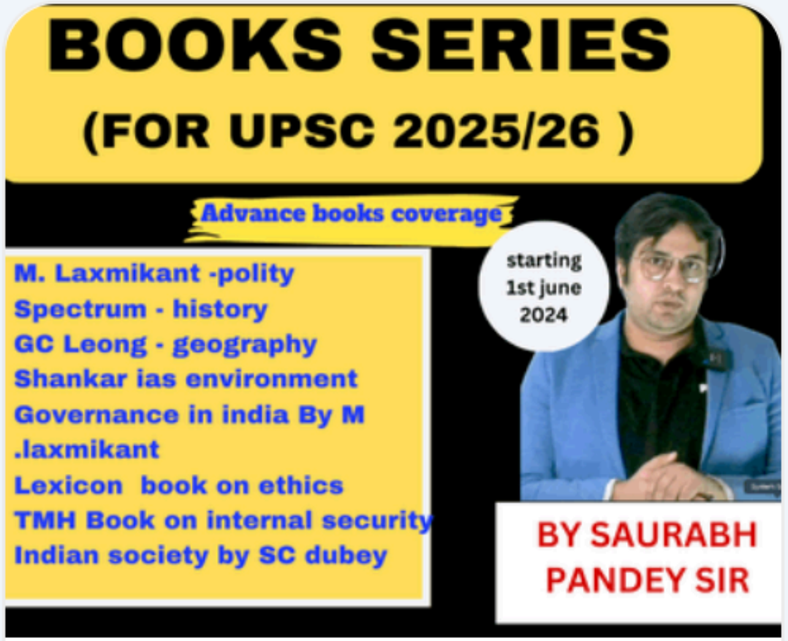
visit saurabhpandeyupsc.com and click on All courses



Current affairs Plus For UPS C 2025 (PIB, Down to eart...

Created by: You(Owner)

1 year



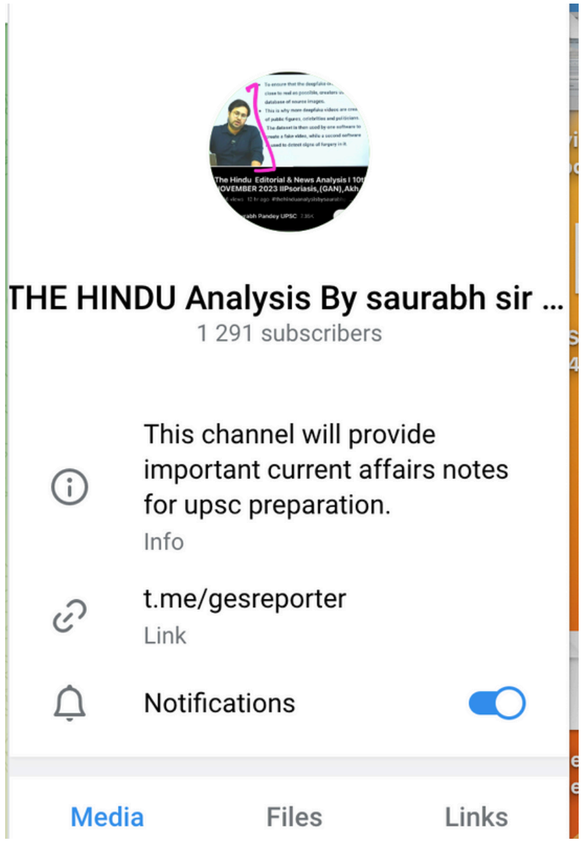
Books series for UPSC 202 5/26

Created by: You(Owner)

1 year

9057921649

FOR PDF (NEW TELEGRAM CHANNEL)



9057921649

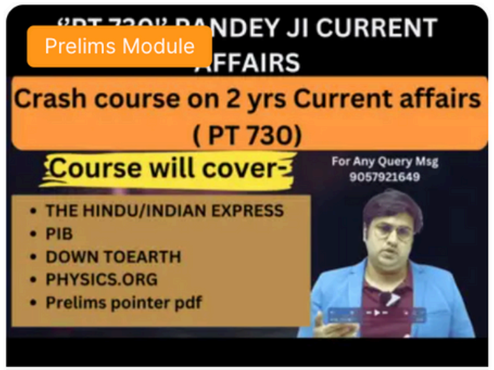
LINK IN DISCRIPTION

https://t.me/gesreporter

visit saurabhpandeyupsc.com

Popular Courses

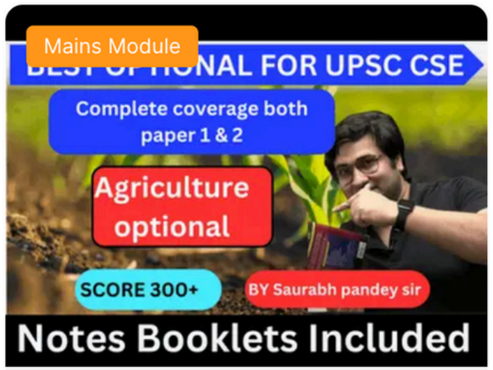
See More →



"PT 730" PANDEY JI ADVANCED CURRENT...

Admin

Start Learning



Complete Agriculture Optional For IAS/IFoS (...

Admin

Start Learning

Summary With Explanation Of...

Admin

Start Learning

Prelims Vijay Series – 10 Full Length Tests For...

Admin

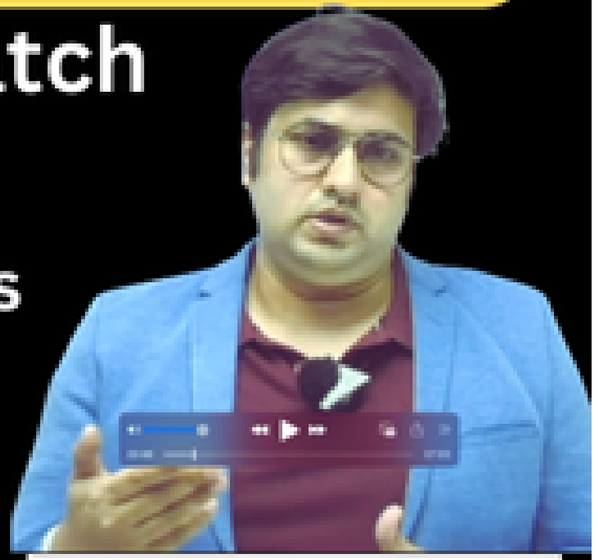
Start Learning

LAST MILE BATCH

"LAST MILE" BATCH For Prelims 2024

C-GESIA Batch

- PT 730- 2yrs current
- International relations
- Agriculture for GS
- 10 Full length Tests
- Advance Geo, environment and science



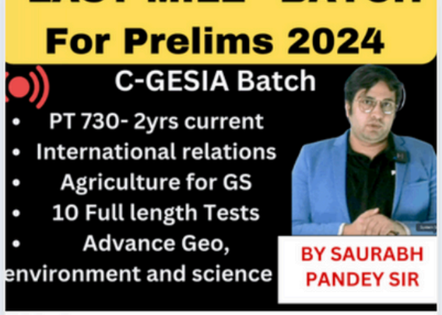
BY SAURABH PANDEY SIR

ONE COURSE ALL SUBJECTS

Rs 3897

CONNECT WITH SIR

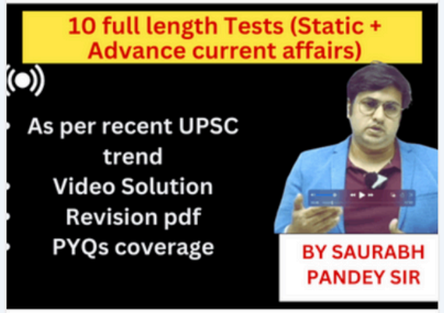
9057921649



Last Mile Batch For UPSC Pr elims 2024. (C-GESIA BAT...

Created by: You(Owner)

5 months



Prelims Vijay Series - 10 Ful l length Tests For upsc pre...

Created by: You(Owner)

4 months

International relations (Basi cs and current affairs)

Created by: You(Owner)

6 months Live

Agriculture for General stud ies

Created by: You(Owner)

6 months Live

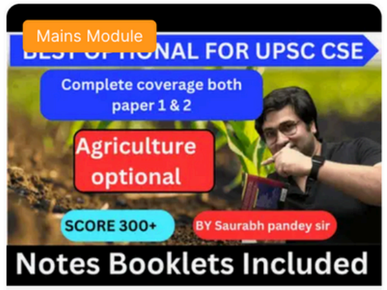
Popular Courses

See More →

"PT 730" PANDEY JI ADVANCED CURRENT...

Admin

Start Learning



Complete Agriculture Optional For IAS/IFoS (...

Admin

Start Learning

Summary With Explanation Of...

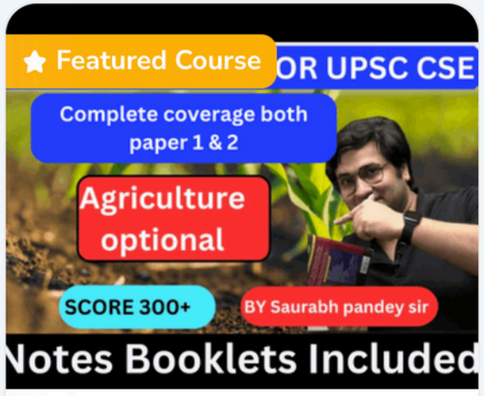
Admin

Start Learning

Prelims Vijay Series – 10 Full Length Tests For...

Admin

Start Learning



Complete Agriculture option al For IAS/IFoS (Batch-2)

Created by: You(Owner)

8 months

DOWNLOAD APP

Google Play Games Apps Movies & TV Books Kids

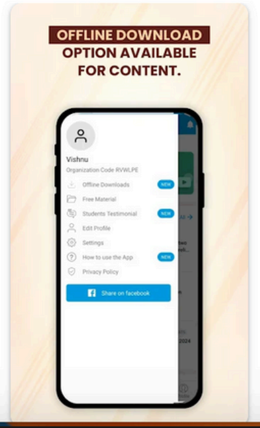
Saurabh Pandey CSE

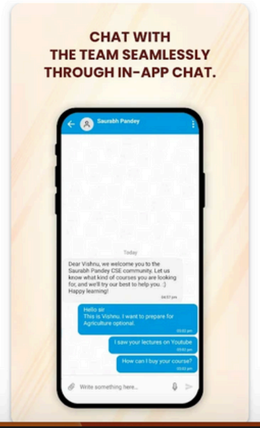
Saurabh Pandey CSE

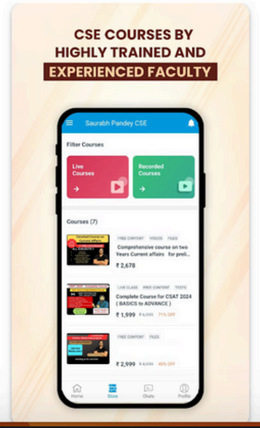
4.8★ 73 reviews | 1K+ Downloads | E Everyone

Share | Add to wishlist

You don't have any devices







App support

Target Mains 2024/25 - essay topic

Q‘Climate change will alter the pace of economic growth”Discuss

Q 'जलवायु परिवर्तन आर्थिक विकास की गति को बदल देगा' चर्चा करें

send your answer - Saurabh pandey upsc telegram channel