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10 MCQ QUIZ



“If you tell the truth, you don't have to remember anything.”

— Mark Twain

FULL REPORT
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Cong. seeks clarity over Trump's remarks on jets

U.S. President says five jets were shot down during the India-Pakistan conflict without specifying which country suffered the losses; Congress leader says country has the right to know the truth

The Hindu Bureau
NEW DELHI

The Congress on Saturday attacked the Centre over U.S. President Donald Trump's latest statement that "five jets were shot down" during the India-Pakistan conflict that followed Operation Sindoor in May.

Mr. Trump repeated his earlier claims about the U.S. role in the ceasefire, which the Centre has consistently denied. In his comments made on Friday evening in Washington, Mr. Trump did not specify which country's jets were shot down.

Congress MP Rahul Gandhi, Leader of the Opposition in the Lok Sabha, indicated that his party was likely to push for answers from Prime Minister



Planes were being shot out of the air... I think five jets were shot down... India and Pakistan were going at it, and they were back and forth, and it was getting bigger and bigger, and we got it solved through trade

DONALD TRUMP
U.S. President



Narendra Modi on this issue in the Monsoon Session of Parliament, which begins on Monday.

"Modiji, what is the truth of the five jets? The country has a right to know," Mr. Gandhi said in a post on X.

Congress communications chief Jairam Ramesh said that this was the "24th time" Mr. Trump had

claimed to have stopped the conflict with trade threats, and demanded that Mr. Modi make a "clear and categorical" statement in Parliament on the issue.

Mr. Trump was speaking at a dinner with Republican Senators at the White House when he referred to the India-Pakistan clash, amongst a list of glo-

bal conflicts he claimed to have stopped.

"We're not making a trade deal if you're going to be throwing around weapons and maybe nuclear weapons," Mr. Trump said he told the leaders of both countries.

The Ministry of External Affairs did not respond to Mr. Trump's latest remarks. Pakistan's military had claimed to have shot down several Indian jets during Operation Sindoor on May 7.

The Prime Minister "clearly conveyed to President Trump" that the conflict was wound down bilaterally as per established procedures, Foreign Secretary Vikram Misri said on June 17.

INDIA BLOC QUESTIONS

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1. Trump's Controversial Statement

- U.S. President Donald Trump claimed that **five jets were shot down** during the **India-Pakistan conflict** post **Operation Sindoor** (May).
- He did not specify which side suffered the losses.
- He added that the issue was resolved "through trade."

2. Congress' Reaction

- **Rahul Gandhi**, Congress MP, demanded the **truth** be shared with the Indian public, stating:
 - "The country has the right to know."
 - Question posed to PM Narendra Modi.
- **Jairam Ramesh**, Congress communication chief, emphasized:
 - This was the **24th time Trump claimed to have stopped the conflict** between India and Pakistan.

3. Government of India's Response

- The **Ministry of External Affairs (MEA)** has not responded to the statement.
- **Foreign Secretary Vikram Misri** said on June 17 that:
 - PM Modi told Trump the conflict was "wound down bilaterally as per established procedures."

4. Pakistan's Claim

- Pakistan had **claimed shooting down several Indian jets** during **Operation Sindoor** on May 7.

5. Trump's Context

- Statement was made during dinner with **Republican Senators** at the **White House**.
- Warned both nations about **nuclear escalation** and **trade consequences**.

Centre nearly doubles PSU dividends since 2020, thanks to coal, oil firms

T.C.A. Sharad Raghavan
NEW DELHI

Over the past five years, the Centre has nearly doubled the dividends it has received from public sector undertakings (PSUs) to ₹74,000 crore, with an analysis by *The Hindu* showing it relies heavily on a few oil, gas, and coal companies for a large chunk of these dividends.

The analysis excluded dividends from the Reserve Bank of India and the nationalised banks.

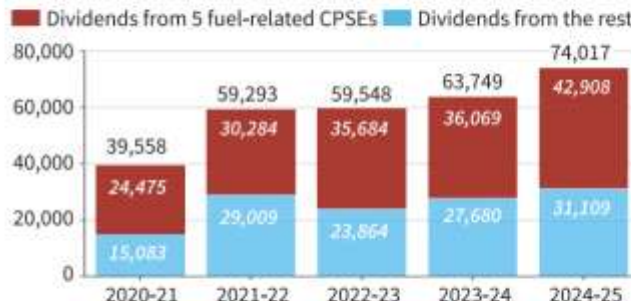
The analysis of company-wise dividend data from the Department of Investment and Public Asset Management (DIPAM) for

the past five years shows that five fuel-related PSUs accounted for 42% of the total dividends the government has collected since the financial year 2020-21. These companies – Coal India Ltd, Oil & Natural Gas Corporation (ONGC), Indian Oil Corporation (IOC), Bharat Petroleum Corporation (BPCL), and Gail (India) – contributed ₹1.27 lakh crore, or 42.3% of the total ₹3 lakh crore dividends the Centre received from non-banking PSUs between 2020-21 and 2024-25.

The data also show that the two directly owned public sector oil marketing companies (OMCs) – IOC

Dividend surge

The chart shows the Centre's dividend receipts from PSUs nearly doubled from ₹39,558 crore in FY21 to ₹74,017 crore in FY25



Note: This excludes dividends from RBI and public sector banks

Source: Department of Investment and Public Asset Management

and BPCL – together saw a 255% increase in their dividend payouts to the government since 2022-23 and a 65% decrease in oil

prices. However, they only passed on a 2% decrease in petrol prices to the public. The third public sector OMC, Hindustan Petro-

leum, is owned by ONGC, and not directly by the government.

The total dividends from non-banking PSUs have also grown consistently since the COVID-19 pandemic. The government collected ₹39,558 crore as dividends from these companies in 2020-21, which almost doubled to ₹74,017 crore by 2024-25.

According to sources in the government, this is due to a “calibrated” approach to balance revenues from disinvestments and dividends.

“The government’s disinvestment policy announced during the pan-

demic is still very much in place, but it is not progressing as fast as it was initially hoped,” the official told *The Hindu*. “At the same time, many PSUs are turning profitable and so the government is maximising the dividends it can earn from them.”

However, since then, enhancing dividends has also become a part of official policy.

An office memorandum sent out by DIPAM in November 2024 laid out new rules for how much dividends these companies must pay their shareholders, the largest of which is the Government of India.

According to the new

rules, every Central PSU must pay a minimum annual dividend of 30% of its Profit After Tax (PAT) or 4% of its net worth, whichever is higher. In fact, the government has pushed these PSUs to pay dividends much higher than this mandatory amount.

“The minimum dividend as indicated in para 5.1 above is only a minimum benchmark,” it said. “The CPSEs [Central Public Sector Enterprises] are advised to strive paying higher dividend taking into account relevant factors such as profitability, capex requirements with due leveraging, cash reserves and net worth.”

1. Doubling of PSU Dividends (2020–2025)

- The Centre's dividend receipts from **non-banking PSUs** grew from ₹39,558 crore (FY21) to **₹74,017 crore (FY25)**.
- The data excludes dividends from **RBI and nationalised banks**.

2. Major Contributors: Fuel-Related PSUs

- 5 fuel-related PSUs contributed **₹1.27 lakh crore**, accounting for **42.3%** of total ₹3 lakh crore dividends between FY21–FY25.
 - These PSUs include:
 - **Coal India Ltd**
 - **ONGC**
 - **IOC**
 - **BPCL**
 - **GAIL (India)**

3. Dividend Surge by Oil Marketing Companies (OMCs)

- IOC and BPCL saw a **255% rise in dividend payouts** since 2022–23 despite a **65% fall in oil prices**.
- Hindustan Petroleum, owned by ONGC, also contributed dividends indirectly.

4. Post-COVID Strategy & Disinvestment Policy

- Government adopted a **“calibrated” approach** balancing dividends and disinvestment revenues post-COVID.
- **Memo by DIPAM (Nov 2024):**
 - Mandated **minimum dividend** of:
 - **30% of Profit After Tax (PAT)** or
 - **4% of net worth**, whichever is higher.

◆ Economic Facts:

- Dividends are a major part of **non-tax revenue** for the Centre.
- Shift from disinvestment to dividend maximisation due to **slow progress in asset sales**.
- Shows fiscal pressure management through internal resources.

◆ Political/Administrative Insight:

- DIPAM (Department of Investment and Public Asset Management) under the Finance Ministry is central in **investment and dividend policy** for PSUs.
- Post-COVID recovery strategy highlights **policy shift in revenue collection**.

◆ Sectoral Importance:

- Focused on **energy and resource PSUs** (coal, oil, gas).
- Reflects dependency on strategic sectors for public finance management.

◆ Governance/Policy Perspective:

- Highlights **corporate governance mandates** in CPSEs (Central Public Sector Enterprises).
- Shows Government's dual role as **regulator and majority shareholder**.

Q. Consider the following statements regarding PSU dividends and the Government of India's revenue policy:

1. Since 2020-21, five fuel-related CPSEs have accounted for more than 40% of the total dividend receipts from non-banking PSUs.
2. The Government mandates every Central PSU to pay a minimum dividend of 50% of its net profit or 4% of its net worth, whichever is higher.
3. The recent DIPAM policy emphasizes balancing dividend income with disinvestment to manage fiscal pressures.

Which of the above statements is/are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

Top court to hear Article 143 reference on President and Governor's powers on July 22

Krishnadas Rajagopal
NEW DELHI

The Supreme Court will hear on Tuesday a Presidential Reference under Article 143 of the Constitution asking if the court can "impose" timelines and prescribe the manner of conduct of Governors and the President while dealing with State Bills sent to them for assent or reserved for consideration.

A Constitution Bench comprising Chief Justice of India (CJI) B.R. Gavai and Justices Surya Kant, Vikram Nath, P.S. Narasimha, and A.S. Chandurkar will hear the matter.

Broadly, the Presidential Reference has asked whether judicial orders can dictate by what time and in what manner the President and Governors should function under Articles 200 (which covers the process of grant of assent by Governors to State Bills) and 201 (when Bills are reserved by Governors for Presidential assent) of the Constitution.

Key question

"In the absence of any constitutionally prescribed time limit or manner of exercise of powers by a Governor, can time limits be imposed and manner of exercise of powers be prescribed through judicial orders? Can judicial orders impose timelines and manner of exercise of powers by the President under Article 201," the reference dated May 13, the last working day of former CJI Sanjiv Khanna, has asked.

The President's move to seek clarity under the top court's advisory jurisdiction arises from an April 8 judgment by a Supreme Court Bench of Justices J.B. Pardiwala and R. Mahadevan on a petition filed by the Tamil Nadu govern-

Review questions

The reference arises from an April 8 judgment by the SC which held that a Governor could not indefinitely delay decision on a Bill

What the reference seeks:

- The top court's opinion on the very 'contours and scope' of Article 143

- Validity of a two-judge Bench's judgment on 'substantial questions of law'

- The options before a Governor when a Bill is presented to him under Article 200

- Validity of a law being in force without the assent of the Governor



ment challenging the Governor's delay in clearing 10 re-passed Bills, and his subsequent action to reserve them for consideration by the President.

The two-judge Bench had ruled that the Governor's action was illegal. This had led to the default cancellation of the President's decision to assent to one of the 10 Bills, while rejecting seven and not considering two others.

The verdict, authored by Justice Pardiwala, had invoked Article 142 of the Constitution to deem that all 10 Bills had got assent.

The reference has now sought the court's opinion on the very "contours and scope" of Article 142.

Questions scope

"Can the Constitutional powers of the President/Governors be substituted by a judicial order exercising Article 142? Is Article 142 limited to matters of procedural law or does it extend to issuing directions contrary to or inconsistent with existing substantive or procedural provisions of the Constitution?" it asked.

Indirectly questioning the validity of the "deemed" assent, the reference has asked whether a law made by a State Legislature could even "be con-

sidered a law in force without the assent of the Governor".

"Are decisions of the Governor and the President under Articles 200 and 201, respectively, justiciable at a stage prior to even the Bill in question becoming a law? Is it permissible for the courts to undertake judicial adjudication over the contents of a Bill, in any manner, before it becomes law?" the Presidential reference queried.

It said that the "concept of deemed assent" of the President and the Governor, introduced in the judgment, was alien to the constitutional scheme, and worked to fundamentally circumscribe the power of the President and Governors.

Vice-President Jagdeep Dhankar had called Article 142 a "nuclear missile against democratic forces".

In his judgment, Justice Pardiwala had explained that Article 142 was invoked only to do complete justice in public interest for the people of Tamil Nadu.

The reference has also touched on the basics of Article 200, asking the court to clarify the constitutional options before a Governor when a Bill is presented to him under Article 200.

1. Background of the Case

- The Supreme Court will hear a **Presidential Reference** under **Article 143** of the Constitution on **July 22, 2025**.
- The reference seeks clarity on:
 - Whether the **court can impose timelines** on the **President and Governors** for action on **State Bills**.
 - The **constitutional limits of Article 142**, which allows the SC to pass decrees to do "complete justice".

2. Judicial Context

- The matter arose after an **April 8 judgment** where a two-judge SC bench:
 - Held that the **Governor's delay** in assenting to re-passed Bills was **illegal**.
 - Directed the **President to decide** on 10 Bills passed by the Tamil Nadu Assembly.
 - The President gave assent to **7 Bills**, withheld on **1**, and kept **2 pending**.

3. Core Legal Questions

- Can the **constitutional powers** of the President and Governors under **Article 200 and 201** be **substituted or controlled by judicial orders**?
- Is it legally valid for a **State Legislature to enact a law** without the Governor's assent if delayed indefinitely?

4. Article 143 Reference

- Presidential Reference by **CJI D.Y. Chandrachud's bench** will consider:
 - Validity of earlier SC ruling under **Article 142** on "deemed assent".
 - The **manner of exercise of powers** under **Article 200 and 201**.
 - Whether such powers can be judicially regulated.

5. Vice President's Remark

- **VP Dhankhar** called Article 142 a "**nuclear missile** against democratic forces" — highlighting concern over judicial overreach.

- **Article 143:** Allows the President to seek **SC's advisory opinion** on important legal questions.
- **Article 142:** Empowers SC to pass any decree necessary for **complete justice**.
- **Article 200 & 201:** Relate to **Governor's role** in assent or reservation of Bills.

Judicial Review and Separation of Powers

- The issue explores the **balance between the judiciary and executive** in law-making.
- Raises debate on **judicial activism** vs. **legislative supremacy**.

Governance & Federalism

- Governor's actions in non-assenting to State Bills often spark **Centre–State tensions**.
 - Questions over whether such **delays undermine democratic process**.
-

Q. Consider the following statements regarding the powers of the President and Governors under Articles 200, 201, and 143:

1. Article 143 empowers the President to seek the Supreme Court's advisory opinion on any question of law or fact.
2. Article 142 allows the President to issue directions to the judiciary to ensure complete justice.
3. Under Article 200, a Governor can either give assent, withhold assent, or reserve a Bill for the President's consideration.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

New TB skin test by Kerala govt. offers simple, accurate way to detect disease

C. Maya

THIRUVANANTHAPURAM

Health authorities in Kerala have introduced a new intradermal test called Cy-TB for detecting and treating tuberculosis (TB) infection following the prioritisation of latent TB infection treatment under the National TB Elimination Programme (NTEP).

TB infection is different from active TB disease. A person with TB infection harbours the organism causing TB infection (*Mycobacterium tuberculosis*) in the body. But the organism remains dormant or inactive in the body and the person neither has any TB

symptoms nor is he contagious. If left untreated, 5-10% of them will progress to developing active TB disease when the body's immune system weakens. This could happen within weeks of acquiring the infection or maybe years.

A community-based cross-sectional study among adults in Thiruvananthapuram district in 2023 had reported that 20.5% of the adult population have tuberculosis infection. The study tested whole blood samples of 396 adults for TB infection and found that the prevalence of TB infection increased with age, ranging from 11.5% in the 18-35 age



The State currently uses Interferon Gamma Release Assay (IGRA) test for detection.

group to 30.3% in the 58-years-plus age group.

Since 2021, Kerala has been using the blood test Interferon Gamma Release

Assay for detecting TB infection. However, this test required extensive laboratory support and it had a waiting period too.

Cy-TB is a highly specific, accurate and user-friendly skin test, wherein 0.1 ml dose of *M. tuberculosis*-specific antigens are injected into the skin in the inner forearm. An induration (a raised area) of 5 mm or more which develops on the skin within 48-72 hours indicates TB infection.

Cy-TB will be offered in district TB centres, taluk hospitals, at the block level in some districts and in all dialysis centres. The test is currently available in major private hospitals.

1. New Cy-TB Test Introduced

- Kerala health authorities introduced **Cy-TB**, a new **intradermal skin test** for detecting **latent TB infection**.
- Part of the **National TB Elimination Programme (NTEP)**.

2. Difference Between TB Infection & TB Disease

- **TB Infection:** Person harbours *Mycobacterium tuberculosis*, but remains dormant/inactive.
- The person has **no symptoms** and is **not contagious**.
- **5–10%** of those with latent infection may progress to **active TB** if immunity weakens.

3. Cy-TB Test Details

- **Mechanism:**
 - 0.1 ml of *M. tuberculosis*-specific antigens are injected into inner forearm.
 - A **raised area (induration)** of **≥ 5 mm** within **48–72 hours** indicates TB infection.
- **Advantages:**
 - **User-friendly**, highly **specific**, and more **accessible** than earlier methods.
- **Implementation:**
 - Available in **district TB centres**, **taluk hospitals**, **block level**, **dialysis centres**, and major **private hospitals**.



4. Comparison with Existing Test

- Earlier, Kerala used **Interferon Gamma Release Assay (IGRA)** since 2021.
 - IGRA is a **blood test** needing lab support and a waiting period.
- Cy-TB is seen as a **simpler and more scalable alternative**.

5. Prevalence Study

- **Thiruvananthapuram study (2023):**
 - 20.5% of adults had TB infection.
 - Prevalence rises with age: from **11.5% (18–35 yrs)** to **30.3% (58+ yrs)**.
 - Based on testing of **396 blood samples**.
-

Global TB statistics



2 billion people harbour a dormant form of *M. tb* infection worldwide



5 – 10% of latently infected individuals are predisposed to developing active TB in their lifespan



HIV co-infection increases the risk of TB reactivation by 18 times



around 10 million people fall ill with TB every year at least since 2000



> 1 million people succumb to death from TB every year at least since 2000

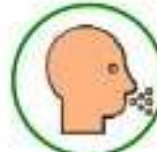
Active TB symptoms



Chest pain



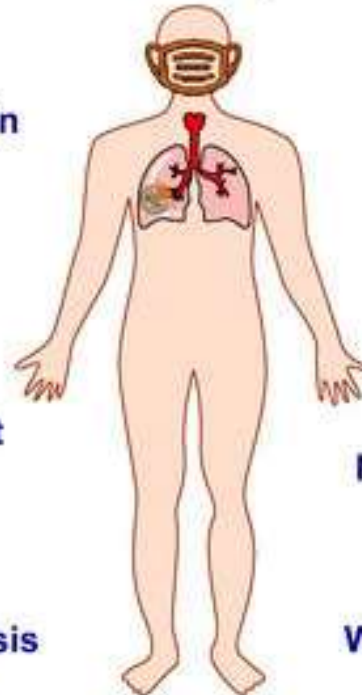
Fever



Persistent cough



Hemoptysis



Fatigue



Loss of appetite



Night sweat



Weight loss



Prevalence

Global TB-related Deaths in 2022 and 2023

2022

1.32 M

2023

1.25 M

Every day, **3500 People**
die from TB
worldwide



India (26%)

Low- and middle-income countries carry **87%** of
the global TB burden



Indonesia



China



Philippines



Pakistan

56%

Primary risk factors



Types of Drug-Resistant TB

Multidrug-Resistant TB (MDR-TB)

TB Bacteria resistant to at least **isoniazid** and **rifampicin**.



Fever and night sweats

Extensively Drug-Resistant TB (XDR-TB)

TB bacteria resistant to isoniazid, rifampin, fluoroquinolone, and second-line injectables.



Fatigue

Government Strategies to end TB

National Tuberculosis Elimination Program (NTEP): Aims to eradicate TB in India by 2025.

erculosis (TB)
Community

Engagement Initiatives like the **Pradhan Mantri TB Mukht Bharat Abhiyan**

Project Axshya Plus involves contact tracing, testing, and managing latent TB infections.



TB Preventive Therapy

to individuals at high risk of developing active TB.

Ni-kshay Mitras

encourage public involvement in TB care and awareness.

Eliminating TB

UN aims to end the TB epidemic by **2030**. **India** aims to eliminate TB by **2025**.



- It is a curable disease. Treatment depends on whether it is **drug-resistant** or **simple** tuberculosis.



BPaLM Regimen for MDR-TB

- It consists of a four-drug combination – **Bedaquiline, Pretomanid, Linezolid and Moxifloxacin.**
- It is a **highly effective** and **shorter** treatment option than the previous MDR-TB treatment procedure.

Q. Consider the following statements regarding the new Cy-TB test introduced by Kerala:

1. The Cy-TB test is used for detecting active tuberculosis cases only.
2. It involves the intradermal injection of *Mycobacterium tuberculosis*-specific antigens.
3. A positive Cy-TB test shows a raised skin reaction (induration) within 48–72 hours.
4. The test requires extensive lab support and a long waiting time, similar to the IGRA test.

Which of the statements given above is/are correct?

- A. 1 and 4 only
- B. 2 and 3 only
- C. 1, 2 and 4 only
- D. 2, 3 and 4 only

FALL 1999
PAGE 4

Mental fatigue can trick the brain into taking the easy way out

Even moderate work can feel exhausting when sustained for hours together. This exhaustion is called cognitive fatigue and builds up with continuous effort to maintain focus on daily tasks. While cognitive fatigue affects our performance and focus, a new study has found that it also influences decision-making by making one prefer easier tasks.

Mental fatigue:

After a long day at work, it's easier to see why the couch feels like the gym, scrolling on social media feels like a workout. Our exhausted brains favor easier tasks, even if — according to a new study in the *Journal of Neuroscience* — those tasks offer fewer benefits. Even moderate work can feel exhausting when sustained for hours together. This exhaustion is called cognitive fatigue and builds up with continuous effort to maintain focus on daily tasks. While cognitive fatigue affects our performance and focus, the new study has found that it also influences decision-making by making one prefer easier tasks. "Everybody has different capacities for work," Steven Clark of the Johns Hopkins School of Medicine and the lead author of the study said. "We all have a subjective sense of effort — what you may find easy, I might find difficult." The study also provides a neurological model to explain how fatigue can influence everyday decisions.

Really cool: For first, how does sustained effort build up to cognitive fatigue, and how does it affect decisions about exerting further effort?

To answer these questions, researchers recruited healthy volunteers to repeatedly perform a working memory task. These individuals focused on a screen flashing different letters one by one. In the next session of the task, they had to recall if the current letter matched the preceding one. As the task got harder, volunteers had to recall if the current letter was the same as the letter before.

Next, the participants were offered two choices: easy or difficult version of the task for less money or difficult version of the task for more money. Fatigued participants chose the easy option more often if it meant earning less money, whereas they opted for harder tasks for more money when they were rested.

"It was really cool to see something we expected but not more quantified before, that fatigue actually influenced the participants' choices," Dr. Clark said. While the participants made their choices, the researchers tracked their brain activity using functional magnetic resonance imaging (fMRI). This noninvasive technique allows scientists to pinpoint brain regions that are active during a task. As participants performed the working memory task and reported



Mental fatigue can directly change the value of some efforts, making the task seem more demanding than it actually was. (Shutterstock)

feeling fatigued, fMRI revealed the dorsolateral prefrontal cortex (DLPFC), located just behind the forehead, was activated, in line with its understood role. fMRI scans also revealed the right anterior insula was active when the participants made their choices. This region judges whether the effort required for a task is worth the reward. In previous studies from Dr. Clark's group, the insula had been found to enhance the effect of performing a physical task while physically fatigued.

Pushing harder: In this study, the role of the insula was extended to modulating cognitive effort. "This is our current working model of where effort is evaluated in the brain. The insula receives input of fatigue signals from working memory tasks from the DLPFC and of fatigue resulting from physical tasks from the motor system, and it guides decisions about future effort based on the level of fatigue," Dr. Clark explained.

A big strength of this study is that it links connectivity between working memory tasks and decision-making. "We have all experienced this in our daily lives: when a deadline looms, we push ourselves harder to finish a task at hand despite needing more effort. The study also opens new questions. Dr. Winkler, who studies cognitive fatigue on much longer time scales up to six hours in his research, wondered, "There are short-term and long-term fatigue

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effects indeed? There are cognitive capacities involved about a night of sleep?" Can cognitive fatigue influence effort-based choices for any task? "We have a new study coming up where we repeat that cognitive fatigue, as induced here with the working memory task, makes participants choose more of a physical task requiring less effort," Dr. Clark said. In other words, there may be a neurological reason to avoid the gym when one is mentally exhausted.

There for a break: Cognitive fatigue is a common symptom of many neurological and psychiatric conditions. Patients who have attention deficit hyperactivity disorder (ADHD) and those suffering from multiple sclerosis, chronic fatigue syndrome, depression, anxiety, and schizophrenia have reported mental fatigue, but the way fatigue manifests in these conditions is poorly defined. The new study is a step toward developing ways to manage fatigue by understanding how it affects effort and decision-making in the brain.

How can we avoid fatigue slowing us down? Dr. Clark advised being "mindful about taking breaks. While we haven't directly tested it, reducing caffeine can also help." The next time you catch yourself making a poor but easy choice while mentally tired, you know it's time for a break. (Steven Clark has a PhD in neuroscience and works as a senior writer at [sciencedigitaljournal.com](https://www.sciencedigitaljournal.com).)

THE GIST

In summary, it is a study that has shown that when people are tired, they are more likely to choose the easy option over a difficult version for more. Fatigued participants chose the easy option more often if it meant earning less, whereas they opted for harder tasks for more money when they were rested.

Researchers reported that when participants reported fatigue as they performed their tasks, their performance didn't drop. This was unexpected to mean that as people performed harder tasks, the fatigue made them push harder rather than compromise performance.

Cognitive fatigue is a symptom of many neurological conditions, but its role in fatigue-related decisions is poorly defined. The new study is a step toward developing ways to manage fatigue by understanding how it affects effort and decision-making in the brain.

BIG SHOT



Protesters carried a coffin in front of the White House, in Washington, D.C., on July 15, 2024. They say the coffin is a symbol of the lives lost to gun violence, which has been rising steadily, particularly among young people and Black, which can lead to neighborhood violence, trauma and fear, and fear of safety. (AP Photo/Chris Wedel)

WHAT IS IT?

Moon Day: remembering the leap

The Hindu Bureau

Q International Moon Day is celebrated every year on July 20 to commemorate humanity's first landing on the moon by the Apollo 11 mission in 1969. The UN General Assembly formally recognized this day in 2023, following a proposal recommended by the Committee on the Peaceful Uses of Outer Space (COPUOS). The commemoration also aims to highlight the collaborative progress of all nations in exploring the moon. On the day, activities like public events, sky-gazing, educational outreach, and science competitions are organized worldwide to inspire curiosity and foster interest in space science, especially among the youth. According to the UN, International Moon Day also serves to promote sustainable practices in space, international cooperation, peaceful exploration, and the responsible use of lunar resources. There have been minor criticisms related to the chosen date. Some commentators have noted that while the Apollo 11 lunar module landed on July 20, humanity's first step on the moon occurred at 2:56 UTC on July 21. This ambiguity has occasionally generated debate over whether July 21 is more accurate to commemorate. There is also



An aerial view of the moon, the red glow is a reflection of the sun's light. The moon is a day ahead of the full moon on August 16, 2024. (AP Photo)

occasional commentary questioning whether the date, rooted in an American achievement, fully encompasses the international spirit intended by the UN. However, since other nations have contributed significantly to lunar exploration, despite these discussions, July 20 remains globally recognized for now as the date humankind first leapt beyond the earth.

For feedback and suggestions: For feedback, please write to editorial@thehindu.co.in with the subject "Daily page".

Moon Day: remembering the leap

The Hindu Bureau



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An aircraft passes in front of the moon; the red glow is attributable to smoke particles from North American wildfires, a day ahead of the full supermoon on August 18, 2024. REUTERS

occasional commentary questioning whether the date, rooted in an American achievement, fully encompasses the international spirit intended by the UN, more so since other nations have contributed significantly to lunar exploration.

Despite these discussions, July 20 remains globally recognised for now as the date humankind first leapt beyond the earth.



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with the subject 'Daily page'

1. International Moon Day: Introduction

- Celebrated every year on **July 20**.
- Commemorates the **first human landing on the Moon** via **Apollo 11 mission** in **1969**.
- Formally recognized by the **United Nations General Assembly (UNGA)** in **2021**.

2. UN Involvement

- Date proposed by the **Committee on the Peaceful Uses of Outer Space (COPUOS)**.
- Focus: Collective achievements in lunar exploration by all nations.

3. Objectives of International Moon Day

- **Public awareness and youth engagement:**
 - Events: Public sky-gazing, educational outreach, science competitions.
 - Aimed at inspiring curiosity in **space science**, especially among youth.

- **Sustainable space practices:**
 - Emphasizes:
 - Peaceful use of outer space.
 - International cooperation.
 - Sustainable lunar resource management.

4. Criticisms and Debates

- **Date controversy:**
 - Armstrong's first step on Moon: **2:56 UTC on July 21**, not July 20.
 - This leads to debate whether **July 21** is more accurate to celebrate.
- **Geopolitical viewpoint:**
 - Critics argue that choosing July 20 (a **US-centric milestone**) may undercut the **global spirit** intended by the UN.
 - Other nations have also made significant contributions to lunar missions (e.g., USSR, China, India).

Dimension	Related Facts
Historical	Apollo 11 launched by NASA; Neil Armstrong's first step on Moon in 1969.
Geographical	Moon is Earth's only natural satellite; ~384,400 km away from Earth.
Political	UNGA resolution to observe Moon Day emphasizes peaceful space cooperation.
Scientific	First manned Moon landing via Saturn V rocket by USA.
Social	Inspires global youth interest in astronomy and STEM education.
International	UN's COPUOS promotes space governance, non-militarization of Moon.

Apollo 11	1969	Armstrong, Aldrin, Collins	First Moon landing	Major success – Armstrong & Aldrin walked on Moon
Apollo 12	1969	Conrad, Gordon, Bean	Precision Moon landing	Success – landed near Surveyor 3; returned Moon rocks
Apollo 13	1970	Lovell, Swigert, Haise	Intended Moon landing	Failure – oxygen tank exploded; crew returned safely
Apollo 14	1971	Shepard, Roosa, Mitchell	Moon landing	Success – landed at Fra Mauro; conducted Moonwalks
Apollo 15	1971	Scott, Worden, Irwin	First use of Lunar Rover	Success – explored Hadley Rille area
Apollo 16	1972	Young, Mattingly, Duke	Moon landing	Success – explored lunar highlands
Apollo 17	1972	Cernan, Evans, Schmitt	Final Moon landing	Success – longest Moon stay, first scientist on Moon

The Peregrine lunar lander is expected to touch down on 23 February

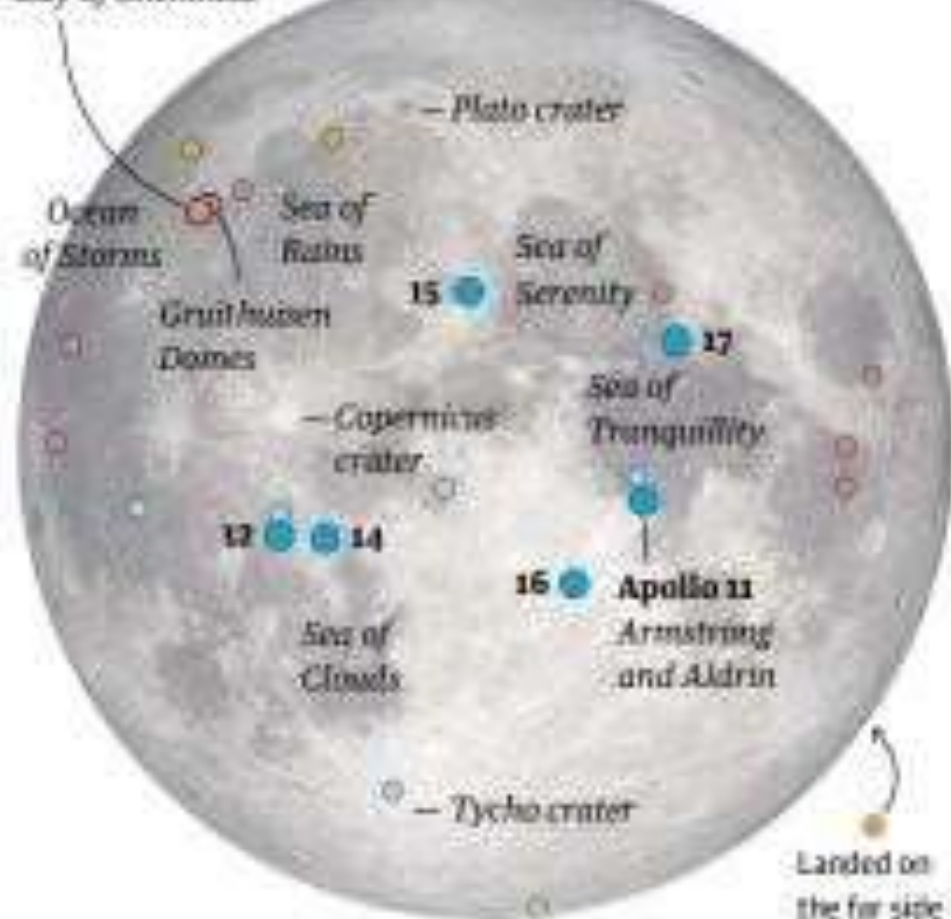
Successful landings: ● US manned Apollo missions 1969-72

○ US Surveyor 1966-68 ○ USSR Luna 1966-76

● China Chang'e 2013-20 ○ India Chandrayaan 2023

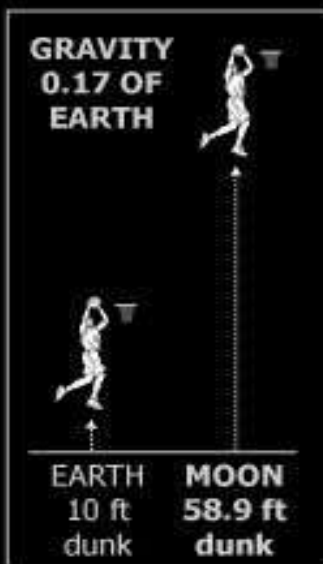
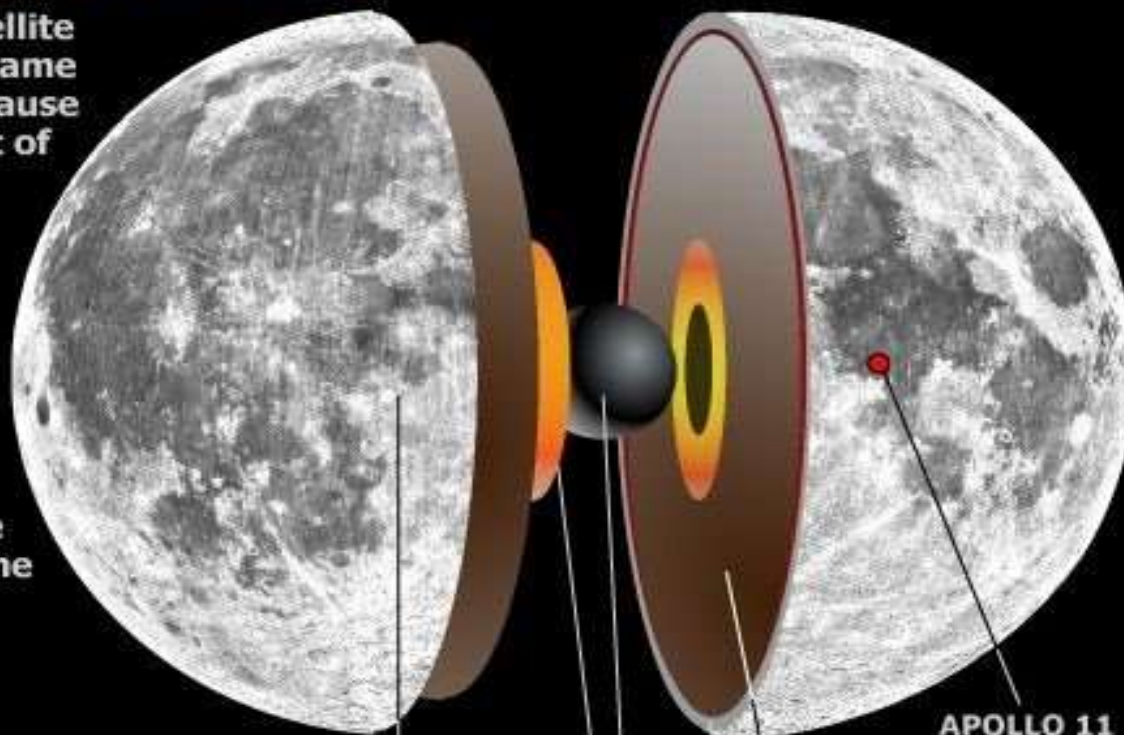
Planned touchdown

Bay of Stickiness



Inside Earth's MOON

Our large natural satellite always presents the same face to the Earth, because it completes one orbit of Earth in about the same span of time it takes to complete one rotation. The dark plains on the side facing Earth are volcanic features called seas, or "maria." The first human landing on the moon took place on the Sea of Tranquility.



SURFACE CONDITIONS
AIR PRESSURE: none
TEMPERATURE RANGE: from about -280°F (-173°C) at night to +260°F (+127°C) in the daytime at the equator

PARTLY MELTED OUTER CORE
SOLID IRON CORE
LITHOSPHERE
CRUST

APOLLO 11 LANDING SITE



Astronaut James Irwin on the moon, Apollo 15, August 1971

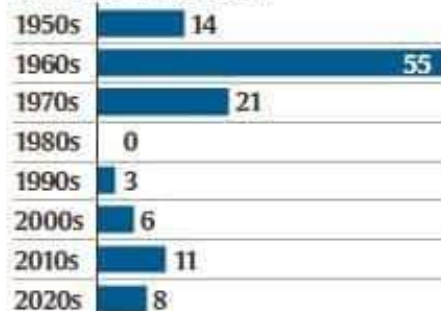


The moon is 2,159 mi (3,474 km) in diameter, about 1/4 that of Earth

Which countries, where, and when

Lunar Probes by Decade

Number of Probes Sent

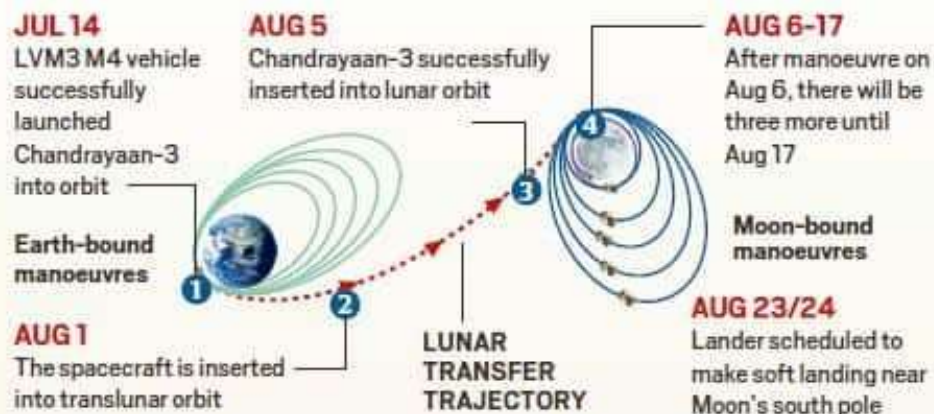


Lunar Probes Success Ratio



Source for all data: NASA Space Science Data Coordinated Archive

The Journey of Chandrayaan-3

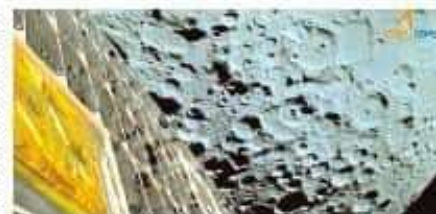


Lunar Probes by Country

Number of Lunar Probes



Lunar Probes by Type



The Moon from Chandrayaan-3 ISRO

MOON FIRSTS

- First attempt to fly to Moon | **Pioneer 0, 1958** | Failed
- First to provide Moon data | **Luna 1, 1959**
- First spacecraft to reach lunar surface | **Luna 2, 1959** | Crash landed on Moon
- First spacecraft to take pictures of Moon | **Luna 3, 1959**
- First soft-landing attempt on Moon | **Luna 5, 1965** | Failed
- First to get into Moon orbit, go around moon | **Luna 10, 1966**
- First to soft land | **Luna 9, 1966**
- First to send pictures from Moon's surface | **Luna 9, 1966**
- First spacecraft to carry human beings to Moon orbit | **Apollo 8, 1968**
- First humans on Moon | **Apollo 11, 1969**
- First lunar mission by Japan | **Hiten, 1990** | Moon probes resume
- First European Moon mission | **SMART-1, 2003**
- First Chinese Moon mission | **Chang'e 1, 2007**
- First Indian Moon mission | **Chandrayaan-1, 2008** | Confirms presence of water
- First soft landing on far side of Moon | **Chang'e 4, 2019**

Q. Consider the following statements regarding International Moon Day:

1. It was officially recognized by the United Nations General Assembly in 2021.
2. The date July 20 marks the exact time of Neil Armstrong's first step on the Moon.
3. The celebration aims to promote peaceful and sustainable use of outer space.

Which of the above statements is/are correct?

- A) 1 and 2 only
- B) 1 and 3 only
- C) 2 and 3 only
- D) 1, 2 and 3

Mental fatigue can trick the brain into taking the easy way out

Even sedentary work can feel exhausting when sustained for hours together. This exhaustion is called cognitive fatigue and builds up with continuous effort to maintain focus on daily tasks. While cognitive fatigue affects our performance and focus, a new study has found that it also influences decision-making by making one prefer easier tasks

Shrestha Potdar

After a long day at work, it's easier to flop on the couch than hit the gym. Scrolling over social media wins over reading a book. Our exhausted brains favour easier tasks, even if – according to a new study in the *Journal of Neuroscience* – those tasks offer fewer benefits.

Even sedentary work can feel exhausting when sustained for hours together. This exhaustion is called cognitive fatigue and builds up with continuous effort to maintain focus on daily tasks. While cognitive fatigue affects our performance and focus, the new study has found that it also influences decision-making by making one prefer easier tasks.

"Everybody has different capacities for work," Vikram Chib of the Johns Hopkins School of Medicine and the lead author of the study said. "We all have a subjective sense of effort – what you may find easy, I might find difficult." The study also provides a neurobiological model to explore how fatigue can influence everyday decisions.

'Really cool'

But first, how does sustained effort build up to cognitive fatigue, and how does it affect decisions about exerting further effort?

To answer these questions, researchers recruited healthy volunteers to repeatedly perform a working memory task. These individuals focused on a screen flashing different letters one by one. In the easy version of the task, they had to recall if the current letter matched the preceding one. As the task got harder, volunteers had to recall if the current letter matched with those displayed anywhere between two to six letters prior. After performing the harder tasks many times in a row, participants reported feeling fatigued.

Next, the participants were offered two choices: easy version of the task for less money or difficult version of the task for more money. Fatigued participants chose the easy option even if it meant earning less money, whereas they opted for harder tasks for more money when they were rested.

"It was really cool to see something we expected but was never quantified before, that fatigue actually influenced the participants' choices," Dr. Chib said.

While the participants made their choices, the researchers tracked their brain activity using functional magnetic resonance imaging (fMRI). This noninvasive technique allows scientists to pinpoint brain regions that are active during a task. As participants performed the working memory task and reported



Mental fatigue can directly change the value of some effort, making the task seem more demanding than if a person was rested. TONY TREAS/REUTERS

feeling fatigued, fMRI revealed the dorsolateral prefrontal cortex (DLPFC), located just behind the forehead, was activated, in line with its understood role.

fMRI scans also revealed the right anterior insula was active when the participants made their choices. This region judges whether the effort required for a task is worth the reward. In previous studies from Dr. Chib's group, the insula had been found to estimate the effort of performing a physical task while physically fatigued.

Pushing harder

In this study, the role of the insula was extended to evaluating cognitive effort. "This is our current working model of where effort is evaluated in the brain. The insula receives input of fatigue resulting from working memory tasks from the DLPFC and of fatigue resulting from physical tasks from the motor cortex, and it guides decisions about future effort based on the level of fatigue," Dr. Chib explained.

"A big strength of this study is that it finds connectivity linking exertion to choice," Antonius Wiegler, a researcher studying motivation and cognitive fatigue at the Paris Brain Institute, said. Indeed, Dr. Chib and his team found that signals from the DLPFC representing fatigue influenced the neural activity of the insula. This meant fatigue directly changed the value of effort, making the task seem more demanding than when a



A big strength of this study is that it finds connectivity linking exertion to choice

ANTONIUS WIEGLER
Paris Brain Institute

person was rested.

The researchers also reported a peculiar observation: while participants reported feeling fatigued as they performed the hard tasks repeatedly, their performance didn't dip. The researchers interpreted this to mean that as people performed harder tasks, the fatigue made them pick easier tasks rather than compromise their performance.

Dr. Wiegler, who wasn't part of the study, agreed. "When the stakes are high and the benefits are clear, such as in this study, people can still use cognitive resources despite needing elevated effort. However, when benefits are uncertain or subjective, like in market decisions, the increased cost leads to behavioural changes."

We have all experienced this in our daily lives: when a deadline looms, we push ourselves harder to finish a task at hand despite needing more effort.

The study also opens new questions. Dr. Wiegler, who induces cognitive fatigue on much longer time scales (up to six hours) in his research, wondered, "How are short-term and long-term fatigue

effects related? How are cognitive capacities restored after a night of sleep?"

Can cognitive fatigue influence effort-based choices for any task? "We have a new study coming up where we report that cognitive fatigue, as induced here with the working memory tasks, makes participants choose even a physical task requiring less effort," Dr. Chib said. In other words, there may be a neurobiological reason to avoid the gym when one is mentally exhausted.

Time for a break

Cognitive fatigue is a common symptom of many neurological and psychiatric conditions. Patients who have suffered stroke and those suffering from multiple sclerosis, chronic fatigue syndrome, depression, anxiety, and schizophrenia have reported mental fatigue. Yet the way fatigue manifests in these conditions is poorly defined. The new study is a step towards developing ways to manage fatigue by understanding how it affects effort and decision-making in the brain.

How can we avoid fatigue skewing our daily decisions? Dr. Chib advised being "mindful about taking breaks. While we haven't directly tested it, refraining tasks can also help." The next time you catch yourself making a poor but easy choice while mentally tired, you know it's time for a break.

(Shrestha Potdar has a PhD in neuroscience and works as a science writer. shresthapotdar@gmail.com)

THE GIST

Volunteers in a study had two choices: an easy version of a task for less money or a difficult version for more. Fatigued participants chose the easy option even if it meant earning less, whereas they opted for harder tasks for more money when they were rested.

Researchers reported that while participants reported fatigue as they performed hard tasks, their performance didn't dip. This was interpreted to mean that as people performed harder tasks, the fatigue made them pick easier tasks rather than compromise performance.

Cognitive fatigue is a symptom of many neurological conditions. Yet the way fatigue manifests here is poorly defined. The new study is a step towards developing ways to manage fatigue by understanding how it affects effort and decision-making in the brain.

1. Core Idea

- Mental fatigue, even without physical exertion, can **influence the brain's decision-making** by pushing it towards **easier, low-effort options**.
- This condition, termed **cognitive fatigue**, affects performance, focus, and choice preference.

2. Cognitive Fatigue: Definition and Characteristics

- Occurs due to **continuous mental effort** required to focus on tasks for long hours.
- Even sedentary work can trigger fatigue.
- Results in a **subjective sense of effort**: tasks feel harder and more draining.
- Makes one choose **easier alternatives** over effortful or rewarding ones.

3. Key Findings from the Study

- Published in the Journal of Neuroscience.
- Method:
 - Participants were given tasks with **different difficulty levels** and had to choose between easier tasks with less reward or harder tasks with more reward.
 - A **functional MRI (fMRI)** was used to track brain activity.

Observations:

- **Observations:**

- Fatigued individuals were **more likely to choose easier options**.
- Decision-making centers in the brain (particularly the **anterior insula and dorsal prefrontal cortex**) showed **altered activity** under fatigue.
- The fatigue **distorted the brain's internal model of effort**, making tasks seem harder than they objectively were.

4. Neurological Insight

- Activity in the **anterior insula** (linked to internal sensations and emotional awareness) plays a critical role.
- Brain **misinterprets mental fatigue** as actual physical effort, leading to skewed decision-making.
- Fatigue results in **reduced connectivity** between regions linked to reward, control, and motivation.

5. Implications of the Findings

Prefrontal Cortex

Dorsolateral

Ventrolateral

Orbitofrontal

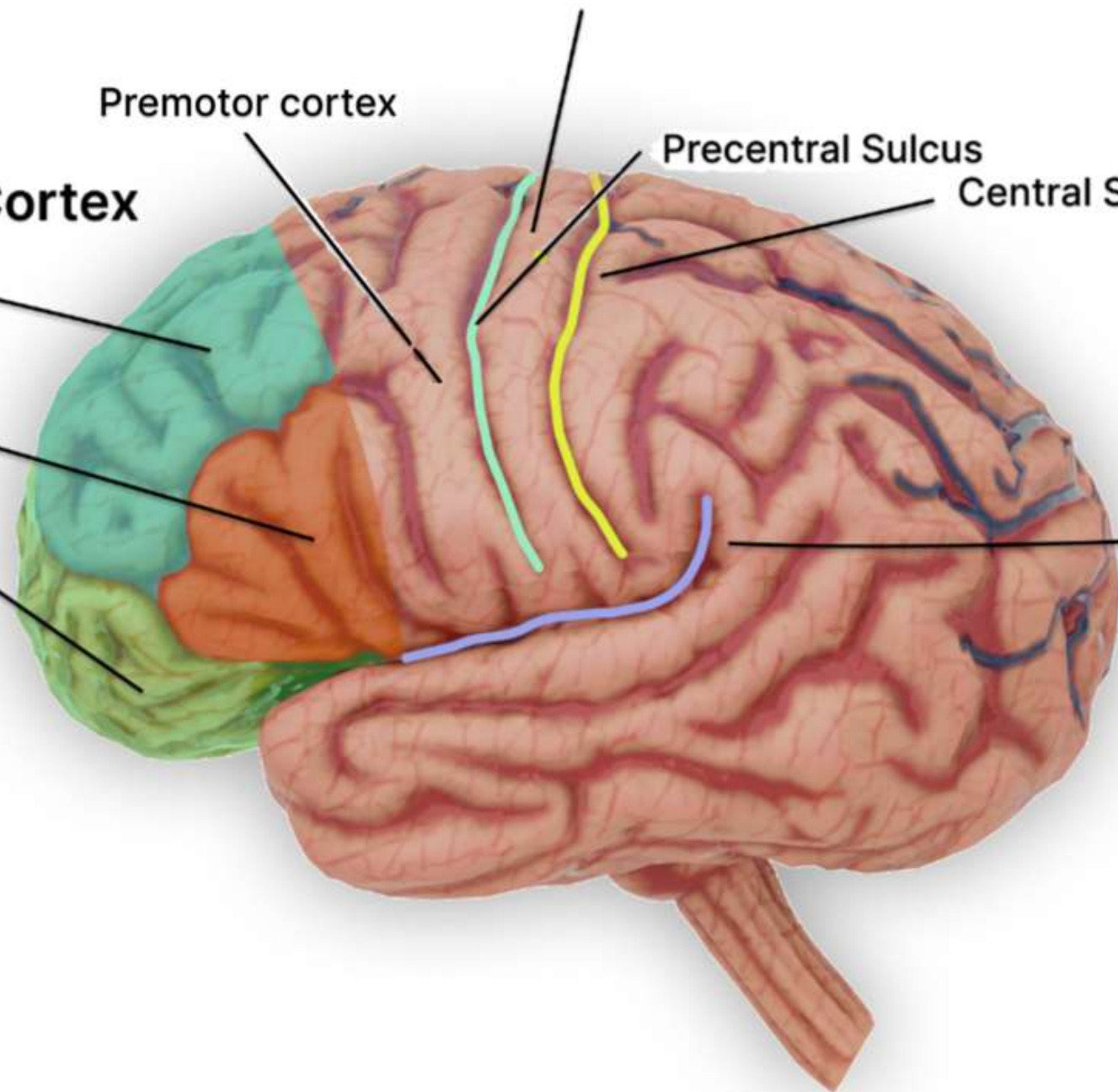
Premotor cortex

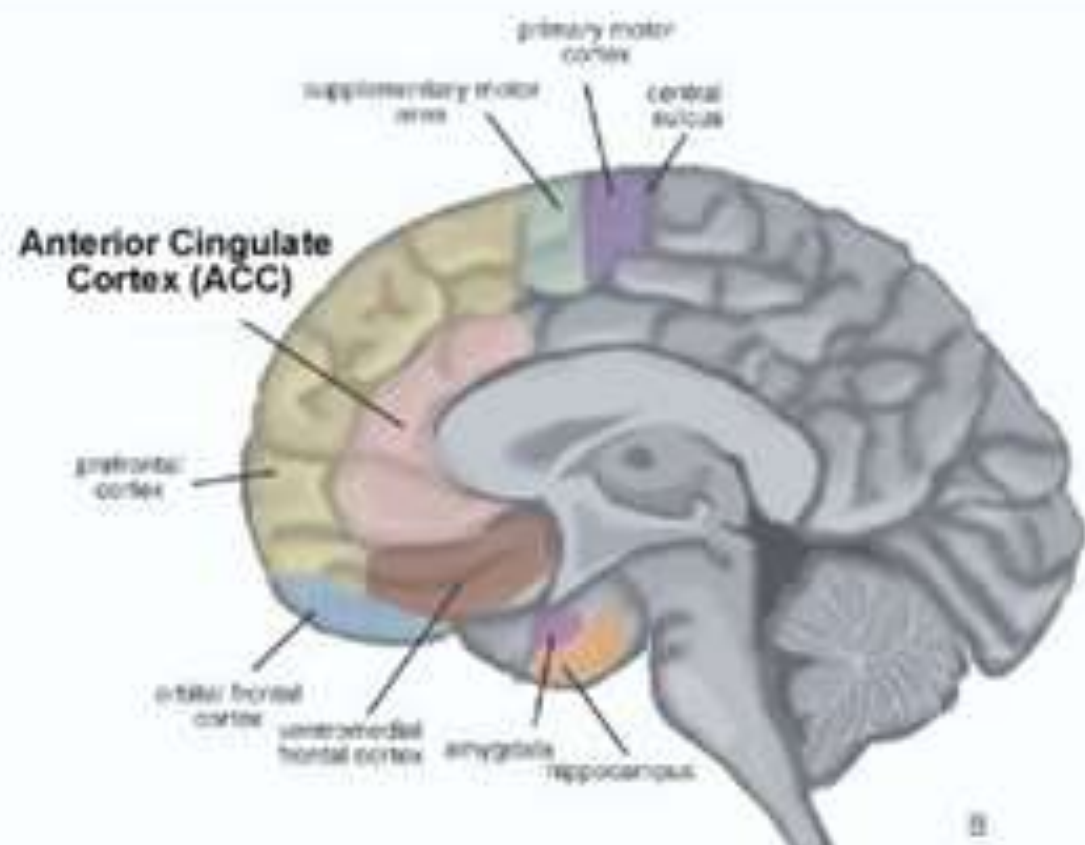
Motor cortex

Precentral Sulcus

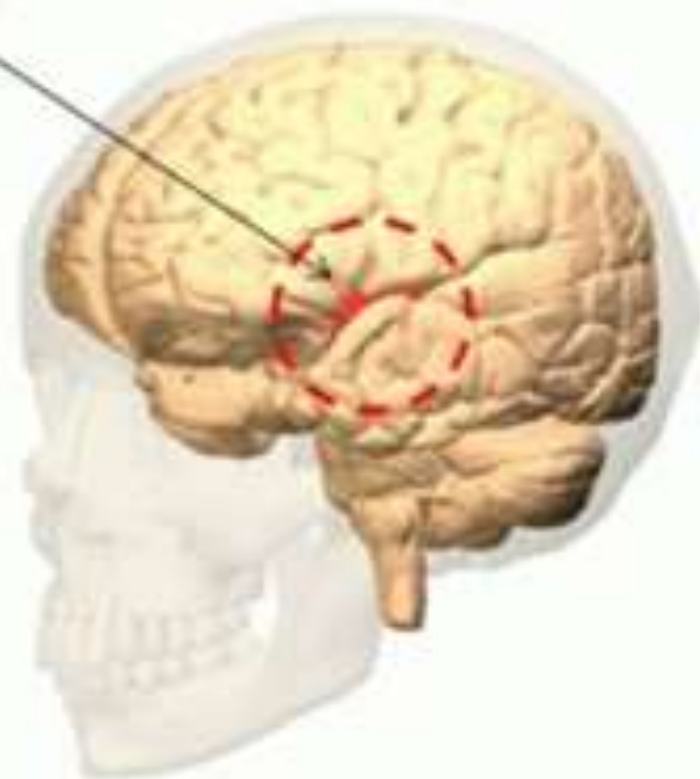
Central Sulcus

Lateral Sulcus

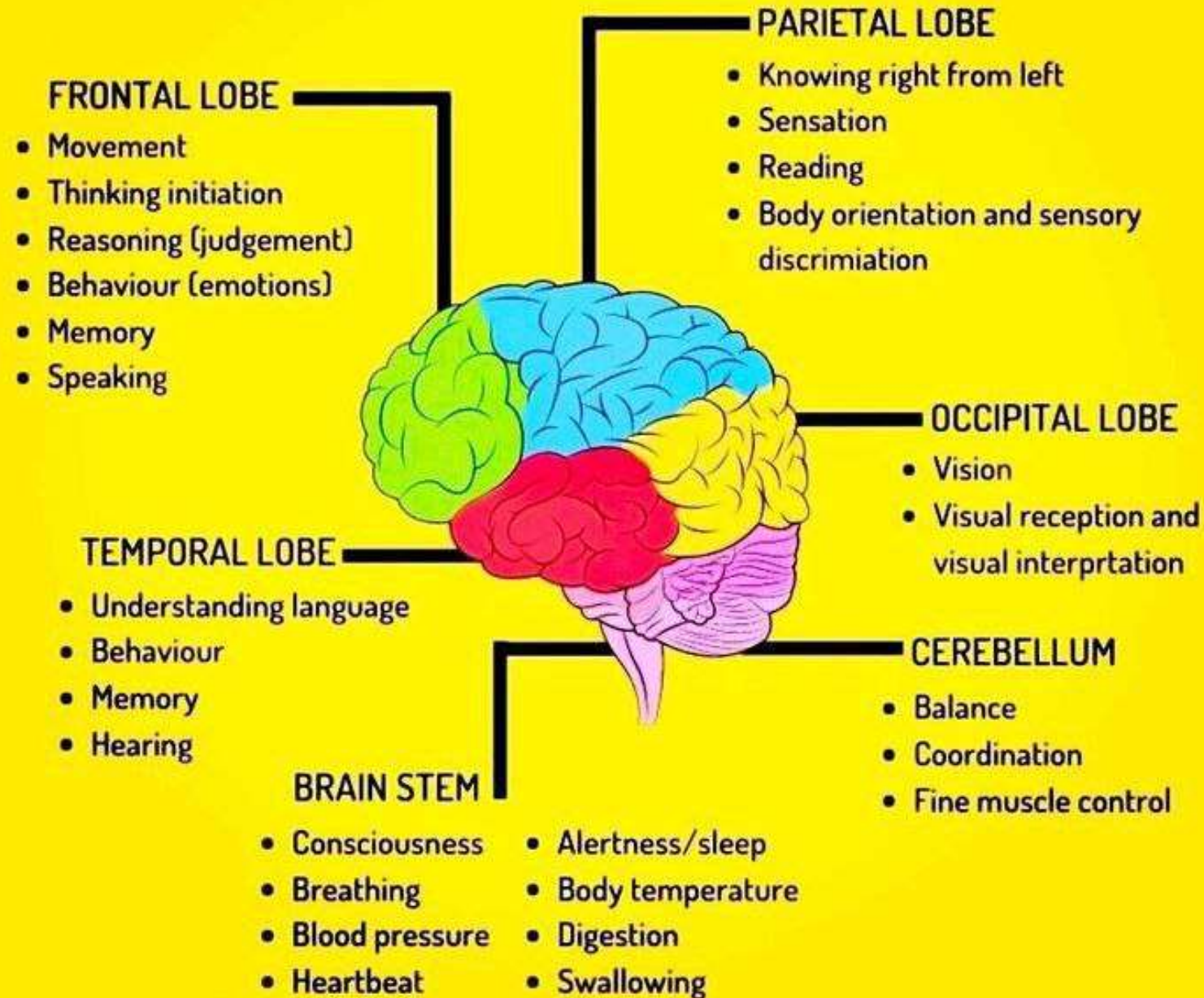




INSULA



FUNCTIONS OF THE BRAIN



5. Implications of the Findings

- Relevant for professions requiring **long mental focus** (e.g., air traffic controllers, coders, researchers).
 - Could inform **workplace productivity, mental health, and task allocation strategies**.
 - Explains common real-life behavior: choosing Netflix over exercise after a mentally draining day.
 - Cognitive fatigue is **not just laziness**, but a neurological response to sustained mental demand.
-

Slipping grades, social withdrawal, aggression: How screens affect children

SOPHIYA MATHEW

NEW DELHI, JULY 20

■ A 12-YEAR-OLD boy, once active in sports and school, began retreating into himself — skipping meals, ignoring friends — while spending nights glued to a glowing screen.

■ A nine-year-old, overwhelmed when his phone was taken away, picked up a kitchen knife and slashed his arm.

■ A 19-year-old boy, who spent over 12 hours a day gaming, developed a spinal deformity so severe that he lost control of his bladder and had to undergo complex corrective surgery.

These real-life cases, shared by child psychologists and school heads, reflect just a fraction of a larger problem. In hospital wards and counselling rooms across Delhi, more children are presenting with issues that trace back to the same source — the screen.

The *Indian Express* speaks to school heads, experts and children themselves on the gravity of the crisis and how it can be managed.

'Look for the signs'

According to Anjali Kharbanda, Principal, N K Bargodia Public School in Dwarka, it usually starts with slipping grades. "The children then withdraw from social spaces, there is a loss of interest in participating in school activities, and their behaviour changes."

However, the drop in grades, she explains, is rarely the problem — more often, it's a symptom.

Take the case of the 12-year-old whose struggles began long before his report card reflected them. He had stopped waking

up for school, his appetite reduced, and he withdrew from friends and sports. Nights were spent in front of a screen.

When his parents brought him to Sir Ganga Ram Hospital, the diagnosis was clear: "emerging depressive features strongly linked to excessive screen use". Treatment involved parental training, cognitive behavioural therapy "to address negative thought patterns", a fixed digital curfew, and routines to restore sleep.

"Gradually, with better sleep and reduced screen exposure, his mood and energy levels improved, as did his school engagement," says Dr Bhavna Barmi, senior child psychologist at Fortis Escort Heart Institute.

At the same clinic, parents of a 15-year-old girl, who was a class topper once, rushed to seek help. Their daughter was into "late-night video streaming and chatting" — until 3 or 4 am — but it soon disrupted her sleep cycle entirely. She became irritable, disengaged, and began experiencing auditory hallucinations.

Doctors diagnosed her with chronic insomnia induced by prolonged screen exposure, which had altered melatonin production and impacted her cognitive and emotional regulation. She was prescribed behavioural sleep therapy, short-term pharmacological support, and sessions to address academic anxiety and social isolation.

Other real-life instances highlight the severity of the problem and what could happen if it's left unchecked — like in the case of this nine-year-old boy.

He regularly spent three to four hours unsupervised on a

phone, flew into uncontrollable rage when it was taken away. In a moment of distress, he found a kitchen knife and slashed his arm.

His actions, doctors say, were classified as a form of behavioural addiction, mirroring withdrawal-like symptoms — "emotional dysregulation, impaired impulse control, and agitation".

He was rushed to the emergency room at Dr Ram Manohar Lohia Hospital and later referred to the child psychiatry department. Finally, gradual device weaning, therapy to build frustration tolerance, and counselling for his parents helped address the issue.

In a similar case, a Class 4 child in Dwarka began throwing violent tantrums and using abusive language after being left unsupervised — his mother was often preoccupied with filming YouTube reels. The child, doctors say, had to be hospitalised and shifted to a new school.

The most alarming case from this year involved a 19-year-old who had been addicted to mobile gaming for more than a year. He spent over 12 hours a day on his phone, playing games like *Battlefields* and *Mobile India*. He became sedentary, socially withdrawn, and over time developed kypho-scoliosis, a spinal deformity, worsened by undiagnosed spinal tuberculosis.

By the time he was brought to the Indian Spinal Injuries Centre, he had lost bladder control and could barely walk. Doctors performed a complex spinal surgery involving navigation, decompression, and implant stabilisation.

"They were able to reverse his bladder dysfunction and re-



Getty images

store partial mobility within days," says Dr Barmi.

Research from around the world also points to similar issues with screen addiction among children.

According to an international study published in June, in the medical journal *JAMA*, researchers analysed screen use among 4,285 children from 10 years of age in the United States; they screened them for compulsive use and distress when denied devices.

The study found that by the age of 14, those with high addictive behaviour were two or three times more likely to have suicidal thoughts. It also found a direct link between "high and increasing addictive screen use trajectories" with "suicidal behaviours and ideation and worse mental health".

Need for a policy

Schools, meanwhile, are grappling with how to handle screens in classrooms.

"Banning phones makes no sense at all," says Dr Ameeta Mulla Wattal, DLF Foundation

schools chairperson and former principal of Springdales School. "Many use it as a teaching and learning device. Before Covid, there were very stringent measures in place in schools. Phones were confiscated."

But she acknowledges the dangers. She recalls an incident from Springdales a few years ago, of a teenage girl being bullied.

A mock parliament session was held at the school for her. "She stood up before her classmates and shared her story: she had been digitally bullied, her images morphed and circulated without consent."

"She had the strength to open up," Wattal says. "That kind of honesty doesn't happen overnight — it takes time, and trust. We have to build those ecosystems inside schools."

In February, the Delhi High Court, responding to a PIL, issued a set of directives for managing smartphone use in schools. It stopped short of imposing a ban, instead urging institutions to strike a balance between regulation and responsible access.

Students, the court said,

should not be barred from carrying smartphones, but schools must regulate their use — encouraging safe deposit systems at entry and prohibiting devices from disrupting classrooms, school discipline, or being used in common areas and vehicles.

"Schools must educate students on responsible online behaviour, digital manners, and the ethical use of smartphones. Students must be counselled that high levels of screen-time and social media engagement can lead to anxiety, diminished attention spans and cyber-bullying," the court stated.

While smartphones could be permitted for safety and coordination, their use for entertainment or recreational purposes should be explicitly disallowed, the order further read.

Following this, the Directorate of Education in April issued a circular to all government school heads, directing them to begin drafting institution-level smartphone usage policies. The circular acknowledged that no formal provision for managing smartphones existed in government schools.

A vice-principal of a Delhi government school, who is drafting the policy in her school, says her staff agreed to allow only basic keypad phones — enough for emergencies. "There have been several cases of misuse," the vice-principal adds.

Children, too, have acknowledged the seriousness of the problem.

In 2022, twins Samaya and Samhara Chauhan, who study in Class XII at Pusp Vihar's Armitry International School, launched an anti-bullying initiative after see-

ing how mental health and cyber-bullying are major concerns in their peer groups. "We realised the intensity of the issue and formed a team of four for an anti-bullying project," says Samaya.

In 2023, their initiative evolved into PLAN — a campaign focused on girl child education, AI in classrooms, and online safety. "From the data we collected, we found that maximum cyberbullying happens in international servers on Discord (a social platform)," they say. "Strangers befriend kids and share pictures, memes..."

According to the twins, dedicated lockers for phones, structured time windows for digital use, and clear policies that promote equitable tech access without deepening the digital divide can help solve the crisis.

Expert speak

Dr Nitin Verma, Director (Paediatrics) at Madhukar Rainbow Children's Hospital in South Delhi, says he has seen a worrying rise in suicide attempt cases in recent years among school-going children — many of them directly linked to screen addiction issues.

"We have seen at least three or four such cases in recent months," he says. "The Covid pandemic made even younger children dependent on screens. Since classrooms have switched to a hybrid model, there are no concrete guidelines on what needs to be done."

What troubles him most is the lack of adult supervision. "In almost 60% of cases, the child is unsupervised. Most families are nuclear... grandparents are involved in very few cases," he

adds.

He has also observed an alarming spike in obesity and emotional distress among children aged 8 to 16, both of which he links to prolonged screen exposure. "Screen usage is rampant. And when children as young as two years are exposed to screens — whether a television, tablet, or laptop — it significantly raises the risk of Autism Spectrum Disorder," he adds.

The entry of Artificial Intelligence (AI) hasn't helped matters. "AI has impacted students, leading to more smartphone usage," says Pavan Duggal, a leading cyber law expert.

He cites cases of teens caught in hallucinated interactions and blurred digital boundaries — like a boy who recently asked ChatGPT how to manage his relationships.

Online trends are also deepening the problem. "Young teens had been mindlessly sharing their photos for the Ghibli trend," he says, referring to AI mimicking Japan's famous Studio Ghibli style of animation.

He also highlights a sharp rise in cyberbullying, trolling, stalking, and online harassment — though most cases, he says, go unreported. The silence is often rooted in stigma and fear.

"Most people who seek help don't want to officially report the incident. Some youngsters even run anonymous confession pages on social media, which can create serious issues," Duggal says.

Principal Kharbanda sums up the issue: "Children pick up more than we realise," she says.

"It's not just what they watch — it's what they start becoming... at the cost of our neglect."

1. Core Issue

- Children are facing **emotional, behavioral, and academic decline** due to excessive screen time, particularly through mobile phones and gaming.
- Manifestations include:
 - **Slipping grades,**
 - **Aggression and self-harm,**
 - **Social withdrawal,**
 - **Poor sleep and appetite,**
 - **Cognitive and emotional dysregulation.**

2. Real-Life Cases Highlighted

- **12-year-old boy** became aggressive and self-harmed when phone was taken away.
 - **19-year-old** with 12+ hours daily gaming developed **bladder dysfunction** and was hospitalized.
 - **15-year-old girl** began missing classes and developed **auditory hallucinations**.
 - Several children required **psychiatric help**, therapy, and medications.
-

3. Clinical and Psychological Insight

- **Doctors' observations:**
 - Screen addiction can result in:
 - **Depressive features,**
 - **Cognitive distortions,**
 - **Mood and energy issues,**
 - **Impaired social behavior.**
- **Excessive screen time** linked to:
 - Attention problems,
 - Academic decline,
 - **Addiction-like withdrawal** symptoms,
 - Increased **impulsivity** and **emotional dysregulation.**

4. Research-Based Evidence

- **Journal JAMA Pediatrics (US):**
 - Studied 2.8k children aged 8–12.
 - Found direct correlation between **screen use** and:
 - Distress,
 - Depression,
 - Self-harm,
 - **Suicidal ideation.**
- **Digital well-being survey:**
 - High levels of screen time/social media linked to:
 - Anxiety,
 - Diminished attention,
 - Cyberbullying.

5. Institutional and Government Responses

- **Delhi High Court (Feb 2024):**
 - Urged formal anti-smartphone rules in schools.
 - Called for ethical use and digital manners to be taught.
- **PLAN initiative:**
 - Combats **cyberbullying** and raises awareness.
- **AI Use Concern:**
 - AI like ChatGPT used for harmful interactions.
 - Risks of hallucinations and **blurring digital reality**.

6. Need for Policy and Governance

- Need to:
 - Create **boundaries on screen time**.
 - Distinguish **educational vs. recreational screen use**.
 - Frame **comprehensive digital well-being policy** in schools.
-



1. Awareness First

- Track your screen time using apps like:
 - *Digital Wellbeing* (Android)
 - *Screen Time* (iOS)
 - *Forest*, *RescueTime*, *Moment*
 - Identify most-used apps and time-wasting patterns.
-



2. Set Limits & Goals

- Use in-built tools to set daily screen limits.
- Fix no-screen zones (like bedrooms or dining tables).
- Define "screen-free" hours (e.g., 8–10 AM or 8–9 PM).

3. Use the Pomodoro Technique

- 25 min focused work → 5 min break (no screen during break).
 - After 4 rounds, take a longer 15–30 min break (preferably offline).
-

4. Replace Screen Habits

Screen Habit	Replace with
Scrolling Instagram	Reading a book or listening to music
YouTube binge	Walking or gardening
Video games	Sports, chess, or board games

6. Use Tech to Fight Tech

- Turn off non-essential **notifications**.
 - Set **grayscale mode** to make your phone less appealing.
 - Uninstall unnecessary or addictive apps.
 - Use apps like *AppBlock*, *FocusMe*, *Freedom*.
-

7. Improve Sleep Hygiene

- Avoid screens 1 hour before bed.
 - Read a physical book or listen to soft music to wind down.
-



Little effort: The beauty of the compound effect is that you need not work hard for it. www.mindvalley.com

Money making money even while one is asleep

As Albert Einstein said, "compound interest is the eighth wonder of the world." If one is patient enough, he can witness how his money makes money for him, even while he is sleeping.

DOUBLING MONEY

Vaishali B. Yeshkar

If a child pester his father for money, his usual return would be, "Do you think I'm out there shaking a money tree?"

Yes, in a way, he is right, you can't just pluck money off a tree. But even a small penny is like a seemingly small seed, which when nurtured and nourished carefully, can be the beginning of a forest.

Power of compounding in the world of finance, there is one such seed, which not only grows into a tree but could become an entire forest – the power of compounding. The magic of compounding is that it starts small but grows exponentially over time.

More than two centuries ago, Benjamin Franklin, the first Postmaster-General of the United States and author of the book *Poor Richard's Almanack*, echoed this concept saying, "Money makes money. And the money that money makes, makes money."

Further, highlighting the potential of exponential wealth creation in the long run, famous physicist Albert Einstein said, "compound interest is the eighth wonder of the world."

Though the phrase "the compound effect" existed for aeons, especially in mathematics, it became quite popular in the realm of finance, productivity

in the world of finance, there is one seed which could become an entire forest – the power of compounding; the magic of compounding is that it starts small but grows exponentially over time.

and personal development after a bestselling book by U.S. author Darren Hardy.

Compound effect

The compound effect is like a snowballing effect wherein a small, consistent action or an investment accumulates over a period, leading to an exponential growth. In personal finance, it refers to the process wherein your initial invested money earns interest, and the interest earned earns interest, which subsequently generates interest, and the chain goes on and on.

This way, you make a gigantic leap from your original invested amount. Not just this, the beauty of the compound effect is that you need not work hard for it, as even if you are sleeping, your invested money will silently work and keep on generating money for you.

You need to give time for it and just be patient. Consistency is the key.

Let's imagine this scenario. God wishes to give a boon and places two choices before you. First – He will clear all your debts instantly, say ₹5,00,000. Second – He will give

you ₹1 on the first day with a promise that it will double every day for one month. So, which one do you choose?

Almost all 10 people would only choose the first option for two reasons. The first being instant gratification and the second is the lack of awareness of compounding effects.

In contrast, mathematicians or financial experts will only choose the second option of taking the ₹1 that doubles every day for 30 days. They do not mind waiting for 30 days, let's find out why.

Money doubles

On day one, God gives you ₹1, it doubles to ₹2 on the second day, to ₹4 on the third day. Likewise, it doubles to ₹512 on the 10th day. Your patience is being tested here.

In a similar doubling strategy, your money becomes ₹16,384 on the 15th day. Time is the secret; time begets money.

On day 30, it would be ₹5,24,288, which is way less from the first choice. But wait, we have 30 more days. On day 24, it would have doubled to ₹83,88,608 and on the last

day, it would be ₹53,68,70,912.

In just 30 days, ₹1 transforms into a whopping sum of more than ₹53 crore. You call it mind-blowing but that's the power of compounding.

SIP investment

Now, let's take a real-life example. Priya invests ₹1,000 every month in a Systematic Investment Plan (SIP) that gives her 12% Compound Annual Growth Rate (CAGR).

After five years, her investment would have grown to almost ₹82,000. After 10 years, it becomes ₹2,52,000 (approximately) and after 20 years ₹9,99,000.

But wait, the magic has not happened yet. In 30 years, it becomes ₹35,29,000 and in 40 years, a whopping sum of more than a ₹1 crore.

So, just a ₹1,000 in monthly SIP transforms into more than a ₹1 crore in 40 years.

That's the reason all financial experts advise us to start saving right from the first salary, so that, by the time you retire, you would have saved enough, and your money would have worked for you even when you were sleeping.

If you need more money, just step up your SIP amount of ₹1,000 per month by just 10% every year, witness the magic and enjoy your retirement life comfortably and worry-free. Start saving early.

(The writer is an NISM & CRISIL-certified Wealth Manager)

1. Core Idea

- The article emphasizes the **power of compounding**, termed as the “**eighth wonder of the world**” by Albert Einstein.
 - If one starts investing early and remains consistent, **money starts earning money**, even when the person is asleep.
-

2. Concept of Compounding

- **Compounding**: Like a snowball effect where earnings **generate more earnings** over time.
 - Example: Interest earned on a principal amount is reinvested, and interest is earned on that as well.
 - It grows **exponentially**, not linearly.
-

3. Illustrative Example: Doubling Strategy

- If ₹1 is doubled every day for 30 days, final amount = ₹53.68 crore.
 - Day 1: ₹1
 - Day 10: ₹512
 - Day 20: ₹5.24 lakh
 - Day 30: ₹53.68 crore
 - Teaches the importance of **patience and consistency** in investing.
-

4. Two Types of Investors

- One who chooses ₹1 doubling daily.
- Another who chooses ₹1 lakh instantly.
- Most people would choose ₹1 lakh upfront due to **lack of awareness** and **immediate gratification bias**.

5. SIP Investment (Real-Life Case Study)

- A young woman starts ₹1,000 SIP per month.
- Assuming **12% CAGR**, after:
 - **10 years:** ₹2.1 lakh
 - **20 years:** ₹9.8 lakh
 - **30 years:** ₹29 lakh (approx.)
- Shows **long-term power** of regular and disciplined investing.

SIP Growth Projection (₹10,000/month for 30 years)

CAGR (Annual Return)	Total Investment (₹)	Estimated Maturity Value (₹)
8%	₹36,00,000	₹1,41,00,000+
10%	₹36,00,000	₹2,27,00,000+
12%	₹36,00,000	₹3,50,00,000+
15%	₹36,00,000	₹6,29,00,000+

Word of the day

Forswear:

agree to give up or do without

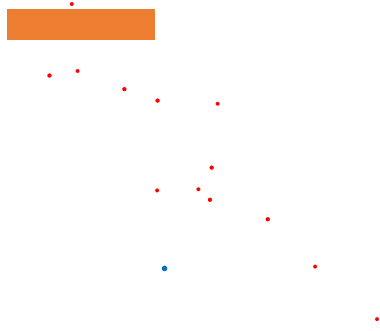
Synonyms: avoid, withdraw, deny

Usage: *He decided to forswear junk food to stay healthy*

Pronunciation: newsth.live/forswearpro


International Phonetic

Alphabet: /fɔːrswɛr/

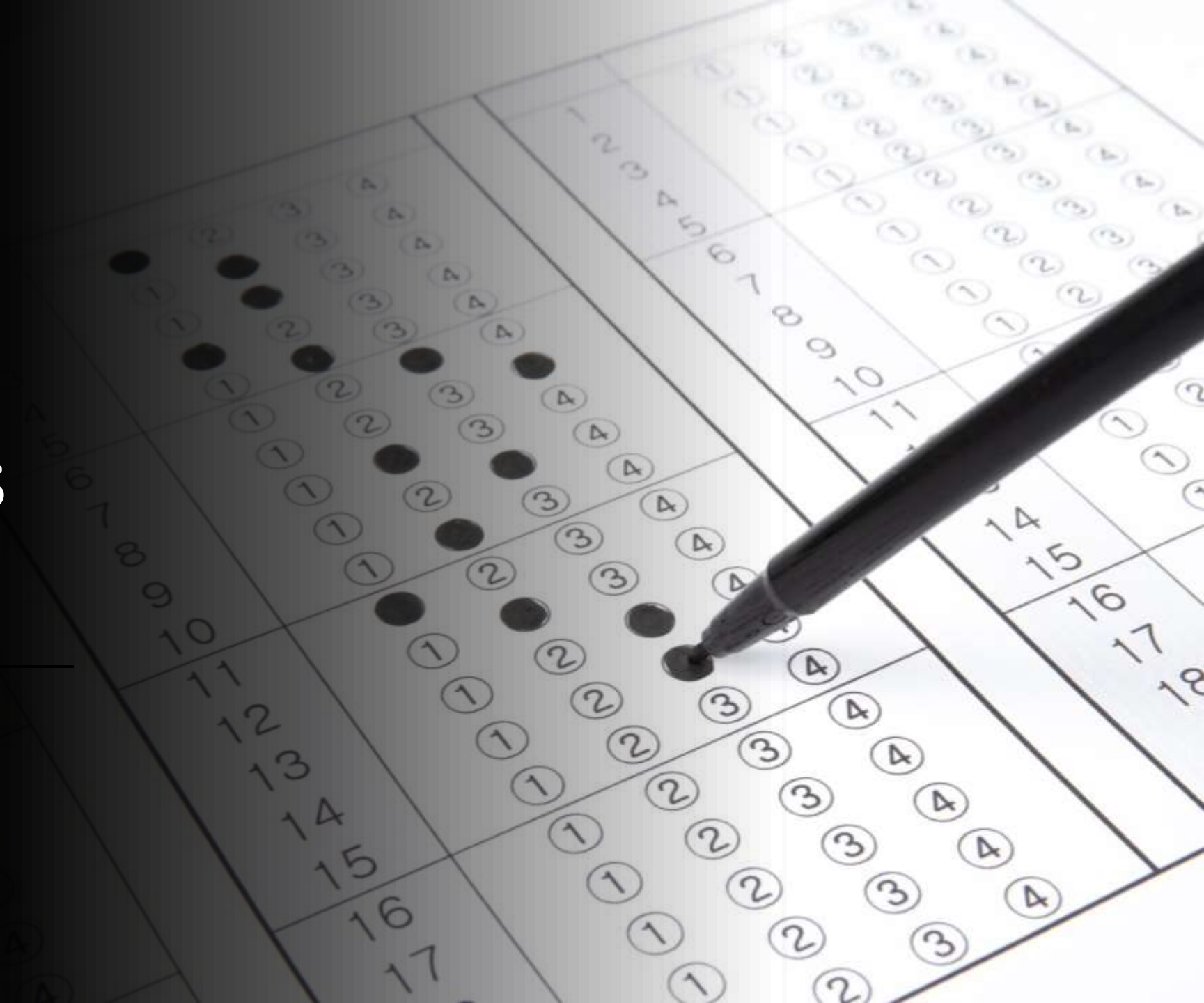


Thank you
guys.





How to learn Current affairs For RAS Exam



Step	Activity	Details/Examples	Frequency
1	Read a Standard Newspaper	The Hindu, Indian Express (National), Rajasthan Patrika (State)	Daily
2	Use Monthly Magazines	Vision IAS, Yojana, Kurukshetra, Rajasthan Current Ghatna Chakra	Monthly
3	Watch Reliable Current Affairs Videos	YouTube channels like Class24 etc	Daily
4	Refer Rajasthan-Specific Content	Government schemes, budget, census, policies, and reports related to Rajasthan	Weekly
5	Make Notes	Make short, concise handwritten or digital notes under headings (e.g., Polity, Eco)	Ongoing
6	Use MCQs for Practice	Solve current affairs-based MCQs from monthly magazines or online portals	Weekly
7	Revise in Intervals	Weekly + Monthly + Prelims-oriented revision via mock tests	Weekly/Monthly
8	Join Test Series	Enroll in RAS-specific current affairs test series (Prelims + Mains)	Monthly
9	Use Government Sources	PIB, Rajasthan Government Portal, Press Releases, Raj. Yearbook	As needed
10	Analyze Previous Year Papers	Identify patterns, recurring themes (e.g., government schemes, awards, bills)	Monthly

Exam Stage	Topics Covered	RAS Trend (Last 5 Years)	Resources & Tips
Prelims	National + International News, Rajasthan State-specific events, Government Schemes, Economy, Polity, Science & Tech	~18–23% Qs from Current Affairs with “Easy–Moderate” difficulty	Daily CA from sources like <i>The Hindu</i> , Plb, monthly compilations
	Rajasthan initiatives (e.g. Rajasthan GK/Qs)	High weightage (20–30 Qs) from state-specific events	Follow <i>Rajasthan gazette</i> , rasonly
Mains GS-III	National/Global issues, Economy policies, IR, Public Governance	Significant emphasis—questions drawn from recent schemes & global events.	Monthly CA synopses; detailed answer practice

Key Topics (Last 5 Years)

1. **COVID-era initiatives** – Health schemes, economic relaunch packages
2. **Agriculture & MSP reforms** – Farm bills, procurement policies
3. **Rajasthan projects** – Polavaram, water works, solar parks
4. **Geopolitics** – Afghanistan exit, Ukraine war, Indo-Pacific strategies
5. **Economic reforms** – GST updates, RBI measures, monetary policy
6. **Environment & Climate** – Yamuna pollution, clean energy targets 
7. **Cyber/Tech issues** – AI regulation, data privacy
8. **Governance & ethics** – Court rulings, constitutional controversies
9. **Science & Space** – Missions like Chandrayaan/Apollo updates
10. **State Elections & Issues** – Rajasthan-specific elections, local scandals

RAS Prelims: Last Year's Sample MCQs

1. Which Indian State launched the “Chief Minister Solar Rooftop Scheme” in 2024?
 - A) Gujarat
 - B) Rajasthan
 - C) Haryana
 - D) Maharashtra



- **The Reserve Bank of India's Monetary Policy Committee (MPC) decided to: (September 2024)**

- A) Reduce repo rate
- B) Keep the repo rate unchanged
- C) Increase the repo rate
- D) Switch to a flexible inflation target



- **“Project Mausam” is an Indian Government initiative aimed at:**

- A) Himalayan conservation
- B) Silk Road revival
- C) Maritime heritage promotion
- D) Desert ecology restoration

Which country hosted the 2024 BRICS Summit?

- A) Russia
 - B) India
 - C) China
 - D) South Africa
-



- **The "Fit India Freedom Run" campaign was launched to commemorate:**

- A) Gandhi's birth anniversary
- B) 75 years of Indian independence
- C) Women's Day
- D) National Sports Day



• **Which novel coronavirus variant was declared a WHO “Variant of Concern” in 2024?**

A) XBB.1.16

B) BA.2.86

C) EG.5 (Eris)

D) BF.7

• **Which Indian airport was certified as the world's first “Single Use Plastic-free” airport in 2024?**

- A) Indira Gandhi International (Delhi)
- B) Chhatrapati Shivaji Maharaj (Mumbai)
- C) Kempegowda International (Bengaluru)
- D) Rajiv Gandhi International (Hyderabad)



- **In 2024, India signed the "Dubai-Mumbai Air Services Agreement" to:**

- A) Open new flight routes
- B) Launch a cargo corridor
- C) Enable fifth freedom rights to carriers
- D) Waive visa requirements

Component	What to Do	Why It Matters
1. Understand the Question	- Identify keywords (e.g., <i>Discuss, Analyze, Critically evaluate</i>)- Break it into parts	- Avoid deviating from the demand of the question
2. Introduction	- Define key terms- Mention context or background (1–2 lines)	- Sets clarity and relevance for the answer
3. Body	- Use structured points (bullet or paragraph)- Add subheadings- Support with facts, examples, and data- Use diagrams, flowcharts, maps where needed	- Main content area; scoring depends on balance, depth & presentation
4. Analysis	- Add cause-effect, pros-cons, implications, stakeholders, etc.- Use multidimensional perspectives (Social, Political, Economic, Environmental)	- Shows depth of understanding & critical thinking
5. Value Addition	- Include:• Govt. schemes• Committees• SC Judgments• International examples	- Differentiates your answer with enrichment
6. Conclusion	- Summarize briefly- Suggest a balanced way forward or solution	- Leaves a positive and forward-looking impression
7. Language & Tone	- Use simple, precise language- Maintain objectivity- Avoid jargon unless necessary	- Improves readability and examiner's impression
8. Presentation	- Underline keywords- Use spacing, neat handwriting- Maintain uniform structure throughout	- Good presentation can increase marks even with similar content
9. Time Management	- Spend ~7 minutes for 10-marker and ~11 minutes for 15-marker questions	- Helps complete the paper in time
10. Practice & Feedback	- Write 2–3 answers daily- Get them evaluated- Learn from topper copies	- Practice is the only way to improve consistently

Q. Discuss the role of cooperative federalism in India's COVID-19 management.

Section	Content
Introduction	Define cooperative federalism; brief on pandemic as a policy challenge
Body	<ul style="list-style-type: none">• Coordination between Centre and States• GST compensation issue• Health as State subject• Use of Disaster Mgmt Act• Examples from Kerala, Maharashtra
Analysis	Advantages & limitations Centre-State tensions Future implications
Conclusion	Need to strengthen federal spirit for better crisis handling

Section	Content
Introduction	Transparency and accountability are essential pillars of good governance. They ensure responsible administration, citizen trust, and effective public service delivery.
Main Body	<p>Importance of Transparency:• Increases public trust in government institutions• Enables informed citizen participation• Reduces corruption</p> <p>Importance of Accountability:• Holds officials answerable for their actions• Promotes ethical conduct• Enhances efficiency in service delivery</p>
Examples	<p>• RTI Act, 2005: Empowered citizens to access government records• Lokayukta in Rajasthan: Investigates corruption in state government• Digital Rajasthan: e-Mitra for transparent service delivery</p>
Way Forward	<p>• Strengthen institutional mechanisms like Lokpal, CAG• Use of technology for real-time audits• Training for ethical governance among officials</p>
Conclusion	Transparency and accountability are not optional but necessary to ensure democracy, development, and dignity in Rajasthan’s governance framework.



3 things to follow

- 1) Daily CA
- 2) Monthly Reasonly magazine
- 3) Writing practice if required

