

Stepping stone: On nuclear policy, the SHANTI Bill

India's nuclear **governance** needs regulatory independence

Nuclear power contributed only around 3% of the electricity generated in India in 2024-25. The government has set a target to install 100 GW of nuclear capacity by 2047, including from at least five **indigenous** small modular reactors by 2033. **In this picture**, the SHANTI Bill **proposes** to change who can legally build and operate civil nuclear **facilities**. By allowing the Centre to **permit** nuclear energy activities through licences to government entities, **joint ventures** and "any other company" (**subject to conditions**), SHANTI indicates that the **intended** new class of operators is domestic private capital rather than foreign plant owners. India being able to **meet** its 100 GW target will **indeed** require large **capital mobilisation**, and allowing licensed non-government entities expands the **roster** of entities that can share the construction risk. SHANTI also **seeks** to keep the most sensitive fuel cycles in state control while holding **room** for private participation in plant delivery and parts of the supply chain, reducing scope of commercial entry to those segments most relevant to **scale** power generation and keeping functions sensitive to nuclear **proliferation** with the state. The Bill could also **mitigate** the legal **ambiguity** new **entrants** face by putting safety, **enforcement** and dispute resolution and the **terms** of participation in the same **statute**. This could also reduce transaction costs for developers and **shrink** site approval and **commissioning timelines**.

However, the Bill's **liability** and governance provisions **warrant** caution. **The maximum operator liability** for a nuclear incident **is** ₹3,000 crore. The Centre is liable for nuclear damage beyond the operator's cap and can also assume full liability for a non-government installation if in the public interest. These choices make investment risk easier to price but also ask whether the capped operator amount is adequate for victims and for environmental **remediation**. Second, SHANTI requires operators to maintain insurance or other financial security, but **exempts** the Centre's nuclear installations, **rendering** clear public accounting very important. It also allows operator **recourse** only when expressly provided in a written contract or when an incident is due to **an act or an omission** with the intent to cause nuclear damage. This makes supplier **accountability** depend largely on what the operator secures by contract, which means how much recourse the operator has against suppliers can **vary** across projects. Finally, India's nuclear governance needs to **address** its regulator's independence. While SHANTI creates a **statutory** framework, it also **vests** significant influence in appointments with the Centre and the Atomic Energy Commission. This is still not **conducive to** increasing public trust and may also **deter** investor confidence.

[Practice Exercise]

- Red/blue coloring of words in the sentence indicates subject verb relationship; where 'red' denotes 'subject' and 'blue' denotes 'verb'.

Vocabulary

1. **Stepping stone** (phrase) – a stage or means of progress; a preliminary move.
प्रगति का साधन
2. **Governance** (noun) – regulation, oversight, administration, management, control
शासन
3. **Indigenous** (adjective) – native, domestic, homegrown, local, aboriginal स्वदेशी
4. **In this picture** (phrase) – in this scenario/context, given this situation. इस संदर्भ में
5. **Propose** (verb) – suggest, recommend, put forward, advance, table प्रस्तावित करना
6. **Facilities** (noun) – plants, installations, complexes, units, sites संयंत्र
7. **Permit** (verb) – allow, authorize, license, enable, grant अनुमति देना
8. **Joint venture** (noun) – partnership, collaboration, alliance, cooperative enterprise संयुक्त उद्यम
9. **Subject** (to) (adjective) – conditional, dependent, liable, exposed, contingent के अधीन
10. **Intended** (adjective) – planned, proposed, designed, meant, deliberate इरादा किया हुआ
11. **Meet** (verb) – achieve, fulfill, satisfy, reach, accomplish पूरा करना
12. **Indeed** (adverb) – in fact, actually, truly, certainly, undoubtedly वास्तव में
13. **Capital mobilisation** (noun) – raising funds, resource gathering, investment pooling पूंजी जुटाना
14. **Roster** (noun) – list, register, panel, lineup, roll सूची
15. **Seek** (verb) – aim, try, attempt, endeavor, strive कोशिश करना
16. **Room** (noun) – scope, opportunity, capacity, space, leeway गुंजाइश
17. **Scale** (verb) – increase, expand, grow, enlarge, escalate बढ़े पैमाने पर करना
18. **Proliferation** (noun) – spread, multiplication, expansion, increase, growth प्रसार
19. **Mitigate** (verb) – reduce, lessen, alleviate, ease, diminish कम करना
20. **Ambiguity** (noun) – uncertainty, vagueness, doubt, equivocation, obscurity अस्पष्टता
21. **Entrant** (noun) – newcomer, participant, joiner, beginner, initiate नया प्रवेशक

22. **Enforcement** (noun) – implementation, execution, application, imposition, administration प्रवर्तन
23. **Terms** (noun) – conditions, provisions, stipulations, clauses, specifications शर्तें
24. **Statute** (noun) – law, act, legislation, regulation, rule क़ानून
25. **Shrink** (verb) – reduce, shorten, decrease, cut, compress सिकोड़ना
26. **Commissioning timelines** (noun) – schedules for making a project operational. कमीशनिंग समयसीमा
27. **Liability** (noun) – responsibility, obligation, accountability, duty, burden दायित्व
28. **Warrant** (verb) – justify, deserve, merit, call for, require आवश्यक होना
29. **Remediation** (noun) – cleanup, restoration, correction, repair, rectification उपचार/सुधार
30. **Exempt** (verb) – excuse, free, release, spare, exclude छूट देना
31. **Render** (Verb) – make, cause to be, leave, turn into, result in बना देना
32. **Recourse** (noun) – option, resort, remedy, alternative, redress सहारा
33. **An act or omission** (noun) – action or failure to act, deed or negligence. कार्य या चूक
34. **Accountability** (noun) – responsibility, answerability, liability, obligation, duty जवाबदेही
35. **Vary** (verb) – differ, fluctuate, change, diverge, range अलग-अलग होना
36. **Address** (verb) – tackle, deal with, handle, confront, attend to निपटना
37. **Statutory** (adjective) – legal, lawful, regulatory, mandated, prescribed वैधानिक
38. **Vest** (verb) – confer, grant, entrust, bestow, endow प्रदान करना
39. **Conducive** (to) (adjective) – favorable, helpful, beneficial, supportive, advantageous अनुकूल
40. **Deter** (verb) – discourage, dissuade, hinder, prevent, inhibit रोकना

Summary of the Editorial

1. Nuclear power currently contributes only around 3% of India's total electricity generation in 2024–25.
2. India has set an ambitious target of 100 GW nuclear capacity by 2047.
3. This target includes deploying at least five indigenous small modular reactors (SMRs) by 2033.
4. The SHANTI Bill seeks to redefine who can build and operate civil nuclear facilities in India.
5. It allows the Central government to grant licences to government entities, joint ventures, and other companies, subject to conditions.
6. The Bill clearly signals a shift towards domestic private sector participation, rather than foreign ownership of nuclear plants.
7. Achieving the 100 GW target requires large-scale capital mobilisation, which private participation can help enable.
8. Allowing licensed non-government operators helps share construction and financial risks associated with nuclear projects.
9. Sensitive nuclear fuel-cycle activities are proposed to remain under state control, addressing nuclear proliferation concerns.
10. Private participation is limited mainly to plant construction, delivery, and parts of the supply chain, focusing on power generation scale-up.
11. By consolidating safety, enforcement, dispute resolution, and participation terms into one statute, SHANTI could reduce legal ambiguity.
12. This consolidation may lower transaction costs and shorten approval and commissioning timelines for developers.
13. However, the liability framework raises concerns, as operator liability is capped at ₹3,000 crore for a nuclear incident.
14. While the Centre assumes liability beyond this cap, questions remain about adequate compensation for victims and environmental remediation.
15. Finally, despite creating a statutory framework, regulatory independence remains weak, as appointments remain influenced by the Centre and the Atomic Energy Commission, potentially affecting public trust and investor confidence.

Practice Exercise: SSC Pattern Based

1. **Which inference most logically follows from the passage regarding the SHANTI Bill's approach to private participation?** [Editorial page]
 - A. It aims to fully privatise India's nuclear fuel cycle to accelerate capacity expansion.
 - B. It selectively opens nuclear power generation to private capital while retaining state control over sensitive domains.
 - C. It prioritises foreign nuclear companies to meet India's 2047 capacity target.
 - D. It removes all regulatory oversight to attract rapid private investment.
2. **What is the most plausible reason the author expresses caution about the liability provisions of the SHANTI Bill?**
 - A. They may inadequately compensate victims and address environmental damage.
 - B. They completely absolve operators of responsibility for nuclear accidents.
 - C. They impose unlimited liability on private operators.
 - D. They discourage insurance coverage for nuclear installations.
3. **Why does the passage argue that regulatory independence remains a concern under SHANTI?**
 - A. Because licensing authority is transferred entirely to private companies.
 - B. Because judicial oversight is removed from nuclear governance.
 - C. Because appointments remain heavily influenced by the Centre and the Atomic Energy Commission.
 - D. Because state governments control nuclear regulators.
4. **How does the SHANTI Bill attempt to reduce project delays and costs for nuclear developers?**
 - A. By eliminating safety and enforcement requirements.
 - B. By centralising safety, enforcement, dispute resolution, and participation terms in one statute.
 - C. By allowing automatic site approvals without scrutiny.
 - D. By shifting all approval powers are shifted exclusively to joint ventures.
5. **The SHANTI Bill primarily seeks to expand India's nuclear capacity by addressing capital constraints through _____.**
 - A. exclusive reliance on public sector funding
 - B. expanded participation of licensed non-government entities
 - C. increased dependence on foreign reactor suppliers
 - D. complete deregulation of nuclear construction
6. **Identify and correct the INCORRECTLY spelt word in the given sentence**

The Collector paid floral tributes to the statue of Mahatma Gandhi after hosting the flag

 - A. floaral
 - B. stateu
 - C. trebutes
 - D. hoisting

7. **Select the option that can be used as a one-word substitute for the given group of words.**
A person who believes that laws and governments are not necessary.
A. Antagonist
B. Antichrist
C. Anarchist
D. Adversary
8. **Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph**
A) During the summer, I noticed that the leaves of the tree were beginning to wither.
B) I am especially proud of it, not only because it has survived several winters, but because it occasionally produces luscious peaches.
C) The tree had grown against a warm wall on a sheltered side of the house.
D) Last summer, I spent many days in the garden watching thousands of ants crawling up the trunk of my prize peach tree.
A. DCBA
B. ABCD
C. CDBA
D. BDAC
9. **Select the most appropriate ANTONYM of the underlined word.**
Do you know the old adage 'the show must go on'?
A. Misconstruction
B. Rebuke
C. Dare
D. Addiction
10. **Select the most appropriate ANTONYM of the word 'Optimistic' from the given sentence.**
After the incident, Radha prepared herself to stay positive even in gloomy days
A. stay
B. incident
C. positive
D. gloomy
11. **Identify how you will ask everyone if the children were not reading the books in passive voice**
A. Were the books being read by the children?
B. Were the books not being read by the children?
C. Were the book not being read by the children?
D. Were the children reading the books?
12. **Select the most appropriate synonym of the given word from the sentence**
Ready
She was preparing dinner in an organised manner using well-equipped tools while listening to the radio.
A. Preparing
B. Listening
C. Organised
D. Equipped

13. Select the most appropriate meaning of the given idiom.

Miss the boat

- A. Missing a good opportunity
- B. Missing your medium of travel
- C. Missing good moments of your life
- D. Being too late

14. Select the most appropriate meaning of the given idiom.

To kick the bucket

- A. To be ill
- B. Be sad
- C. Be happy
- D. To die

15. Select the option that expresses the given sentence in active voice.

Was the bag packed by Mary?

- A. Was Mary pack the bag?
- B. Is Mary packing the bag?
- C. Do Mary pack the bag?
- D. Did Mary pack the bag?

16. The following sentence has been divided into parts. One of them may contain an error.

Select the part that contains the error from the given options. If you don't find any error, mark 'No error' as your answer

After knowing truth, / the jury took the right decision / in the case.

- A. The jury took the right decision
- B. In the case
- C. After knowing truth
- D. No error

17. Select the most appropriate option that can substitute the underlined segment in the given sentence.

The fact that God created man in his personal view by giving him an intellectual spirit elevates him above the beasts of the field.

- A. own glory
- B. own capacity
- C. own image
- D. own idea

18. In the following sentence, four words are underlined, out of which one word is incorrectly spelt. Identify the INCORRECTLY spelt word.

A lot of spontaneity is required from the speaker in an extempore speech. The speaker is expected to brainstorm ideas and give speech instantaneously

- A. instantaneously
- B. extempore
- C. brainstorm
- D. spontaneity

19. Select the most appropriate option to substitute the underlined segment in the given sentence

- The boys and the teacher wants to win
- A. wants to won
 - B. want to won
 - C. want win
 - D. want to win
20. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.
- A) The outcome is much more likely to be favourable if there is substantial international aid than if there is not.
 - B) Many of the underdeveloped countries will promote the growth of their economies in one way or the other, no matter whether they receive substantial outside aid in the process or not.
 - C) By substantial aid I mean not only large amounts of technical assistance but also of capital.
 - D) The character of that development, however, is likely to be strongly influenced by the types of and amounts of aid available.
- A. BDAC
 - B. ABDC
 - C. DABC
 - D. DBCA
21. Select the most appropriate option to fill in blank number 1.
- A. typical
 - B. huge
 - C. the
 - D. a
22. Select the most appropriate option to fill in blank number 2
- A. cultures
 - B. processes
 - C. scenes
 - D. types
23. Select the most appropriate option to fill in blank number 3
- A. gesture
 - B. source
 - C. control
 - D. symbol
24. Select the most appropriate option to fill in blank number 4
- A. about
 - B. as
 - C. like
 - D. than
25. Select the most appropriate option to fill in blank number 5
- A. skill
 - B. end
 - C. enhancement
 - D. existence

Answers

1. B 2. A 3. C 4. B 5. B 6.D 7.C 8.A 9. A 10. D 11.B 12.A
 13. A 14.D 15.D 16.C 17.C 18.D 19.D 20.A 21.C 22.A 23.B 24.B
 25. D

[Practice Exercise]

Explanations

- B) It selectively opens nuclear power generation to private capital while retaining state control over sensitive domains.
 The passage states that SHANTI allows private participation mainly in plant delivery and parts of the supply chain, while “the most sensitive fuel cycles” remain with the state.
 A: Incorrect because fuel cycles remain under state control.
 C: Incorrect as the focus is on domestic private capital, not foreign owners.
 D: Incorrect since SHANTI strengthens regulation by placing safety, enforcement, and dispute resolution in statute.
- A) They may inadequately compensate victims and address environmental damage.
 The passage questions whether the ₹3,000 crore operator liability cap is sufficient for victims and environmental remediation.
 B: Incorrect because operators still have capped liability.
 C: Incorrect as liability is explicitly capped, not unlimited.
 D: Incorrect since operators are required to maintain insurance or financial security.
- C) Because appointments remain heavily influenced by the Centre and the Atomic Energy Commission.
 The author notes that despite a statutory framework, significant appointment powers remain with the Centre and the Atomic Energy Commission, undermining regulator independence.
 A: Incorrect as licensing authority is not transferred to private firms.
 B: Incorrect since dispute resolution is explicitly included in the statute.
 D: Incorrect because state governments are not described as controlling regulators.
- B) By centralising safety, enforcement, dispute resolution, and participation terms in one statute.
 The passage explains that placing multiple regulatory aspects in a single statute can reduce transaction costs and shrink approval and commissioning timelines.
 A: Incorrect as safety and enforcement are strengthened, not removed.
 C: Incorrect because scrutiny is not eliminated.
 D: Incorrect since approval powers are not shifted exclusively to joint ventures.
- B) expanded participation of licensed non-government entities
 The passage states that meeting the 100 GW target requires large capital mobilisation, and allowing licensed non-government entities expands the pool that can share construction risk.
 A: Incorrect because public funding alone is insufficient and not the Bill’s focus.
 C: Incorrect as foreign plant ownership is not the intended focus.
 D: Incorrect since the Bill does not advocate complete deregulation.
- D) The correct spelling of ‘Hosting’ is ‘**Hoisting**’ which means “to raise a flag to the top of a pole using a rope” फहराना

7. C) **Anarchist** (noun) – A person who believes that laws and governments are not necessary. अराजकतावादी

- **Antagonist** (noun) – a person who actively opposes or is hostile to someone or something; an adversary. विरोधी
- **Antichrist** (noun) – a person or force seen as opposing Christ or the Christian Church. ईसा का विरोधी
- **Adversary** (noun) – one's opponent in a contest, conflict, or dispute. प्रतिद्वंद्वी

8. A) **DCBA**

Last summer, I spent many days in the garden watching thousands of ants crawling up the trunk of my prize peach tree. The tree had grown against a warm wall on a sheltered side of the house. I am especially proud of it, not only because it has survived several winters, but because it occasionally produces luscious peaches. During the summer, I noticed that the leaves of the tree were beginning to wither.

9. A) **Adage** (noun) – A proverb or short statement expressing a general truth. उक्ति/ कहावत

Antonym: **Misconstruction** – A wrong or incorrect understanding or interpretation. गलत समझना, गलत अर्थ

- **Rebuke** – An expression of sharp disapproval or criticism. फटकारना
- **Dare** – A challenge to do something requiring boldness. साहस करना
- **Addiction** – A strong and harmful need to regularly have or do something. लत

Given the meaning of "adage," none of the provided options directly stands as a clear antonym. However, option A, "Misconstruction," can be seen as an antonym in the context that an adage is a well-understood truth, whereas misconstruction is a misunderstanding or incorrect interpretation of something.

10. D) **Optimistic** (adjective) – Hopeful, positive, bright, cheerful, sanguine, enthusiastic आशान्वित

Antonym: **Gloomy** (adjective) – Dark, dim, dreary, bleak, pessimistic उदासीन

11. B) **Were the books not being read by the children?**

Active से Passive Voice में बदलने के लिए, Active वाक्य का Object Passive वाक्य का Subject बन जाता है। Verb को Active से Passive में बदलते समय सही Tense का प्रयोग किया जाता है। Active वाक्य में "the children" Subject है, "were not reading" Verb (Past Continuous) है और "the books" Object है। Passive में बदलने पर Object "the books" Subject बन गया है, Verb को "were not being read" (Past Continuous Passive) में बदला गया है और "by the children" के रूप में प्रयोग किया गया है।

- To change a sentence from Active to Passive Voice, the object of the active sentence becomes the subject of the passive sentence. The verb is transformed from the active form to the passive form, ensuring correct tense usage. In this case, "the children" (Subject), "were not reading" (Verb in Past Continuous), and "the books" (Object) from the active voice have been transformed into "the books" (Subject), "were not being read" (Passive Verb in Past Continuous), and "by the children".

12. A) **Prepare** (verb) – Making ready, setting up, arranging, organizing तैयार करना

The word "Ready" in the context of the sentence refers to getting something prepared or set up, hence the synonym that best fits is "Preparing." The other options are not related to the

meaning of "Ready" as used in this context. Therefore, the correct answer is option A, "Preparing."

13. A) **Miss the boat** (idiom) – Missing a good opportunity अच्छा अवसर गवा देना

14. D) **To kick the bucket** (idiom) – To die मर जाना

15. D) **Did Mary pack the bag?**

Active से Passive Voice में बदलने के लिए, Active वाक्य का Object Passive वाक्य का Subject बन जाता है। Verb को Active से Passive में बदलते समय सही Tense का प्रयोग किया जाता है। Passive वाक्य में "The bag" Subject है, "was packed" Verb (Past Simple Passive) है और "by Mary" Agent है। Active में बदलने पर Subject "Mary" बन गया है, Verb को "Did pack" (Past Simple Active) में बदला गया है और "the bag" Object के रूप में प्रयोग किया गया है।

- To change a sentence from Passive to Active Voice, the object of the passive sentence becomes the subject of the active sentence. The verb is transformed from the passive form to the active form, ensuring correct tense usage. In this case, "The bag" (Subject), "was packed" (Verb in Past Simple Passive), and "by Mary" (Agent) from the passive voice have been transformed into "Mary" (Subject), "Did pack" (Active Verb in Past Simple), and "the bag" (Object).

16. C) वाक्य के भाग 'C' में error है। "After knowing truth" अधूरा है क्योंकि 'truth' एक indefinite noun है और इसका विशेष प्रयोग किया जा रहा है। हमें "the" का उपयोग करना होगा, जैसे कि "After knowing the truth". 'The' का प्रयोग होता है जब हम किसी विशेष या विशिष्ट noun की बात करते हैं। यहां 'truth' का उपयोग विशेष संदर्भ में किया गया है, इसलिए इसके साथ 'the' का उपयोग होना चाहिए।

- There is an error in part 'C' of the sentence. "After knowing truth" is incomplete as 'truth' is an indefinite noun and it is being used in a specific manner. We should use "the", as in "After knowing the truth". 'The' is used when we are referring to a specific or particular noun. Here, 'truth' is used in a specific context, therefore, 'the' should be used with it.

17. C) The correct option to substitute the underlined segment in the given sentence is C. **'own image'**. यहाँ 'own image' का प्रयोग होगा क्योंकि यह बाइबल की शिक्षा के अनुसार एक प्रसिद्ध वाक्यांश है, जिसमें कहा गया है कि ईश्वर ने मानव को अपनी छवि में बनाया है। बाकी options इस वाक्य के संदर्भ में सही अर्थ नहीं देते हैं; जैसे— The fact that God created man in his own image elevates him above the beasts of the field.

18. D) The incorrect spelling in the given sentence is **'spontaneity'**. The correct spelling is 'spontaneity', which means "the condition of being spontaneous; spontaneous behavior or action." स्वाभाविकता, सहजता

19. D) यहां **'want to win'** का उपयोग होगा क्योंकि 'boys and the teacher' एक plural noun है। इसलिए, हमें plural verb 'want' का प्रयोग करना होगा, न कि singular 'wants'। इसके अलावा, Infinitive (i.e. To + V1) form में 'To' के बाद V1 आता है!

- Here, 'want to win' should be used because 'boys and the teacher' is a plural noun. Therefore, we need to use the plural verb 'want', not the singular 'wants'. Additionally, in the infinitive form (i.e., To + V1), V1 follows 'To'!

20. A) **BDAC**

Many of the underdeveloped countries will promote the growth of their economies in one way or the other, no matter whether they receive substantial outside aid in the process or not. The character of that development, however, is likely to be strongly influenced by the types of and amounts of aid available. The outcome is much more likely to be favourable if there is substantial international aid than if there is not. By substantial aid I mean not only large amounts of technical assistance but also of capital.

21. C) **'the'**

- The Sun is specifically referred to as the center of our Solar System, so using "the" makes the statement more definite. Options A, B, and D are grammatically incorrect in this context.

22. A) **'cultures'**

- The Sun's significance in "cultures" around the world is appropriate in this context since the Sun is central to various mythologies and religions in different cultures. Other options are not contextually relevant.

23. B) **'source'**

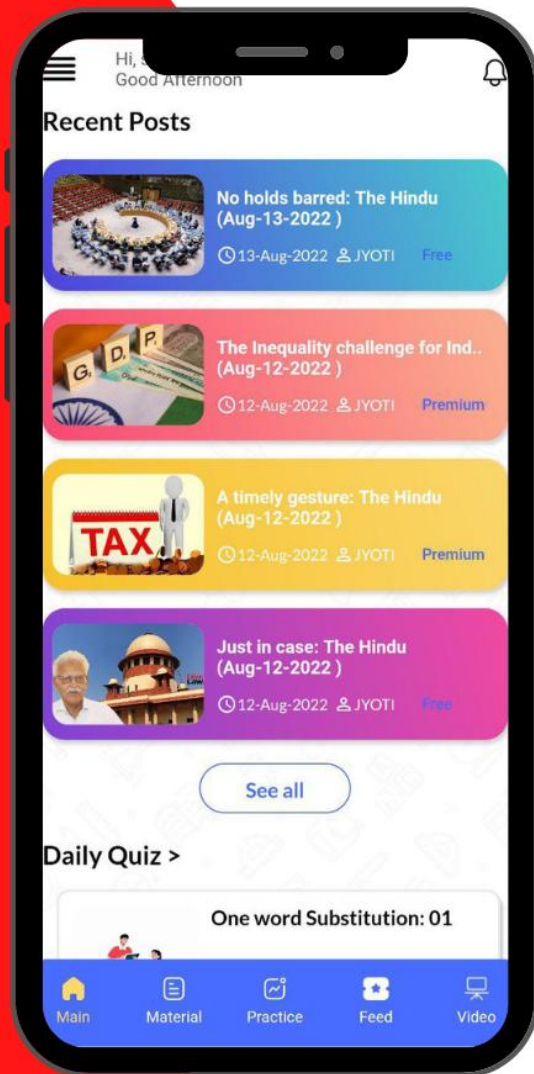
- The Sun is described as being of vital importance to life on Earth, and in this context, it is the "source" of energy. The other options do not appropriately describe the Sun's role in providing energy.

24. B) **'as'**

- In comparisons where something is equal to or the same as something else, "as" is used. In this case, the Sun is described as being "a hundred times as wide as the Earth," so option B is the correct choice.

25. D) **'existence'**

- In this context, the statement is discussing the conditions that would make life impossible without the Sun. Without photosynthesis or oxygen, there would be no "existence" of life. Other options do not make sense in this context



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