



### Daily Current Affairs Prelims Quiz 03-09-2024 (Online Prelims Test)

1) Consider the following statements:

1. All High Courts are allowed to use Hindi in their proceedings and legal documents.
2. Article 21 states that the public has the right to early justice, which includes justice in a language they understand.
3. National Judicial Academy seeks to develop common core vocabulary for the purpose of translating legal material into regional languages.

How many of the statements given above are correct?

- a. Only one
- b. Only two
- c. All three
- d. None of the above

Answer : a



### Proceedings in the Supreme Court and High Courts

- Article 348(1) (a) of the Constitution of India states that all proceedings in the Supreme Court and in every High Court, shall be in **English language**.
- Article 348 (2) of the Constitution states that the Governor of a State, with consent of the President, authorize the use of Hindi Language, or any other language in the proceeding of the high court.
- Out of India's 25 High Courts, **only four high courts such as Rajasthan, Madhya Pradesh, Uttar Pradesh and Bihar are allowed** to use Hindi in their proceedings and legal documents.
- Bihar was the last High Court to receive authorisation to use Hindi way back in 1972.
- The use of Hindi in the proceedings of High Court of Rajasthan was authorized under clause (2) of Article 348 of the constitution in 1950.
- Government of India had received proposals from the Government of few states such as Tamil Nadu, Gujarat, Chhattisgarh, West Bengal and Karnataka to use of their regional languages.
- **According to Article 21, the public has the right to early justice, which includes justice in a language they understand.**
- **Bharatiya Bhasha Samiti** – A High Powered Committee for Promotion of Indian Languages has been constituted by the **Ministry of Education**.
- The mandate of this committee would be to explore and recommend pathways of the holistic and multi-disciplinary growth of Indian languages as envisaged in the National Education Policy-2020.
- **It seeks to develop common core vocabulary that that closely align with various Indian languages for the purpose of translating legal material into regional languages.**

2) Consider the following statements with respect to Krishi-Decision Support System (DSS)

1. It is a digital geo-spatial platform that provides real-time data insights for stakeholders in Indian

agriculture.

2. It is an initiative of Ministry of Agriculture & Farmers' Welfare.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : c

### Krishi-Decision Support System (DSS)

- Krishi-DSS is the first-of-its-kind geospatial platform specifically designed for Indian agriculture.
- The platform provides seamless access to comprehensive data that can be easily accessed from anywhere at any time.
- It is an initiative of the **Ministry of Agriculture & Farmers' Welfare**.
- The comprehensive data include satellite images, weather information, reservoir storage, groundwater levels and soil health information.
- It can also be helpful in drought monitoring and it will provide near real-time information on various indicators such as soil moisture, water storage, crop condition, dry spells and so on.
- It will inform the stakeholders about how weather is impacting the crops, crop harvest status, crop residue burning and so on.

3) Consider the following statements with respect to Bird Dung

- 1. It is a species of spiders of the family Thomisidae.
- 2. Western Ghats has the world's highest concentration of this species.

Which of the above statement(s) is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : a

### Bird Dung or Bird-dropping Spider (*Phrynarachne decipiens*)

*Recently the bird dung crab spider was recorded by a team of zoologists from Assam, for the first time in India.*

- Bird Dung was first recorded as seen in the forests of Indonesia in the 19th century by a Scottish naturalist, who marvelled at how its silken web mimicked the fluid part of a bird's dropping.
- The species is **almost completely white**, whereas others of its kind come in varying shades of white and dark colours.
- It is **a species of spiders of the family Thomisidae**.
- They **use mimicry** of a quite different sort to capture its prey, which consist almost exclusively of male moths.
- The bite of this spider is not considered to be dangerous.
- **Range** - The Bird-dropping Spider is found throughout much of eastern and southern

Australia.

- It is for the **first time** found in the **Assam** of **India**.
- **South-east Asia has the world's highest concentration of bird-dropping crab spiders.**



4) Om Parvat, sometimes seen in the news recently, is a mountain peak situated at?

- a. Himachal Pradesh
- b. Jammu and Kashmir
- c. Uttarakhand
- d. Sikkim

Answer : c

### Om Parvat

*Om Parvat, a revered Himalayan peak in Uttarakhand, has lost its snow cover for the first time, alarming locals and scientists.*

- Om Parvat is a Himalayan peak situated at **Uttarakhand**.
- It has recently lost its snow cover for the first time.
- This phenomenon is seen as a *clear sign of climate change*, with several factors contributing:
  - Reduced snowfall in winter
  - Increased vehicular emissions
  - Rising global temperatures
  - More frequent and extensive forest fires
  - Increased pollution, including black carbon from fires
- UN report states one-third of Himalayan glaciers are threatened by global warming.
- Glaciers are losing 58 billion tonnes of ice annually.
- Temperature increase in the Hindu Kush Himalayan region is higher than global averages.
- Western Himalayas are particularly affected due to limited precipitation sources.

- **Impacts** - Threat to local livelihoods dependent on tourism.
- Disruption of the Himalayan ecosystem.
- Increased drought and earlier forest fires.
- Drying up of water sources.
- Scientists emphasize the need for a holistic approach to glacier health, considering factors like alpine forests and meadows.



5) Consider the following statements with respect to TDP1

1. It plays a crucial role in maintaining the DNA structure during replication and transcription.
2. It is an enzyme found in all higher organisms.

Which of the above statement(s) is/are **incorrect**?

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. Neither 1 nor 2

Answer : d

## TDP1

*Scientists at IACS have discovered a potential new target for killing cancer cells, focusing on DNA repair mechanisms during cell division.*

- TDP1 plays a role in repairing the DNA damage in cancer cells.
- It plays a crucial role in maintaining the DNA structure during replication and transcription.
- Top1 is an enzyme found in all higher organisms.
- Drugs that target Top1 disrupt its activity, leading to the death of many cells, including cancer cells.
- Scientists at IACS have discovered a potential new target for killing cancer cells, focusing on DNA repair mechanisms during cell division.



- The study involves two key molecules:
  1. CDK1 protein
  2. TDP1 enzyme
- Current anti-cancer drugs (camptothecin, topotecan, irinotecan) target topoisomerase 1 (Top1), an enzyme crucial for DNA replication and transcription.
- Cancer cells can develop resistance to these drugs by activating repair mechanisms using TDP1.
- **The research findings** – Cells switch repair tools based on cell cycle stage and presence of camptothecin.
- A specific change (phosphorylation) in TDP1 helps remove it from chromosomes during cell division.
- Targeting CDK1 can disrupt the Top1-mediated DNA damage repair process.
- **Potential new treatment strategy** – Combining CDK1 inhibitors with Top1 inhibitors could be more effective against cancer cells.
- This combination makes it harder for cancer cells to survive and may overcome resistance to single-agent therapies.
- The study was conducted on human breast cancer cells, but the approach could potentially benefit patients with other cancers like ovarian, colorectal, and small cell lung cancers.

## The first step towards targeted chemotherapy

IACS researchers have discovered a new target for killing cancer cells

■ The new target that has been discovered is used by cancer cells to regulate DNA repair during cell division

■ Cancer cells can develop resistance to treatment by using intrinsic DNA repair mechanism

■ A combinatorial targeting of two key molecules — the CDK1 protein and the TDP1 enzyme — may lead to novel anti-cancer therapeutics

■ Currently, anti-cancer drugs target a molecule (Top1) involved in DNA replication and transcription

■ While drugs that target Top1 can disrupt its activity leading to the death of cancer cells, cancer cells can activate their repair mechanisms to counteract the drug effects

■ Targeting another protein (CDK1) that disrupts the Top1-mediated repair process can potentially kill the cancer cells



IACS researchers are currently using mouse models to test the combination drug therapies using in vivo tumours

■ Combining CDK1 inhibitors with Top1 inhibitors can prove lethal for cancer cells