



ENLITE IAS
Enlightening minds. Lightening journey

09 SEPTEMBER 2025

EN-BUZZER

Daily News Analysis

For IAS/IPS/IFS Coaching - Call us at 7994058393

www.enliteias.com



TUESDAY, 9th SEPTEMBER 2025

Table of Contents

1. Two-Factor Authentication(2FA).....	2
2. Israel.....	4
3. Great Indian Bustard (GIB).....	5
4. Papua New Guinea.....	6
5. RNA and Amino Acids.....	7





1. Two-Factor Authentication(2FA)

- Prelims - Two-Factor Authentication
- Mains - GS 3 - Internal Security

Two-Factor Authentication

- What is it?:
 - A cybersecurity mechanism requiring users to provide **two different types of credentials** to verify identity.
 - Provides an extra security layer beyond simple password authentication.
- Common Methods of 2FA:
 - **SMS/Email OTPs:** One-time passcodes sent to a user's registered device/email.
 - **Authenticator Apps:** Apps like Google Authenticator, Microsoft Authenticator generate time-based codes.
 - **Hardware Tokens:** USB keys, smart cards.
 - **Biometrics:** Aadhaar-based authentication, device fingerprint scanners.
- Importance:
 - Protects against **phishing, credential theft, brute-force attacks**.
 - Reduces risk of **identity theft, financial fraud, data breaches**.
 - Enhances **trust in digital services**.
 - Essential for **critical sectors:** banking, defence, e-governance, health, etc.
- 2FA in India:
 - **RBI Guidelines (2011 onwards):** Mandated 2FA for online banking and card-not-present transactions.
 - **Aadhaar Authentication:** Combines UID with biometrics/OTP.
 - **Government Portals** (e.g. Income Tax e-filing, DigiLocker, GST portal) increasingly use 2FA.
 - **UPI Payments:** Mobile security, UPI PIN and OTP framework.
- Challenges:
 - **User inconvenience** (extra step may reduce adoption).
 - **SIM-swap frauds** compromise SMS OTPs.



- **Dependence on devices:** OTP delays due to network issues.
- **Digital divide:** Biometric or smartphone-based 2FA may exclude rural/elderly populations.
- **Way Forward:**
 - Promote **multi-factor authentication (MFA)** combining biometrics, tokens and OTP.
 - Encourage **passwordless authentication** (FIDO2 standards).
 - Public awareness campaigns on **safe digital practices**.
 - Integration with **Digital India initiatives** to secure citizen data.



2. Israel

- **Prelims** - Location of Israel
- **Mains** - GS 1 - Geography

Israel

ENLITE IAS

Why in the news?

- India and Israel signed a Bilateral Investment Agreement.

Israel

- **Location:** West Asia
- **Capital:** Jerusalem.
- **Border Countries:** Lebanon, Syria, Jordan, Egypt.
- **Palestinian Territories:** **West Bank** along the east and the **Gaza Strip** along the southwest.
- **Bordering Waterbodies:** Eastern Mediterranean, **Red Sea**, Sea of Galilee and **Dead Sea**.
- **River:** Jordan River
- **Climatic Type:** Mediterranean climate, Desert climate.

ISRAEL

--- Armistice Demarcation Line
--- Boundary of former Palestine Mandate

Haifa
Nazareth
Tel Aviv-Yafo
Ramla
Jerusalem
Beersheba
Gaza
West Bank
Golan Heights
Lake Tiberias
Mediterranean Sea
Dead Sea
EGYPT
JORDAN
SYRIAN ARAB REPUBLIC

25 km

7994058393
www.enliteias.com enliteias@gmail.com

3. Great Indian Bustard (GIB)

- Prelims - Great Indian Bustard
- Mains - GS 3 - Environment

Great Indian Bustard (GIB)

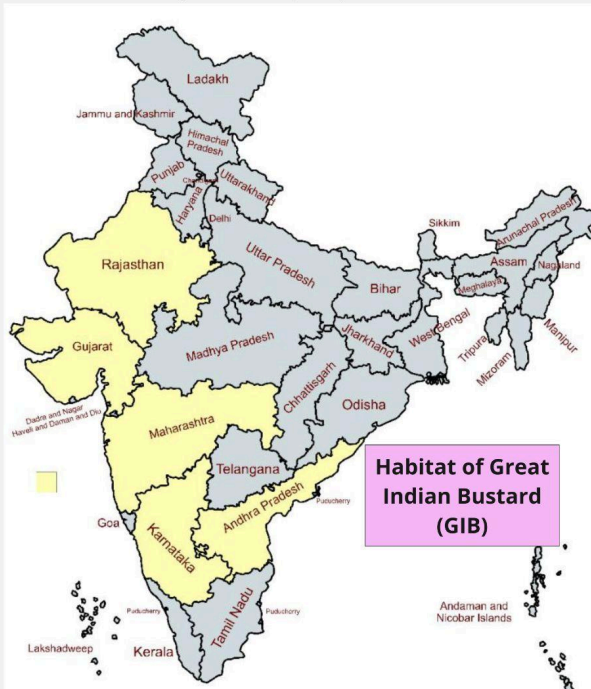


Why in the news?

- The Union Environment Ministry's expert appraisal committee (EAC) for the non-coal mining sector has given its nod to carry out an environment impact assessment (EIA) study for Birmania Rock Phosphate mine proposed in the potential Great Indian Bustard (GIB) area.

Great Indian Bustard (GIB)

- **State bird of Rajasthan**
- **Ecological Habitat** - Grasslands
- **Threats** -
 - Electrocution with power transmission lines
 - Hunting
 - Habitat loss
- **Protection Status:**
 - **International Union for Conservation of Nature Red List:** Critically Endangered
 - **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** Appendix 1
 - **Convention on Migratory Species (CMS):** Appendix I
 - **Wildlife (Protection) Act, 1972:** Schedule 1



Great Indian Bustard Project (Regional Effort)

- Rajasthan government has established the 'Great Indian Bustard Project' to construct breeding chambers for the bird.
- Government also developed infrastructure to decrease human pressure on the going-to-be-extinct species habitats.

Houbara Bustard

- **Habitat** - Northeast Asia, across central Asia, the Middle East, and the Arabian Peninsula to reach the Sinai desert (Egypt).
- **Reasons for Decline:** Poaching, unregulated hunting, along with degradation of its natural habitat.
- **IUCN Status**- Vulnerable



Desert National Park

- **Location** - Thar Desert
- **One of the largest national parks in India.**
- Park has the fragile desert ecosystem with sand dunes, rocky outcrops, salt lakes, intermittent streams, and fixed dunes.
- **IUCN Protected Species**
 - Great Indian Bustard - Critically Endangered



© 7994058393

www.enliteias.com @enliteias@gmail.com



4. Papua New Guinea

- **Prelims** - Location of Papua New Guinea
- **Mains** - GS 1 - Geography

Papua New Guinea



ENLITE IAS

Why in the news?

- Indian Navy Band participated in the 50th independence day celebrations of Papua New Guinea.

Papua New Guinea

- **Location:** It is a country in Oceania that comprises the eastern half of the island of New Guinea and its offshore islands in Melanesia.
- **Capital** - Port Moresby
- **Land Border** - Indonesia.
- **Maritime Border** - Solomon Island and Australia.
- **Features:**
 - Highly prone to Earthquakes and Tsunamis.
 - Mostly comprised of Mountains and Tropical Rain forests.
 - Is a member of Commonwealth.
- **Volcano:** Rabaul Caldera



7994058393
www.enliteias.com @enliteias@gmail.com



5. RNA and Amino Acids

- Prelims - RNA and Amino Acids
- Mains - GS 3 - Science and Technology

Why in the news?

- Researchers at University College London successfully demonstrated that amino acids can spontaneously and selectively attach to RNA molecules.

RNA Molecule

- **What is it?:** RNA (Ribonucleic Acid) is a nucleic acid that plays a central role in coding, decoding, regulation, and expression of genes.
- **Features:**
 - It is usually single-stranded (unlike double-stranded DNA).
 - Composed of ribose sugar, phosphate backbone, and nitrogenous bases (Adenine, Uracil, Cytosine, Guanine).
- **Types of RNA:**
 - **mRNA (Messenger RNA):**
 - ★ Carries genetic information from DNA to ribosomes.
 - ★ Acts as a template for protein synthesis.
 - **tRNA (Transfer RNA):**
 - ★ Transfers specific amino acids to ribosomes.
 - ★ Decodes mRNA codons into amino acids.
 - **rRNA (Ribosomal RNA):**
 - ★ Structural and functional components of ribosomes.
 - ★ Catalyzes peptide bond formation (acts as a ribozyme).
 - **Other RNAs (Regulatory RNAs):**
 - ★ **snRNA (small nuclear RNA):** Involved in RNA splicing.
 - ★ **miRNA, siRNA:** Regulate gene expression (RNA interference).
 - ★ **lncRNA (long non-coding RNA):** Chromatin modification & transcriptional regulation.
- **Key Concepts regarding RNA:**
 - **Central Dogma of Molecular Biology:** DNA → RNA → Protein.



- **Reverse Transcription:** Some viruses (e.g., HIV, retroviruses) use RNA as genetic material, converting RNA → DNA via **reverse transcriptase**.
- **RNA World Hypothesis:** Suggests early life on Earth may have relied solely on RNA for both genetic information storage and catalysis.
- **Significance of RNA:**
 - **Medical:** Target for therapies (RNAi, mRNA vaccines).
 - **Evolutionary Biology:** Provides clues to life's origin (RNA World).
 - **Biotechnology:** CRISPR, synthetic biology, genetic engineering.

Amino Acids

- **What are they?:**
 - Amino acids are **organic compounds** containing an **amino group** ($-\text{NH}_2$), a **carboxyl group** ($-\text{COOH}$), a **hydrogen atom**, and a variable **R-group (side chain)** attached to a central carbon (α -carbon).
 - They are the **building blocks of proteins**, essential for growth, repair, metabolism, and signaling in living organisms.
- **Classification:** Based on Nutritional Requirement;
 - **Essential Amino Acids (9 in humans):** Must be obtained from diet
 - **Non-Essential Amino Acids:** Synthesized in the body
 - **Conditionally Essential:** Required in stress/illness
- **Functions of Amino Acids:**
 - **Structural:** Form proteins (collagen, keratin).
 - **Metabolic:** Involved in enzymatic reactions, hormones (e.g., thyroxine from tyrosine).
 - **Energy:** Serve as energy source during fasting/starvation.
 - **Signaling:** Neurotransmitters (e.g., glutamate, GABA derived from glutamate).
 - **Immune role:** Glutamine, arginine critical for immunity.