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*C – Chennai; B – Bengaluru; D – Delhi; H-Hyderabad; T – Thiruvananthapuram
India tests Swedish technology to reduce stubble burning

Foreign firm launches its first pilot project plant in Punjab

JACOB HENRIK JIM
NEW DELHI

Pollution from stubble burning in winter is the key contributor to the sharp decline in air quality in Delhi. But, stubble burning continues unabated. To find a solution to this issue, India is testing a Swedish technology – torrefaction that can convert rice stubble into “bio-coal”.

The Office of the Principal Scientific Adviser (PSA) to the Government of India has funded a pilot project in Punjab to evaluate the feasibility of the technology. Bioexcel, a Swedish company, has set up a pilot plant at the National Agri-Food Biotechnology Institute in Mohali.

Pg. 4 ➔ Delhi edition

Part A—Preliminary Examination

Paper I—(200 marks) Duration: Two hours

- Current events of national and international importance.
- Indian Polity and Governance-Constition, Political System, Panchayati Raj, Public Policy, Rights Issues,
- Economic and Social Development-Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.
- General issues on Environmental ecology, Bio-diversity
- General Science

Part B—Main Examination

PAPER-IV


- Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
- Science and Technology- developments and their applications and effects in everyday life.
- Conservation, environmental pollution and degradation, environmental impact assessment.

News:

- Measure to address stubble burning problem.
  - Torrefaction - Swedish Technology
    - Pilot project - funded by office of PSA
    - Plant setup in National Agri-Food Biotechnology Institute, Punjab
- India - Sweden High Level Policy Dialogue
  - “Agri-waste to High Energy Bio-Coal”
    - Under “Waste to Wealth” mission of PM - STIA
- Bio-Coal
  - Made from unutilized crop waste
  - 20 times lower emissions than conventional coal

Expected Outcomes:

- Improved air quality
- Reduced emissions
- Livelihood opportunities
- Can be used as clean energy input
  - Source in thermal power plants, households
- Capacity building
- Employment generation
- Improvement of soil quality
Torrefaction:

- Thermochemical process → heating of biomass in absence of air
  - Temperature: 200°C to 350°C
- Volatilization → 30% mass of biomass reduced
- Near net zero energy process
- Efficiency of co-firing biomass in large coal-based thermal power plants → higher
  - Incremental investment → lower

**Efficiency**

- Mass balance → increase in energy density 1.3 times
- Capital cost higher than traditional pellets but cost effective

**Characteristics:**

- Combustion → similar to coal
- High energy density
- Low moisture content
- Near-zero Sulphur content
- Water repellent properties → longer storage (hydrophobic)
- Co-firing range: up to 50%

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**Interview: Satish Roy**

"Structural policies needed for 7+ plus % growth"

The slowdown is an outcome of supply-side constraints, says the economist

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**PAPER-IV**

**General Studies-III: Technology, Economic Development, Bio diversity, Environment, Security and Disaster Management**

- Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.
Slowdown → Slow GDP growth

Recession

- Significant decline in economic activity spread across economy, lasting > few months, visible in Real GDP, Real Personal income, employment, industrial production & wholesale - retail sales

Gross Value Added → Q1 - 0.6%; Q2 - 1.0%

Manufacturing Sector close to being in recession

Recession → Structural in nature

- Short-term actions & Structural actions

  - Short-term actions:
    - Increase amount of cash in economy
    - PSBs
      - Cash + Interest rate ⇒ Easy Policy Credit
    - Reduction in repo rate
      - Boost aggregate demand

Structural Measures:

- Skills and Industrial Policy
  - Eg: Textile Sector → Locate textile factories in states - moderately priced - high volume capacity - cheap labour
    - Invest in North & Eastern India (Bihar, Jharkhand, etc.)

- Agriculture Sector → Change in business model

Healthcare & Education Section

- Business Model
  - Using Savings
    - Supplement by Government

- Housing Sector
  - Using land to build affordable Housing

Conclusion:

- Slowdown outcome of supply-side constraints, not demand-side
"Tsunamis in Iran, Pak. could reach Indian shores"

It poses a challenge to warning systems: INCOIS

The Indian Ocean is likely to be affected by tsunamis generated by earthquakes at two potential source regions, the Arabian Makran and the Maldives Island Subduction Zone (MIS), according to scientists at the Indian National Centre for Ocean Information Services (INCOIS).

Makran source

The MIS off the coasts of Iran and Pakistan is poorly understood, especially the tsunamis that can be generated by the earthquakes. It is possible that the tsunamis generated by the Makran source can reach the shores of India, Iran, Oman, Pakistan and many countries within a few minutes with heights of several metres, posing tremendous challenges to existing tsunami warning systems, they pointed out.

Two-day meet

It is for this reason that INCOIS is hosting a two-day meeting of experts for development of a tsunami early warning systems at INCOIS in Hyderabad.

Indian Ocean Tsunami Warning and Mitigation System (IOTWMS)

- Established by the Intergovernmental Oceanographic Commission (IOC) of UNESCO
- Established in response to the tragic tsunami of 26th December 2004
- Funded by UNESCAP Trust Fund (United Nations Economic and Social Commission for Asia and the Pacific)

News:

- Indian Ocean is likely to be affected by tsunamis generated by earthquakes at two potential source regions

Indian National Centre for Ocean Information Services (INCOIS) or INO:

- Autonomous body, established in 1999 at Hyderabad
- Under the Ministry of Earth Sciences
- to provide the ocean information & advisory services to society, industry, government agencies and also to the scientific community
Two Potential Source Regions:

(i) Andaman- Nicobar - Sumatra island Subduction Zone (Or) Indonesian Subduction Zone

(ii) Makran Subduction Zone

Makran Subduction Zone (MSZ):

- Off the coasts of India and Pakistan
- Arabian plate which is denser is dipping or subducting against the Eurasian plate
- Called for the development of Probabilistic Tsunami Hazard Assessment for the Makran region

Indonesia Subduction Zone:

- Indo - Australian plate is subducting or moving down against the Eurasian plate
GST revenues not enough for States’ compensation: Centre

Letter to States flags falling collections

SPECIAL CORRESPONDENT
NEW DELHI

The Centre has written to all States voicing concern that due to the lower Goods and Services Tax (GST) collections, the compensation cess might not be enough to pay for losses arising out of the tax system.

The communication comes at a time when several States, including Rajasthan, Kerala, Delhi, Punjab and West Bengal, have publicly urged the Centre to transfer pending compensation payments as they have

The government of Punjab has even said that it may take the matter to the Supreme Court if the Centre does not release the dues. The issue will be discussed in detail at the next night of December.

“Among other issues, the GST revenue position shall be discussed in detail at this meeting,” the Centre’s letter to the States, reviewed by The Hindu, said.

Part A—Preliminary Examination
Paper I — (200 marks) Duration: Two hours

- Current events of national and international importance.
- Economic and Social Development-Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.

Part B—Main Examination
PAPER-III

General Studies II: Governance, Constitution, Polity, Social Justice and International relations.

- Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.

PAPER-IV


- Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

News:

- Central Government does not have adequate GST collections and Compensation cess collections to compensate the states for the losses arising out of GST system (One of the several concerns)

- Some states - Compensation dues from Centre pending for several months

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<tr>
<td>GST</td>
<td>₹ 6,63,343 crore</td>
<td>50% (Approx.)</td>
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<tr>
<td>Compensation Cess</td>
<td>₹ 1,09,343 crore</td>
<td>59%</td>
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- Cess - Temporary tax levied for a particular purpose
- Surcharge - a tax on the income tax
Q1. The term ‘Torrefaction’ recently seen in news is related to which among the following?

a) New technology for soft landing on moon.
b) Physical property of metals defining their ability to be hammered, pressed, or rolled into thin sheets without breaking.
c) Process for making high energy bio-coal from agri-waste.
d) A method to produce biodiesel.

Q2. Consider the following statements with reference to the compensation to states for loss on account of implementation of GST Taxation system.

1. The compensation payable to a State shall be provisionally calculated and released at the end of every two months period.
2. The Goods and Services Tax Compensation Fund, which shall form part of the public account of India, is a non-lapsable fund.

Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2
Practice Question – Prelims
Q3. Consider the following statements with reference to “Indian Ocean Tsunami Warning and Mitigation System (IOTWMS)”

1. It was established by the Intergovernmental Oceanographic Commission (IOC) of UNESCO in response to the tragic tsunami of 26 December 2004.
2. It is funded by the United Nations ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness.
3. The Indian Tsunami Early Warning Centre (ITEWC) established at INCOIS acts as one of the Regional Tsunami Advisory Service Provider (RTSP) along with Australia & Indonesia for the Indian Ocean region.

Select the correct statements using the codes given below
a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1, 2 and 3

Practice Question – Mains
GS - III
Q. “Indian economy is in slowdown, not in recession”. In the light of this statement, discuss the structural changes and other measures needed to revive the economy. (10 marks, 150 words)

Practice Questions – Prelims
04-12-2019
Answers
1. Option ‘c’
2. Option ‘c’
3. Option ‘d’