Environment & Ecology · GS - III

Industrial pollution of river water is a significant environmental issue in India. Discuss the various mitigation measures to deal with this problem and also the government's initiatives in this regard.

EXAM YEAR	PAPER	SUBJECT
2024	GS - III	Environment & Ecology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Industrial effluents, river pollution, ETP, CETP, ZLD, pollution control boards, Namami Gange, monitoring, reuse and recycling

Model Answer

Introduction

Industrial effluents containing chemicals, heavy metals and organic pollutants are a major source of river-water degradation. Effective mitigation requires prevention at source, treatment and continuous monitoring.

Body

1. Mitigation Measures

- Industries should install and properly operate Effluent Treatment Plants (ETPs).
- Common Effluent Treatment Plants (CETPs) can support clusters of small industries.
- Cleaner production and less-toxic inputs should replace highly polluting processes.
- Water recycling and reuse should be promoted, with Zero Liquid Discharge where technically feasible.
- Real-time effluent monitoring can improve regulatory compliance.
- Polluter-pays and environmental-compensation principles should strengthen accountability.

- Restoration of polluted river stretches and ecological flows should complement pollution control.

2. Government Initiatives

- The **National Mission for Clean Ganga (Namami Gange)** focuses on pollution abatement and river rejuvenation.
- The **National River Conservation Plan** addresses pollution in identified rivers.
- CPCB and State Pollution Control Boards regulate industrial discharge through environmental standards and consent mechanisms.
- Online Continuous Emission/Effluent Monitoring Systems strengthen compliance monitoring.

Conclusion

River pollution cannot be solved solely by end-of-pipe treatment. A combination of cleaner production, strict enforcement, technological monitoring, industrial accountability and river-ecosystem restoration is required for sustainable water quality.

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