

INDIAN INSTITUTE OF TECHNOLOGY DELHI
Minor Examination RDL725; 2024-25, I Semester

Time duration: 2 h
MM: 80

- Q1 (a) Discuss how price acts as an indicator of resource scarcity. Differentiate between price as a signal of absolute and relative scarcity. 06
- Q1 (b) Why does price as an indicator fail to allocate environmental resources optimally? Provide real-world examples. 06
- Q1 (c) Technological changes contribute to natural resource and ecological conservation. Discuss the statement in a neoclassical and environmental economics framework. 08
- Q2 A thermal power plant is planning to install a new pollution control system, The plant has shared the following marginal emission control costs and the marginal damage cost. 20
- Draw MDC and MCC curves for both scenarios.
 - Calculate the optimal pollution abatement level before and after the technology change.
 - Compare the total social cost of pollution, total control, and damage costs in both scenarios. How does technological improvement affect society from an economic and environmental point of view?

Quantity of Emissions in tonnes	50	100	200	300	400	500	600	700	800	900
Marginal Control cost with old control technology (Rs 000)	460	410	320	260	200	150	90	50	30	0
Marginal Control cost with new control technology (Rs 000)	350	300	220	160	110	80	50	30	10	0
Environment Damage Cost (Rs 000)	10	20	40	70	110	150	210	260	320	450

- Q3 (a) A state pollution control board has issued 200 pollution permits each allowing 10 tons of CO₂ emissions. After emission control, plant A emits 1200 tons of CO₂ while Plant B emits 800 tons of CO₂. Discuss the working of tradable pollution permits and their economic implications in the following situations. The cost of pollution permit is Rs. 5000 per permit. The penalty for violation is Rs. 1000 per ton of CO₂ emission. 10
- Both the plants hold permits jointly.
 - Both the plants hold permits equally (100 permits each).
 - The State Board decides to reduce the permits by 10% and both the plants hold permits equally (100 permits each).

2020 permits

90

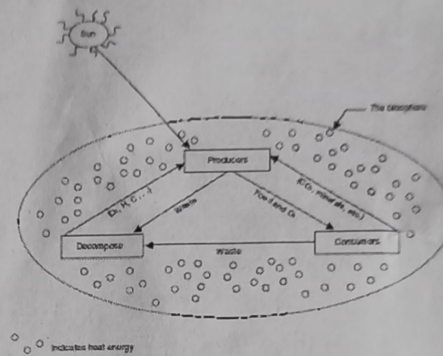
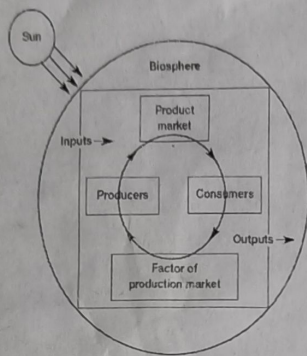
200

*79
101*

fine 1000 per permit

- Q3 (b) i. Examine the Coasian approach in regulating environmental pollution from moral and ethical viewpoints. 10
- ii. Do you agree that a uniform emission standard approach for regulating environmental pollution is detrimental to technological advancement in pollution control? Explain your answer with proper reasoning.

- Q4 (a) Discuss the following diagrams and further elaborate on the functioning of Earth as an Ecosystem. 08



- Q4 (b) Discuss the concept of externality with examples. 04

- Q4 (c) Comments on the following statements 08

- Humans have capabilities to augment the flow resources.
- Biodiversity is characterized with stable and resilient ecosystem.
- Natural resource scarcity can be addressed by resource substitution.
- Waste Assimilative capacity of nature is a scarce resource.