BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSc   SEMESTER : V
BRANCH: QEDS   SESSION : MO/2023

SUBJECT: ED327 ENVIRONMENTAL ECONOMICS

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. **The question paper contains 5 questions each of 10 marks and total 50 marks.**
2. **Attempt all questions.**
3. **The missing data, if any, may be assumed suitably.**
4. *Before attempting the question paper, be sure that you have got the correct question paper.*
5. **Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.**

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Q.1 a. Differentiate between an economic and an environmental good with respect to five aspects. **[5+5]** 1

b. If you become the PM of India, would you be more interested in your economic advisers' positive views or their normative views to decide whether to ratify an industrial development project in forest land.

Q.2 Assume an economy of two polluting firms (F1 and F2) and two consumers. F1 has marginal savings function of $MS_1(e) = 5 - e$ and F2 has $MS_2(e) = 8 - 2e$, where e is quantity of emissions. Each of the two consumers have marginal damage of MD(e) = e.   **[4+2+2+2]**   2
  a. Graph the marginal savings functions and the aggregate marginal damage functions.
  b. Find the optimal level of Pigovian fee and pollution level and emissions by each firm.

Q.3 a. Why do economists describe climate as a market failure. How do they differentiate it from other market failures like pollution?   **[6+4]**   3
b. Discuss the role international institutions can play in moving towards a low-carbon global economy.

Q.4 Discuss the optimal resource depletion model where a manufactured capital and a non-renewable input is used in production and obtain and explain the four equations that explain the optimal solution.   **[10]**   4

Q.5(a) Using the Environmental Kuznet's curve, explain (with diagram) the relationship between growth of a country with its impact on environmental quality.   **[5]**   5

Q.5(b) Discuss the concept of original Kuznet's hypothesis that the EKC is based on.   **[5]**   5

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