



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY Btech Mech	Program:B.Tech Mech
Branch Code:MEC	Pattern:2022
Name of Course:Economics for Sustainability	Course Code:MEC222015
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains __02__ page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Question No. 1 Attempt following Question

- 1a) Write a note on sustainable development goals explaining at least three SDGs with their indicators. (6) CO1

Question No. 2 Attempt following Question

- 2a) A family of five receives monthly electricity bill of 100 kWh fifty percent of which comes from coal based plant and remaining from solar. Family travels by car on an average 100 km per month .Car mileage is 20 km per litre? Assuming specific emission factor as 1 kg/kWh for coal and 2.2 kg/litre for petrol calculate the annual carbon footprint per capita for this family accounting for transport and electricity. (6) CO3

Question No. 3 Attempt following Question

- 3a) Explain negative externalities with examples and graph. (8) CO1, CO3

OR

- 3b) Explain positive externalities with examples and graph. (8) CO1, CO3

- 3c) Which negative externality can be reduced by carbon tax. Explain with example and specific data. (8) CO1, CO2, CO3

OR

- 3d) Whether the approach of Arthur Pigou and Ronald Coase was similar or different while tackling environmental problems? (8) CO1, CO2, CO3

Question No. 4 Attempt following Question

- 4a) How Pigouvian taxes can reduce air pollution and traffic congestion .Explain with example (8) CO3

OR

- 4b) Explain with example the role of Pigouvian subsidies in promoting clean energy. (8) CO3

- 4c) What are Pigouvian taxes .Explain with examples their role in addressing environmental issues. (8) CO3

OR

- 4d) Discuss the role of cap-and-trade approach in reducing the carbon emissions. (8) CO3

Question No. 5 Attempt following Question

- 5a) Write a short note on climate change negotiations including Paris agreement. (8) CO1, CO3

OR

- 5b) Discuss the positive and negative externalities associated with public transport. (8) CO1, CO3

- 5c) Write a short note on methodology of field survey to capture ecological and socioeconomic data (8) CO3

OR

- 5d) What was the objective of your field survey. List the questions used in your field survey .What were the significant findings (8) CO3

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