



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

	InSem Examination-II Summer 2024		
	Exam Seat No.:		
	Academic Year: 2023-2024	Semester: IV	
	Name of Programme: S.Y.B.Tech	Pattern: 2022	
	Name of Course: Economics for Sustainability	Course Code: MEC222015	
	Max. Marks: 30	Duration: 1 hour	

	<p>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.</p> <ol style="list-style-type: none">1. This question paper contains 2 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.	
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Question No. 1 Attempt following Question

- a) List any five Sustainable Development goals along with their indicators. (5) CO1

OR

- b) Discuss the role of government in addressing the SDG of health care? (5) CO1

- c) Write a note on Gini coefficient and its relevance in capturing SDG on income equality. (5) CO1

OR

- d) Discuss the ideas to control air pollution in context of SDG of sustainable cities. Highlight the economic implications due to premature deaths and morbidity? (5) CO1

- e) Discuss the issue of health care in India with reference to sustainable development goals (5) CO1

OR

- f) Discuss the role of public transport in sustainable cities with the help of examples and case studies ? (5) CO1

Question No. 2 Attempt following Question

- a) Whether electric cars are environment friendly? Justify your answer with sample carbon footprint calculation. (5) CO2

OR

b) What data should be collected to calculate the carbon footprint of a family? (5) CO2

c) Why do you think the per capita carbon footprint from transport in United States is highest? Justify your answer with sample calculations. (5) CO2

OR

d) Which are the commonly used appliances that generate carbon footprint at home? What data should be collected to calculate the carbon footprint from electrical appliances? (5) CO2

e) Calculate the emission factor for grid electricity using 60 % coal and 40% solar. Assume the plant efficiency as 30% and carbon content in coal as 40 %. Assume complete combustion of coal. Calorific value of coal is 16000 kJ/kg (5) CO2

OR

f) A family of four consumes 1000 kWh annually 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. (5) CO2

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