

UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF ARTS

FOURTH YEAR EXAMINATION IN ARTS SEMESTER 1 – 2022/23

ECN 4175- ENVIRONMENTAL ECONOMICS

Duration: 2 Hours

Instructions

- Answer **Three (03)** Questions ONLY, including compulsory **Question 1** (see details below) and **Two (02)** other questions.
- Use about $\frac{1}{2}$ page for part of **Question 1**, and around 2 pages (each for the other two questions).
- Structure your answer well, write legibly, and provide illustrations from the real world.
- Do not write irrelevant details, stick to what is specifically required in each question. Make your answer logical and factual. The objective is not to give your opinion.
- Question 1 is worth **50 marks**, with sections **10 marks for each**, and Questions 2-5, **25 marks each**

1. Explain any **Five (05)** statements below, incorporating a brief explanation of the underlined phrase:
 - i. Both Thomas Malthus and David Ricardo agreed about environmental constraints being a limiting factor of economic growth but diverged on the underlying explanations.
 - ii. Positive and negative feedback loops triggered by economic activities could impact the environment.
 - iii. Falling oil prices are a positive incentive to shift to renewable energy sources.
 - iv. "Recycling plastics doesn't work. We need to address things further up the plastic value chain, both its economic value and its environmental impact."
 - v. The EU has exported its environmental footprint -WWF (2022)
 - vi. Taxation is a common policy to internalize external costs.
 - vii. Space tourism has gained interest even though it could cause environmental damage.
 - viii. The notion of Willingness to Accept (WTA) is a price proxy for valuing environmental costs.
 - ix. Policy interventions to fix or mitigate global environmental issues should not be applied universally across developed and developing countries.
 - x. The Hedonic Pricing technique was recommended for an environmental value assessment of the market value of a housing project on a southern beachfront.
2. The WWF proposes *Moving from a Linear to a Circular Economy* as the way out of a the rampant economic and environmental standoff. Examine the concepts underlying the above proposal and the remedial measures being proposed.
3. Using welfare analysis techniques, provide a comprehensive graph-based explanation depicting the externalities of gasoline-based automobiles, the socially optimum outcomes, and the remedial policies for internalizing negative externalities. Also, explain how the analysis could be applied to examine electric automobiles.

- 4 Assume that you are asked to conduct a preliminary qualitative cost-benefit study of a proposed extension to the coal-fired power plant at Norochcholai.

The Norochcholai Coal Power Plant (NCP) is in Puttalam District, where the surrounding lagoon provides fishing opportunities to the community as their main livelihood. The Power and Energy Ministry proposes extending the existing plant for more capacity. The plant extension will be built on the outskirts of a residential area. It will emit more pollutants, including more heated water potentially being released into the lagoon. It will require a substantial amount of water for its cooling system. The country needs cheap energy, and thus many argue that additional power is urgently needed. But the community opposes the construction given the potential impact it can have on the environment and their lives.

Prepare a preliminary qualitative report enumerating the potential costs and benefits, including their rationale and relevance, and weigh them against the economic benefits of the project. Write a report in a structured format with appropriate subtitles with the content in point form.

5. Yala National Park (Yala) made headlines in the media recently over the misuse of the park.

Yala comprises a variety of ecosystems: moist monsoon forests, dry monsoon forests, semi-deciduous forests, thorn forests, grasslands, marshes, marine wetlands, and sandy beaches. It is of great ecological value with an abundance of flora and fauna. The area around Yala has hosted several ancient civilizations, important pilgrim sites are situated within and around the park's outskirts. Overall, Yala is of unique economic value through market-based activities, most notably as a sought-after destination for tourists, both locals, and foreigners in large numbers.

Provide a schematic Economic Value Assessment Framework to determine the potential economic value of Yala. First, present a suitable economic value assessment framework and then use the framework to make a value assessment of Yala. Suggest a suitable valuation technique to assess the market value of Yala.
