THE OPEN UNIVERSITY OF SRI LANKA

Faculty of Engineering Technology

Department of Mathematics and Philosophy of Engineering

Bachelor of Technology Honours in Engineering
Bachelor of Software Engineering Honours
Bachelor of Industrial Studies Honours

Final Examination (2021/2022)

MHJ5342/MHJ5372: TECHNOLOGY, SOCIETY AND ENVIRONMENT

(Open-book Examination)

Date: 25th February 2023 (Saturday) **Time: 13:30 hrs. – 17:30 hrs.**

Please answer a total of five questions only.

Start each answer on a separate answer book. Clearly mark your index number on each answer book. Please make sure that you submit five answer books.

Please DO NOT copy directly from a text. If you have to quote, please do so within inverted commas.

Q1.

1. Select an area of technology (e.g., energy technology, building construction, transport, etc.) and critically discuss how the area of technology you select can influence environment and society and the other way round – how environment and society can influence can the selected technology in return. For example, how the technology can influence and change environment and how concerns of environment can change the technology selected in return. A similar discussion should be conducted for technology and society as well. Please use the format below for your answer.

Influence of technology	On environment
	On society
Influence of environment	On technology
Influence of society on	On technology

(100 marks)

Q2.

Write a 600-word essay arguing how the world will look like if we design human activities to meet only legitimate material needs.

(100 marks)

Q3.

Write a 600-word essay discussing,

a) why we remain a technologically backward country, irrespective of the fact that we were a technologically advanced country a long time back. (40 marks)

b) A 4-point plan (i.e., measures to be taken) to achieve technological advancement at least in essential services. (60 marks)

Q4.

"Although in principle many societies accept that women and men should have the same rights, obligations and work opportunities women are often 'invisible' or 'othered'." Discuss this by using various engagements in women's lives.

(100 marks)

Q5.

Argue how the concept of "open systems" allow the illusion of living beings violating the second law of thermodynamics and living beings move from high entropy to low entropy with time. (100 marks)

Q6.

On the 1st of February 2023, the Public Utilities Commission Sri Lanka (PUCSL) rejected the approval for the request by the Ceylon Electricity Board for power cuts till 17 February in order to protect rights of over 331,000 students sitting for the AL examination. Should there be power cuts or not, in your opinion? Critically discuss this case.

(100 marks)

Q7.

There are many approaches of appreciating 'environmental aesthetics'. One such approach is to consider the environment as an aesthetic composition.

(a). How do you define 'composition' in aesthetics? (20 Marks)

(b) Briefly describe following fundamental characteristics of a composition.

(i). Unity

(ii). Balance

(iii). Harmony & contrast

(iv). Rhythm (20 marks)

(c). Mention a place or location familiar to you. It can be an urban city, heritage city, countryside, picturesque beach, mountains, or any other place.

(i). Describe the aesthetics of the composition of the visual environment, explaining prominent visual elements of the composition and characteristics such as rhythm, balance, harmony/contrast, and unity of the composition. You may give examples. (30 marks)

(ii). Describe how you are going to develop this area, without degrading the aesthetics of the visual environment. You may give examples. (30 marks)

Q8.

According to the UN, "the Agenda 2030 provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests".

a) What is meant by Agenda 2030? (20 marks)

b) How many sustainable development goals are introduced under the agenda 2030? (20 marks)

c) Name two sustainable development goals. (20 marks)

d). What will happen if there is zero hunger in the world? Describe. (40 marks)

Q9.

Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels which produces heat-trapping gases.

a) What is the main cause of global warming? (20 marks)

b) What are the IPCC CO2 emission scenarios? Explain using a graph. (30 marks)

c) What actions/activities can the countries take in order to reduce the CO2 emissions? (20 marks)

d) Presume a situation where all fossil fuel reserves come to an end. What can be the situation look like and discuss how the transportation, agriculture and food production will be affected under such a situation. (30 marks)

Q10.

(a) Mention major steps of the current EIA procedures? (10 marks)

(b) Briefly explain each step of scoping process under EIA procedures. (50 marks)

(c) What are the challenges for conducting EIA in Sri Lanka? (10 marks)

(d) What are the key benefits of conducting Strategic Environmental Assessment (SEA)? (10 marks)

(e) Briefly explain key steps of conducting SEA. (20 marks)

- The End -