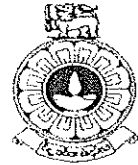


**THE OPEN UNIVERSITY OF SRI LANKA**  
**Faculty of Engineering Technology**  
**Department of Mathematics and Philosophy of Engineering**



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

**Final Examination (2019/2020)**  
**MHJ5533/5563, MPJ 5233/5263: TECHNOLOGY, SOCIETY AND ENVIRONMENT**

*(Open-book Examination)*

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**Date: 03<sup>rd</sup> October 2020 (Saturday)**

**Time: 13:30 am – 17:30 pm**

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Please answer a total of six questions only. Do not use more than 400 words to answer any question.

The questions are grouped in the following manner: Part A: Q1-8; Part B: Q9-11. Please ensure that answers for questions in different parts are given in separate answer books. Clearly mark your index number and the part you are answering on each book.

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

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**Part A**

**Q1.**

“Technology, Society and Environment” is an optional course offered at Level 5. Discuss in detail the advantages you have as students following the course over those who do not follow (hint: think in terms of the role you have to play one day as an engineer, a manager or a policy maker). (100 marks)

**Q2.**

- a) List down four guidelines to identify “illegitimate needs” – i.e. needs that cannot be justified on the grounds of equity and sustainability (hint: use the definition of “legitimate needs”). (30 marks)
- b) Analyse the relationship between “illegitimate needs” and advertising. (70 marks)

**Q3.**

President Rajapaksa after being elected as the 8<sup>th</sup> president of the country in 2019 invited professionals living abroad to come back and help him develop the country. Discuss what needs to be done by the President to create a conducive environment for professionals to come back (hint: refer to the discussion on brain drain). (100 marks)

**Q4.**

- a) Discuss possible health impacts of mobile phone technology. (30 marks)
- b) Explain why it is not easy for the general public to know the exact health impacts of mobile phone technology? (70 marks)

**Q5.**

Critically discuss how approaches to gender issues have evolved in the world by comparing features of each approach. (100 marks)

**Q6.**

Compare the entropy change of an industrial product from the state of raw material to its decay against the entropy change of a life system from birth to death. What are the similarities and what are the differences? (100 marks)

**Q7.**

By taking into consideration the social and environmental issues faced by the contemporary world, imagine and discuss ten key features of a new world that would address those issues you had in mind. (100 marks)

**Q8.**

“Covid 19 has exposed the vulnerabilities/weaknesses of the global market”. Discuss. (100 marks)

**Part B**

**Q9.**

Awareness and education on Climate change and its detrimental effects is of important in order to have a proper balance between the technology and the ecosystem.

- a) What is an ecosystem? (10 marks)
- b) What is the main reason behind the climate catastrophe? (10 marks)

- c) Briefly explain the greenhouse gas effect using figures and giving examples of few greenhouse gases. (20 marks)
- d) What are the scenarios developed by IPCC to represent the possible major trends of the future of humankind by 2100? Explain using figures. (40 marks)
- e) Give your opinion in five sentences on “Carbon dioxide and climate crisis” in relation to the COVID-19 pandemic situation. (20 marks)

**Q10.**

Sustainable development became a passion with the Brundtland Commission, highlighting the need to have new ways to measure and assess progress towards development in 1987.

- a) What is sustainable development? (10 marks)
- b) What is an ecological debt day of a year? Explain using figures and examples. (30 marks)
- c) Name three processes for sustainable development. (30 marks)
- d) What are the United Nations Sustainable Development goals? Name five goals. (15 marks)
- e) There is a critique on the sustainable development goals. Please mention two of them. (15 marks)

**Q11.**

Mention the key steps of conducting an EIA using a flow chart and briefly describe the Scoping process under EIA procedures. (100 marks)

- The End -

