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)

Date: 03rd October 2020 (Saturday) **Time: 13:30 am – 17:30 pm**

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.

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 8th 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 floor chart and briefly describe the Scoping process under EIA procedures. (100 marks)

- The End -