

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

Final Examination (2016/2017)
MPJ5233/5263: TECHNOLOGY, SOCIETY AND ENVIRONMENT

(Open-book Examination)

Date: 11th November 2017 (Saturday)

Time: 9:30 am – 13:30 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: Q1-4; Part B: Q5-Q6; Part C: Q7-Q11. 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.

- i) Discuss the main reason for Climate Change? (Marks 20)
- ii) What are the different scenarios introduced by The Intergovernmental Panel on Climate Change (IPCC) that describe degrees of impact on climate. (Marks 30)
- iii) What are the solutions for the Climate Change catastrophe? Discuss. (Marks 50)

Q2.

By paying your attention to possible risk factors of visual pollution, briefly discuss how engineers could control visual pollution generated by human-made structures. (Marks 100)

Q3.

Discuss in brief the adverse health effects of mobile phone use and suggest ways in which one could reduce the exposure to radiofrequency energy emitted by mobile phones. (Marks 100)

Q4.

i) Define the term "Environmental Impact Assessment (EIA)". (Marks 20)

ii) Select a proposed or an ongoing development project in Sri Lanka and identify chemical, biological, environmental and social impacts caused by the project. (Marks 60)

iii) Propose remedial action to minimize adverse impacts of the project selected above. (Marks 20)

Part B

Q5.

"Gender identity and gender relations have not had any impact on Sri Lankan technology education". Discuss. (Marks 100)

Q6.

Compare and contrast the Women in Development approach (WID) and the Gender and Development (GAD) approach. (Marks 100)

Part C

Q7.

i) Discuss in detail three barriers one will face when one attempts to build an environmentally sustainable world driven by renewable energy technologies. (Marks 50)

ii) Describe in terms of entropy how fossil fuel usage affects environment? (Marks 50)

Q8.

- i) Are resources on earth sufficient to fulfill needs of human beings? Discuss (Marks 50)
- ii) Describe three factors you have to take into consideration if you use technology to find solutions to problems faced by human beings. (Marks 50)

Q9.

Formulate a detailed plan to strengthen human resources for research and development in Sri Lanka. (Marks 100)

Q10.

- i) Define the term "sustainable development". (Marks 20)
- ii) By taking examples discuss in detail the role of engineers in building a sustainably developed world. (Marks 80)

Q11.

Number of patents obtained by an individual or by an institution is considered as a measurement of individual or an institutional progress. Patents, however, are seen as a barrier to technological development by groups such as "Access to Knowledge Movement". Develop a detailed argument against patents. (Marks 100)