



THE OPEN UNIVERSITY OF SRI LANKA  
BACHELOR OF TECHNOLOGY – LEVEL 05  
FINAL EXAMINATION – 2006

MPJ5233 – TECHNOLOGY, SOCIETY & ENVIRONMENT

250

DURATION: FOUR HOURS (ESSAY TYPE PAPER)

OPEN BOOK EXAMINATION

Date: 4<sup>th</sup> April 2007

Time: 13.30 hr. - 17.30 hr.

The questions are grouped in the following manner:

Part A : Q1 – Q4

Part B : Q5 – Q9

Part C : Q10 and Q11

**Please ensure that answers for questions in different parts are given in separate books.**

**Mark your Index Number and the Part you are answering on each book.**

**Please answer a total of six questions, choosing not more than three from any single part.**

**Do not use more than 300 words to answer any question.**

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

**Part A**

1. It is said that solar panels made of photo-electric cells are not a genuinely renewable source of energy. Why do you think this may be correct? Mention at least one source of energy transformation which may be truly renewable. Argue your case to why this may be so.
2. You have a close friend aged about 20 years, who is constantly on her mobile phone. In fact you can hardly talk to her for five minutes before her mobile starts ringing. Advise her, giving some guidelines as to how best she should continue to use her mobile phone. Try to convince her as to your advice.
3. It is a popular belief that beauty and ugliness are completely relative terms, that is; 'your beauty may be my ugliness'. Write a case against such a view, arguing as to why beauty is not a simply relative phenomenon.
4. You are to buy a lorry and transport goods regularly from Galle to Colombo. What type of project evaluation technique would you use, and why? You are to make a decision as to the construction of a new railway line between the centres of Colombo to the Katunayake airport. As an alternative you can also build a super highway between the two points. Choose one of the options, giving reasons for your choice.

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## **Part B**

5. a) What is the need in Sri Lanka to ensure that the major development proposals be subjected to an examination? *You need to explain the philosophy behind Environmental Impact Assessment (EIA) process.*  
b) In Sri Lanka the EIA process is mandatory for 'Prescribed Projects'. How do you define a "Prescribed Project"?  
c) It is said that public participation is important in an EIA study. Explain the necessity to consult the local communities.
6. Assume that there is a proposal to build an agro-chemical processing plant taking up about one acre, in the vicinity of the Open University at Nawala.
  - a) Explain the possible impacts to the existing biological, physical and social structure during the constructional phase of the project.
  - b) Assuming that you are a member of the Project Approving Agency (PAA), draft a suitable Terms of Reference (TOR) for the project to be submitted to the Project Proponent (PP)
  - c) Give possible Organizations/Authorities in the PAA of the above project.
7. The population density of large carnivores is always very small compared to the population density of herbivores occupying the same ecosystem. Explain by giving examples why there are pyramids of energy, biomass and number of individuals in the trophic levels of an ecosystem.
8. a) Explain giving examples how ecological succession results in ecosystem development and allows one species to replace another.  
b) What do you mean by carbon fixation or nitrogen fixation? Why is it important to human life that carbon and nitrogen be "fixed"?
9. Describe the major categories and sources of air pollution giving examples. Evaluate the dangers of stratospheric ozone depletion. Explain how air pollution damages human health and balance in the ecosystem

## **Part C**

10. 'Intelligent' systems such as life are able to locally reduce their entropy. Explain as to how this was possible; and state as to what happens to the entropy balance in the earth's ecosphere.  
Global environmental problems are disrupting the earth's ecosphere, what in this case, do you think happens to the entropy of the Ecosphere?
11. Comment on the Aesthetics of the Open University, its buildings, ground plan and Vegetation, suggesting any improvements.