

**THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
BACHELOR OF INDUSTRIAL STUDIES (INDUSTRIAL MANAGEMENT)**



FINAL EXAMINATION– 2011/2012

MEI6350 – SUSTAINABLE INDUSTRIAL DEVELOPMENT (LEVEL 06)

**DATE : 18th MARCH 2012
TIME : 1400 HRS – 1700 HRS
DURATION : THREE HOURS**

ANSWER FIVE QUESTIONS ONLY. ALL QUESTIONS CARRY EQUAL MARKS.

- (1) (i) “The Industrial Revolution was not merely a matter of technology, it was an instrument of social change.” Discuss this statement. (10 marks)
- (ii) Why are coal, petroleum and natural gas called “fossil fuels”? (05 marks)
- (iii) Discuss merits and demerits of nuclear energy as a replacement for fossil fuel energy from sustainable development point of view. (05 marks)
- (2) Renewable energy sources are often viewed as inexhaustible, non-depletable and essentially "emissions-free," and therefore are highly attractive as alternatives to fossil and nuclear energy. Discuss the benefits and challenges of utilizing renewable sources to fulfill the part of the country's energy requirement. (20 marks)
- (3) (i) Explain what do you understand by
- (a) social sustainability,
(b) economic sustainability and
(c) environmental sustainability (12 marks)
- (ii) “Any development programme adopted by a country is considered sustainable only if the said programme is economically, socially and environmentally sustainable.” Do you agree with the above statement?. Give your reasons. (08 marks)
- (4) (i) What is Kyoto protocol?. What further steps or regulations should be taken for Sri Lanka to adhere to CO₂ emission guidelines outlined in the Kyoto Protocol?. (10 marks)
- (ii) Discuss the applications of 3R (Reduce, Reuse, Recycle) solutions for solid waste management. (10 marks)

- (5) (i) Why organizations should consider adopting environmental management accounting as a part of their accounting system?. Explain. (08 marks)
- (ii) ISO 14001 is a voluntary International Standard that establishes the requirements for an environmental management system (EMS). One of the phases included in EMS programme is implementation and operation. Discuss the important elements that should be considered in this phase. (12 marks)
- (6) (i) What are the indicators that can be used to assess the profitability of environmental projects?. Explain their significance related to an environmental project. (10 marks)
- (ii) Dematerialization is a widely accepted concept that lies at the core of any successful manufacturing model. These days, with skyrocketing material and energy costs, the concept is more important than ever. Discuss the possibilities of implementing the dematerialization concept for local industry in Sri Lanka. (10 marks)
- (7) (i). Corporate Social Responsibility (CSR) is a term used to describe the concept of an organisation taking responsibility for the social and environmental impact of their business activities. There are many reasons why companies implement CSR programmes. Discuss the reasons briefly. (10 marks)
- (ii) Explain why ecological back pack is important in process analysis. (10 marks)
- (8) (i) Multiple stakeholder participation in any eco-labeling programme is important to its overall impact and success. Why?. Discuss your answer. (10 marks)
- (ii) How does Nanotechnology differ from Biotechnology?. Discuss the advantages and disadvantages of Nanotechnology. (10 marks)

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