

Task 5B:

For the following questions to assess students achievement through the course on Emerging Technologies and Issues, discuss the following;

1. What are the COs and POs being address by each question?
2. What is the taxonomy levels associated with each question?
3. Is this set of questions effective in determining the COs and POs

QUESTION 1

- (a) In the context of municipal solid waste disposal, explain the role of engineers in ensuring sustainable development. (8 marks)
- (b) The Ministry of Science, Technology and Innovation has identified biotechnology, nanotechnology and advanced processes as priority research areas. Discuss, with specific examples how these priority areas are applied in Civil Engineering. (12 marks)

QUESTION 2

- (a) Explain the meaning of Climate Change. (8 marks)
- (b) The global community is currently concern with the rise in sea levels. Identify and discuss three factors that contribute to this phenomenon. (12 marks)

QUESTION 3

- (a) The Klang Valley is expected to experience water shortage in the near future due to increase in demand and reduced availability of suitable water resources. Discuss how this problem can be overcome from;
- i. management perspective
 - ii. technology development
 - iii. consumer awareness
- (12 marks)
- (b) In overcoming the increase in conventional fuel prices, discuss how the concept of waste to wealth can be applied to reduce energy costs for the sewerage industry. (8 marks)

QUESTION 4

- (a) You have been put in charge of managing construction for a consulting company. In view of the current increase in operating costs, you are given the specific task of reducing costs that are due to wastes on construction sites. Develop a plan that is based on the Waste Hierarchy to reduce the amount of waste generated on construction sites. Indicate the roles of contractor, consultant and clients in implementing the plan.

(20 marks)

QUESTION 5

- (a) Briefly explain the Kyoto Protocol?

(4 marks)

- (b) State and briefly explain two technologies that will contribute towards the achievement of the Kyoto Protocol.

(6 marks)

- (b) A wastewater treatment plant is discharging effluent that is well above the standards set by the Department of environment. Propose two enhancement technologies that will enable the treatment processes at the plant to be improved.

(10 marks)

END OF QUESTION PAPER