UNIVERSITY EXAMINATIONS: 2013/2014

EXAMINATION FOR THE MASTER OF SCIENCE IN INFORMATION SYSTEMS MANAGEMENT

MISM 5304 SYSTEMS DYNAMICS MODELLING

DATE: AUGUST, 2014   **TIME: 2 HOURS**

INSTRUCTIONS: Answer Question One and Any Other Two Questions

QUESTION ONE [20 MARKS]

(i)   From a Systems thinking perspective what is a system?   (2 Marks)

(ii)   What is the difference between the systems approach and Systems Thinking?   (4 Marks)

(iii)   Explain what you understand by system dynamics?   (8 Marks)

(iv)   Explain the following three terms as applied to Simulation modelling.

        a) Simulation as software engineering   (2 Marks)

        b) Simulation as a process of organisational change   (2 Marks)

        c) Simulation as a facilitation   (2 Marks)

QUESTION TWO [15 MARKS]

SD is based on servomechanism theory and other systems analysis techniques using digital computers to solve large numbers of differential equations in short period of time. Discuss.   (15 Marks)

QUESTION THREE [15 MARKS]

What is a balancing loop how is it different from a feedback loop. Illustrate your answers examples.

    (15 Marks)

QUESTION FOUR [15 MARKS]

Using the **illustration** below explain the system dynamics modelling process?   (15 Marks)