Course Code:	CIT412
Course Title:	Modelling and Simulation
Time Allowed:	2.5 Hours
Credits	3
Instruction:	Answer Question one (1) (22 marks) and any other four (4) (12 marks)

Questions

1) (a) Describe the following terms: (i) Activity (ii) System (iii) Simulation (iv) Delay (v) Model

(5marks)

b) Differentiate between analytical models and numerical models **(3marks)**

c) Define congestion in a queuing system, and identify its major characteristics.

Congestion = **(3marks)**
Characteristics = **(2marks)**

d) Explain the properties of random numbers **(6marks)**
e). Discuss Bayesian inference **(3marks)**

2) (a) Clarify on Time series input model **(4marks)**

(b) Explain the steps in simulation study **(5marks)**

(c) Outline inventory system **(3marks)**

3) (a) Differentiate between terminating and non-terminating simulation **(5marks)**

3(b) Distinguish between endogenous and exogenous event **(3 marks)**

3(c) Separate between random numbers and random variates **(4 marks)**

4) (a) What do you understand by model verification and validation? **(3marks)**

(b) Articulate briefly the various method of validating input model **(6marks)**

4c) What are the general procedure for constructing and analyzing queuing models? **(3marks)**