

**OLABISI ONABANJO UNIVERSITY, AGO-IWOYE,**  
**FACULTY OF SCIENCE**  
**DEPT. OF MATHEMATICAL SCIENCES**  
**2018/2019 B.Sc HARM. SEMESTER EXAMINATION**

**Course Code: CMP 403**

**Time: 2 Hours**

**Course Title: System Modeling and Simulation**

**Instruction: Answer any FOUR questions**

1. (a) Carefully analyze the steps involved in developing a system simulation.  
(b) List the benefits of a system simulation.  
(c) Draw a simulation study schematic.
2. (a) List and explain all classes of models.  
(b) With appropriate flow chart, what are the model methodologies?  
(c) Is modeling necessary in any system? Justify your answer appropriately.
3. Barrister Michael Majekodunmi is a solicitor for a client at the Ijebu Igbo High Court of Justice.
  - i. His client was a convicted smuggler that was reported to have jumped the fence of 12.31m to avoid arrest.
  - ii. His client claimed that, had been he is the person that jumped the fence; he would have injured himself severely owing to a personal leg problem previously.Use your knowledge of system modeling to advise the barrister appropriately.
4. Federal Government of Nigeria requires the service of an expert in systems modeling for the upgrading of Federal Polytechnic to University status. Prepare your academic brief to NUC for befitting academic programme of the new universities.
5. (a) Define population growth model.  
(b) Assuming that Tai Solarin University of Education, Ijebu-Ode is a community, what are the parameters required for population models? Design the model in line with these parameters.
6. Distinguish the difference(s) between system modeling and simulation using real life

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