LAGOS CITY POLYTECHNIC, IKEJA
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
2016/2017 FIRST SEMESTER EXAMINATION

COURSE TITLE: OPERATIONS RESEARCH II NO OF QUESTION: 6
COURSE CODE: STA 411 TIME: ALLOWED: 2HRS
FOR WHOM: HND II CS F/T
INSTRUCTIONS: Answer any four Questions

1. Explain the following terms:
   (a) Queue

   (b) Queuing theory

2. What are the elements of a queuing system?

3. In a simple queue an average arrival rate of 15 items per hour has been observed and the service facility can on average deal with 20 items per hour.

   Calculate the following:
   (a) The traffic intensity

   (b) The average number of items in the queue including the times when there is no queue

   (c) The average number of items in the queue when there is a queue

   (d) The average number of items in the system.

   (e) The average time in the queue.

   (f) The average time in the system

4. What is Simulation? And why is simulation used?

5. What types of variables are found in simulation modes?

6. What are the steps for constructing a simulation model?