OLABISI ONABANJO UNIVERSITY, FACULTY OF LAW

COURSE CODE: PRL 305. COURSE TITLE: SCIENTIFIC PROGRAMMING LANGUAGE

SESSION: 2013/2014. HARMATTAN SEMESTER

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS IN ALL

TIME ALLOWED: 2½ HOURS

1. Differentiate between the following pairs:

   i. Primary and Secondary data
   ii. Batch Processing and Real time processing
   iii. Master and Transaction file
   iv. Physical and Logical file
   v. Binary and Sequential search

2. a. Describe the Data Processing errors and proffer solution to each

   b. Convert the following to their decimal equivalent: (i)372_8, (ii). 24.6_8

3. a. State the rules guiding developing a binary tree from an array. Given an array with the following elements; consider the list of numbers below and build them into a heap:
   44, 30, 50, 22, 60, 55, 77, 55.

   b. Convert the following to their respective hexadecimal: (i). 423_{10} (ii). 214_{10}

4. a. *Design an algorithm to search for an item in a linear array using Binary Search.*

   b. Describe the stages involved in electronic data processing.

   c. List three (3) ways in which file can be organized.

5. a. Design an Algorithm for Quick Sort and illustrate with example.

   b. There are several ways or methods of organizing computer based data files. The choice of methods depends on the objectives of the system designer and involves trade off in terms of cost, processing, speeds and accessibility of information. Highlight these objectives.

6. a. Describe any three (3) file processing activities

   b. Enumerate the criteria for selecting sorting methods.