

OLABISI ONABANJO UNIVERSITY, FACULTY OF LAW

COURSE CODE: PRL 305. COURSE TITLE: SCIENTIFIC PROGRAMMING
LANGUAGE. SESSION: 2014/2015. HARMATTAN SEMESTER

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

TIME ALLOWED: 2½ HOURS

1. a. Explain the three main problems with the Traditional File System
b. Find the value of the following binary numbers in Unsigned, Sign Magnitude, One's Complement, Two's Complement i. 100110 ii. 0011 iii. 1000 iv. 0000
c. Convert to base ten: i. $0.3B_{16}$ ii. 0.1100_2 iii. 247.27_8
2. a. What is file Organisation?
b. What is the relationship between File Organisation and Access Method?
c. What are the important issues to consider when selecting a file organisation?
3. a. List the different file organisation methods.
b. Explain each of the listed file organization methods. In what situation will a particular file access method be useful ?
c. Outline the shortfalls of each of the file organisation.
4. a. What is the difference between Linear search and Binary Search
b. Consider the array 45, 67, 12, 34, 25, 39: Use Bubble sort Algorithm to sort the set of numbers
c. Convert the following decimal number to their binary, octal and hexadecimal equivalent:
i. 846569 ii. 3364
5. a. i. Add 1022_5 and 2121_5 ii. Subtract 3032_5 and 1004_5 iii. Multiply 234_9 and 25_9 iv. Divide 221_5 by 5
b. Write short notes on any three (3) file processing activities
c. Describe Data Processing errors and solution with example *Transcription error.*
6. a. Given an array of 6 elements: 15, 19, 10, 7, 17, 16, Sort the numbers in ascending order using heap.
b. Differentiate between Master and Transaction File