TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean

Full Marks: 40
Time: 2 hrs.

BIM / Fourth Semester / IT 218: Data Structure and Algorithm with JAVA

2015

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions: ***[10 × 1 = 10]***

1. What is theta notation?
2. What is a self adjusting data structure?
3. What is priority queue?
4. What do you mean by tail recursion?
5. Define expression tree.
6. What do you mean by best case complexity of an algorithm?
7. What is a linear probing?
8. What is topological sorting?
9. What are the elementary sorting algorithms?
10. What is Binary tree?

Group "B"

Exercise Problems: ***[5 × 4 = 20]***

11. Write a function in Java to sort integers. (Use any algorithm)
12. Write a program in Java to create a linear linked list.
13. Write a program in Java to create stack (push operation only).
14. Write a program in Java to store number in array using concept of hashing.
15. Create heap tree from given data: 20, 22, 33, 44, 12, 15, 18, 19, 20.

Group "C"

Comprehensive Answer Questions: ***[2 × 5 = 10]***

16. Define graph. Write Dijkstra's algorithm to find shortest path in graph with example.
17. Explain B-tree of order 3 with example.