TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
2016

Full Marks: 40
Time: 2 hrs.

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

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

Group "A"

Brief Answer Questions: $[10 \times 1 = 10]$

1. What is data structure?
2. Why is Big Oh notation used?
3. Why are linked lists preferred over arrays?
4. What is linear queue?
5. Define activation record.
6. What is Binary tree?
7. What is B tree?
8. List out the methods that can be used to represent graph in memory.
9. What is sorting?
10. For which purpose Kruskal's algorithm is used?

Group "B"

Exercise Problems: $[5 \times 4 = 20]$

11. Write a Java function to insert element into queue.
12. Write a Java function to delete the last node from a circular linked list.
13. Write a program in Java to display fourth element of the Fabonacci series.
14. Insert the following data in a Hash Table, where the table size is 10:

    22, 18, 37, 88, 50, 47, 69, 72

    (Use any suitable technique to resolve hash collision)

15. Show the steps to sort given data using Merge Sort:

    36, 48, 23, 59, 68, 44, 97, 99, 91, 18, 33

Group "C"

Comprehensive Answer Questions: $[2 \times 5 = 10]$

16. Write steps to insert key into B tree.
17. How a node of a binary tree can be deleted? Explain with examples.

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