3. Attempt any **Two** of the following questions. **6 x 2 = 12**

(a) Define Dynamic programming and its process to solve a problem with one example.

(b) Explain 0/1 Knapsack problem.

(c) Write difference between greedy method and dynamic programming.

4. Attempt any **Two** of the following questions: **6 x 2 = 12**

(a) Explain the Traversal method in graph.

(b) Explain Dijkstra's Algorithm to solve a problem.

(c) Explain the method to represent a graph in memory.

5. Attempt any **Two** of the following questions. **6 x 2 = 12**

(a) Explain NP-Hard and NP-complete problems.

(b) Explain one algorithm for string matching.

(c) Explain the term NP completeness and Non Deterministic by giving suitable example.

Roll No. | | | | | | | | | | |

B.C.A.

FIFTH SEMESTER EXAMINATION, 2017-18

ALGORITHM ANALYSIS AND DESIGN

Time : **3 Hours** Max. Marks : **60**

Note : **(i)** Attempt **ALL** questions.
(ii) Choices are given in each question set.

1. Attempt any **Four** of the following questions: **3 x 4 = 12**

(a) Explain the significance of asymptotic Notation in complexity analysis.

(b) What do you mean by growth functions?

(c) Explain the best case, worst case and average case of quick sort.

(d) Write the Master method of complexity analysis of recursive function.

(e) Do the analysis of selection sort in terms of Best case and worst case.

(f) Write the algorithm of Fibonacci series using recursive function.

2. Attempt any **Four** of the following questions: **3 x 4 = 12**

(a) Define the divide and conquer also algorithm.

(b) Explain the use of Hash function in generation of Hash table.

(c) Explain the linear probing of collision resolution technique in Hash table.

(d) What do you mean by sorting in linear time?

(e) Explains how counting sort is use for sorting a list of numbers.

(f) Write a algorithm of Heap sort.