

Hall Ticket Number :

R-11 / R-13

Code: 1G143

II B.Tech. II Semester Supplementary Examinations May 2018

Design and Analysis of Algorithms

(Common to CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks each**)

1. a) Elaborate on asymptotic notations with examples. 7M
b) What is weighting rule? Discuss about the union algorithm using weighting rule. 7M
2. a) Write the pseudo code for finding the position of the largest element in the given array of N numbers using divide and conquer. 7M
b) Explain merge sort problem using divide and conquer 7M
3. a) Demonstrate with an example Prim's and Kruskal's algorithm 7M
b) Demonstrate with an example how to solve the given knapsack problem using Greedy technique. $n = 3$ $m = 20$ $(p_1, p_2, p_3) = (25, 24, 15)$ $(w_1, w_2, w_3) = (18, 15, 10)$ 7M
4. a) Dynamic programming is best compared to the greedy method. Justify the statement. Explain all pairs shortest path problem. 7M
b) Explain how travelling person problem could be solved using dynamic programming method. Explain with sample graph. 7M
5. a) Write the control abstraction for backtracking method. How the 8 queens' problem could be solved using backtracking method? Discuss. 7M
b) Let $S = \{5, 7, 10, 12, 15, 18, 20\}$ and $m=35$. Find all the possible subsets of S whose sum is equivalent to m . Draw the portion of state space tree for this problem. 7M
6. a) Give an algorithm to identify articulation points and to construct biconnected components. Explain with an example. 7M
b) Explain in detail DFS graph traversal. 7M
7. a) Explain with an algorithm as to how 0/1 knapsack problem is solved using branch and bound technique. 7M
b) Compare and contrast LC-BB and FIFO BB 7M
8. a) Write and explain Cook's theorem. 7M
b) Explain in detail NP hard problems. 7M

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Code: 1G145

II B.Tech. II Semester Supplementary Examinations May 2018

Object Oriented Programming through Java

(Common to CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) Explain about type conversion and casting in java
b) Write a program to illustrate the usage of the following methods of the following methods of StringBuffer class.
setCharAt(), append(), getChars()
2. a) Define inheritance. Explain about the forms of inheritance.
b) Explain about abstract class with an example program.
3. a) How can we achieve multiple inheritances in java? Write example program.
b) Explain the importance of final in java programming.
4. a) Distinguish between classes and interface.
b) Why we need to set the CLASSPATH? Explain.
5. a) What is an exception? Distinguish between built – in and user – defined exceptions.
b) Discuss about the thread priorities.
6. a) What is applet? Explain life cycle of an applet.
b) Explain boarder and grid layout manager types with the help of example programs.
7. Explain the steps involved in creating JCheckBox, JRadioButton, JButton, JLabel.
8. Write short notes on the following:
(a) Datagrams.
(b) URL connection.
(c) Java.net package.
