

Roll No.-----

176081

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PGIIS-881 B-19
M.C.A. III Semester Degree Examination
Computer Science
Cloud Computing
Paper : MCA-36T
(New)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer any **five** questions
 2. All questions carry **equal** marks.
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1. a) Explain the structure of the three delivery models and its services. (8)
b) What are the cloud vulnerabilities? Explain in detail. (8)
 2. a) Explain the cloud computing at Amazon. (8)
b) Explain in brief, the software Licensing and user experience. (8)
 3. a) What are the challenges for cloud computing? Explain. (8)
b) Explain AND split, XOR split, XOR merge and Multiple merge workflow patterns.(8)
 4. a) Discuss the High-performance computing on a cloud. (8)
b) Explain social computing, digital content and cloud computing. (8)
 5. a) Explain layering and virtualization. (8)
b) With the help of diagram, explain the traditional VMs and a hybrid VM. (8)
 6. a) Explain the Hardware support for virtualization. (8)
b) Describe security isolation. (8)
 7. a) Describe the policies and mechanisms for resource management. (8)
b) Explain the Fair queuing scheduling. (8)

8. Write notes on any two of the following

(2×8=16)

- a) Cloud computing the Google perspective.
 - b) Clouds for Science and Engineering.
 - c) Virtual Machine Monitor(VMM)
 - d) Applications of control theory to task scheduling.
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Roll No. _____

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PGIIS-880 B-19
M.C.A. III Semester Degree Examination
COMPUTER SCIENCE
Design and Analysis of Algorithms
Paper : MCA 3.4
(Old)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer any **Five** questions
2. All questions carry **equal** marks.

1. a) Discuss the important problem types and fundamental data structure. (8)
b) Explain the general plan of mathematical analysis of non recursive algorithm with suitable example. (8)
2. a) Explain the mathematical analysis of factorial of a number using recursive algorithm. (8)
b) Find the time complexity of following recurrence relations. (8)
i) $2T(n/2)+n$ ii) $T(n/2)+c$
3. a) Explain the Brute force algorithm for sequential search with example and derive its time complexity. (8)
b) Explain decrease and conquer approach. (8)
4. a) Explain dynamic programming with Floyd's algorithm. (8)
b) What is Knapsack problem? Find the solution for Knapsack problem using greedy method for $n=3$, capacity $m=20$, values= $\{25,24,15\}$ and weights= $\{18,15,10\}$ respectively. (8)
5. a) What is transitive closure? Write Warshall's algorithm to compute transitive closure. Find its efficiency. (8)
b) Explain the class P and NP complete problem. (8)

6. a) Define Huffman trees. Construct a Huffman code for the following data:

Character	A	B	C	D	E	-
Probability	0.5	0.35	0.5	0.1	0.4	0.2

Encode DAD_CBE using Huffman encoding. (8)

- b) What is Job sequencing with deadlines problem? Find the optimal solution using greedy algorithm for the data: $n = 5$, profits = {10,3,33,11,40} and deadlines = {3,1,1,2,2}. (8)

7. a) Explain backtracking with suitable example. (8)

- b) Explain Discrete Fourier transform and list its applications. (8)

8. Write notes on any **Two** of the following (2×8=16)

- a) Asymptotic notations.
b) Strassen matrix multiplication using divide and conquer strategy.
c) Computing binomial coefficient using dynamic programming.
d) Dijkstra's algorithm.