Pre. Ph.D. Course Work (2017 Course) : (Computer Engg) :
SUMMER - 2019

SUBJECT: PAPER – II: RECENT ADVANCES IN COMPUTER ENGINEERING

Day : Wednesday
Date : 24/04/2019

Time: 10.00 AM TO 1.00 PM
Max. Marks: 100

S-2019-5362

N.B.:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.

Q.1 Develop an algorithm for binary search. Validate the algorithm with a suitable data set. **[10]**

OR

Explain the difference between insertion sort and selection sort with an example. What is the time complexity of these algorithms? Justify.

Q.2 What is the need of page replacement? Consider the following reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. **[10]**
Find the number of page faults with FIFO, optimal and LRU with four frames which are empty initially? Which algorithm gives the minimum number of page faults?

OR

What is critical section problem in operating system? Discuss Peterson's solutions for critical section problem. What are the limitations of this solution and how it can be solved?

Q.3 What is VLIW Architecture? Compare EPtc architecture with super scalar architecture. **[10]**

OR

What is cache memory? Discuss in detail cache memory optimization.

Q.4 Give an algorithm for solving 0/1 knapsack using dynamic programming compute time complexity. **[10]**

OR

Explain in detail computational model for parallel computing algorithm.

Q.5 Design object oriented analysis with various CASE tools for development of college management system. **[10]**

OR

Create various UML diagram for disaster management system for sky scrappers.

P.T.O.

Q.6 Compare and contrast sharding and replication. Explain the advantages and limitations of sharding and replication. **[10]**

OR

With the help of neat diagram, explain the cloud computing reference model. List and explain the various cloud computing platforms and techniques.

Q.7 Discuss in detail the virtualization on block level and on file level with suitable example. **[10]**

OR

Explain the SAN security architecture also discuss the protection strategies implemented in various security zone.

Q.8 Discuss with suitable example a back propagation algorithm for a multilayer network. **[10]**

OR

How support vector machine can be used to find optimal hyper plane to classify linearly separable data. Give suitable example.

Q.9 Explain the characteristics that affects QoS provisioning in Ad-hoc wireless networks. **[10]**

OR

Explain how tunneling works in general and especially for mobile IP. Discuss its advantages and disadvantages.

Q.10 Discuss in detail the various types of views that are employed in computer graphics systems. **[10]**

OR

Discuss the Bresenham's rasterization algorithm. How is it advantages when compared to other existing methods? Describe.

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