R14

Code: 4P3114

M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Computer Architecture
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT–I

1. a) Explain various system's attributes to performance.   6M
    b) Explain the Flynn's classification of computer architectures.   6M

OR

2. a) Explain in detail about Conditions of parallelism?   6M
    b) Discuss the architectural evolution of computer systems   6M

UNIT–II

3. a) Where can be a block placed in a cache? Discuss the three categories of cache organization.   8M
    b) How to compute average memory access time?   4M

OR

4. With suitable examples explain any four mechanisms to improve cache memory performance   12M

UNIT–III

5. a) Discuss the usage of the following buffers
        (i) sequential buffer   (ii)target buffer   (iii)loop buffer   8M
    b) What is a reservation table? Discuss its need in a pipeline.   4M

OR

6. a) What are the possible hazards in an instruction pipeline? Quote examples.   6M
    b) Does a pipeline improve system's performance? Justify your answer.   6M

UNIT–IV

7. a) Compare and contrast distributed-memory model with shared memory model.   6M
    b) Describe the distributed control on the CM-5 with concurrent user partitions and I/O activities.   6M

OR

8. a) Describe the parallel architecture built into the Connection Machine-2.   5M
    b) Give the network architecture of the CM-5.   7M

UNIT–V

9. a) Make a comparison of instruction level parallelism and structural parallelism.   8M
    b) Explain any one parallel algorithm in detail.   4M

OR

10. How to improve performance of a system with parallel processing? Explain with illustrations. Give a brief overview of trends in parallel systems.   12M
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M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Computer Networks
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT–I

1. a) With an example, explain the need for connection-oriented services.   6M

   b) Which are the important types of delays in computer networks? Discuss in detail the propagation and transmission delay.   6M

OR

2. a) Discuss the principle of working of circuit switched networks.   6M

   b) Summarize the functions of various layers in 5-layer TCP/IP model.   6M

UNIT–II

3. a) With neat diagrams show the connections in different layers of protocols.   6M

   b) Discuss the working of any one type of check summing method for error detection and correction in data link layer.   6M

OR

4. a) Discuss the working of PSK and QAM.   6M

   b) Compare the working of various types of multiple access protocols used in DLL.   6M

UNIT–III

5. a) Write the purpose of the following:
      i.   Dijkstra's algorithm
      ii.   Flood routing   6M

   b) Write a note on IP addressing techniques.   6M

OR

6. a) For the network given below, find the least-cost path between the two routers R1 and R7 using Dijkstra's algorithm.

                6M
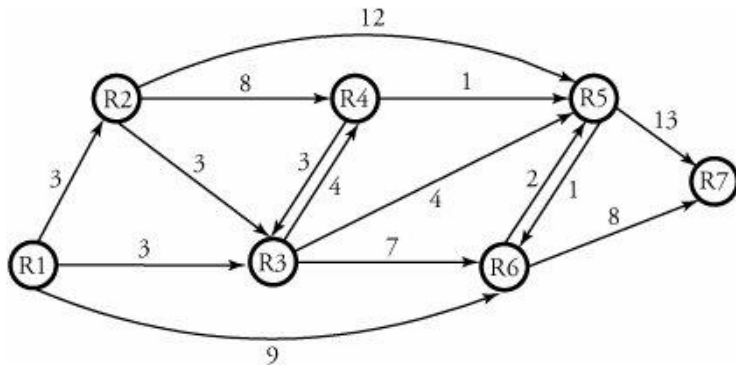
   b) Write IPv4 datagram format, and discuss the purpose of various fields.   6M

UNIT–IV

7. a) Write TCP segment structure, and discuss the process of three-way handshake in TCP.   6M

   b) Write the purpose of DNS. Illustrate with an example the working of DNS.   6M

OR

8. a) Define Congestion. Discuss any one mechanism used in TCP for congestion control.   6M

   b) Write the purpose of FTP. Discuss the working of the protocol.   6M

UNIT–V

9. a) What is WiFi? With a diagram, explain how the WiFi networks are connected to the Internet?   6M

   b) Discuss in detail the working of the DSDV routing protocol in Mobile Adhoc networks.   6M

OR

10. a) Discuss connectivity and frequency reuse in cellular networks.   6M

    b) Write a typical wireless sensor node, and highlight the function of various components.   6M

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Code: 4P3113

M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Databases
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT-I

1. a) Explain Replication Transparency.   6M
    b) What is meant by data independence?   6M

OR

2. a) Briefly Explain about the layers of transparency with neat diagram.   6M
    b) Using examples discuss in detail on the set operations of relational algebra.   6M

UNIT-II

3. a) Describe architectural models for distributed DBMS.   6M
    b) Give the rules for Fragmentation.   6M

OR

4. a) Explain about allocation model briefly.   6M
    b) Describe briefly about information requirements.   6M

UNIT-III

5. a) What are the Objectives of Query Processing?   6M
    b) Briefly explain about query processing.   6M

OR

6. a) Narrate the successive steps of query decomposition.   6M
    b) Explain briefly Reduction for Hybrid Fragmentation.   6M

UNIT-IV

7. a) Discuss distributed cost model.   6M
    b) Explain Dynamic-Query Optimization Algorithm.   6M

OR

8. a) What are the four properties to achieve consistency and reliability aspects of transactions?   6M
    b) Explain Static-Query Optimization Algorithm.   6M

UNIT-V

9. a) List and briefly explain Failures in Distributed DBMS   6M
    b) Draw the interface between the local recovery manager and the buffer manager.   6M

OR

10. a) List and explain advantages of parallel database systems.   6M
    b) Write short notes on
        i)   shared memory
        ii) shared disk   6M

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M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Data mining
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT–I

1. a) Write about multi-level and multi-dimensional association rule mining methods.   6M

   b) Depict the process of mining rare and negative patterns from transactional databases.   6M

OR

2. Explain the Apriori association rule mining along with example and also mention methods to improve the efficiency of Apriori method.   12M

UNIT–II

3. Discuss in detail classification by neural network method along with example.   12M

OR

4. a) Outline methods used to classify linear and nonlinear data using SVM along with examples.   8M

   b) Write about classification by fuzzy theory.   4M

UNIT–III

5. a) Describe DBSCAN method for clustering the data   6M

   b) How to cluster networked data? Explain   6M

OR

6. a) Write about expectation – maximization algorithm.   6M

   b) Write about Grid based clustering methods.   6M

UNIT–IV

7. Discuss in detail various issues related to web mining   12M

OR

8. Discuss in detail various issues Text Mining   12M

UNIT–V

9. a) Write about Temporal data Mining   6M

   b) Write about GSP Algorithm   6M

OR

10. Discuss in detail various issues spatial data mining along with applications   12M

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M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Data Structures and Algorithms
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT–I

1. a) Write a program by using C++ to implement the Queue operations by using linked lists. **6M**

   b) How can we control a class should not be inherited by other class? Explain. **6M**

OR

2. a) Write a program in C++ to implement the Stack operations by using linked lists. **6M**

   b) What is the importance of generic programming in object oriented programming? Explain. **6M**

UNIT–II

3. a) Define dictionary. Explain how to represent it by using skip list. **6M**

   b) With the help of suitable example explain the double hashing. **6M**

OR

4. a) Create a max heap from the set: { -5, 10, 15, -10, 23, 41} **6M**

   b) Why we need to use collision resolution techniques? Explain it by using quadratic probing. **6M**

UNIT–III

5. Create a binary search tree from the following data: {12, 25, 31, 23, 10, 28, -5, -1, 20 } Explain the different operations that can be performed on it. **12M**

OR

6. a) Derive the average case time complexity for quick sort. **6M**

   b) Give brief description about the B trees **6M**

UNIT–IV

7. a) Write a non recursive algorithm for BFS graph traversal. Explain it by using an example. **6M**

   b) Explain in detail job sequencing with deadlines problem with example **6M**

OR

8. a) Discuss in detail about AND/OR Graphs. **6M**

   b) Compare and contrast between DFS and BFS. **6M**

UNIT–V

9. Describe the travelling salesperson problem and discuss how to solve it using dynamic programming. **12M**

OR

10. a) Sketch the state space tree degenerated by 4 queens problem. **6M**

    b) Describe the control abstraction for LC Search. **6M**

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M.Tech. I Semester Regular & Supplementary Examinations January 2017
Advanced Software Engineering
(Computer Science and Engineering)

Max. Marks: 60   Time: 3 Hours
Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)
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UNIT–I

1. a) Distinguish between personal software process model and team software process model?   6M

   b) Explain about Extreme Programming Model   6M

OR

2. a) Explain unified process model with neat diagram   6M

   b) Industry is moving towards agile models, However the perspective models do play a vital role? Discuss.   6M

UNIT–II

3. a) What are the most important dimensions of system dependability?   6M

   b) Briefly explain Sub-system interface specification.   6M

OR

4. Write about the approaches that support software reuse   12M

UNIT–III

5. a) Explain Component-based software engineering with reuse process   6M

   b) What is component testing? Explain test automation   6M

OR

6. What are the strategic options for legacy system evolution? When would you normally replace all or part of a system rather than continue maintenance of the software?   12M

UNIT–IV

7. a) Write in detail about Service-Oriented Architecture and its key standards 6M

   b) Explain how standards are used in quality assurance.   6M

OR

8. How measurement is helpful in assessing software quality attributes   12M

UNIT–V

9. a) What are the important differences between the agile approach and the process maturity approach to software process improvement?   6M

   b) Suggest three specialized software tools that might be developed to support a process improvement program in an organization.   6M

OR

10. Discuss the technology directions in software engineering   12M

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