

[M17 CST 1101]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
ADVANCED DATA STRUCTURES AND ALGORITHM ANALYSIS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a) Write a procedure to delete last node and intermediate node from double linked list? 7M
b) Write a sub-routine to implement Queue operations using Linked List? 7M
2. a) Write a short note on tree traversals? 7M
b) Write a C++ routine for insertion sort? 7M
3. a) Explain graph representation techniques with example 7M
b) Convert $a + b * c + (d * e + f) * g$ the infix expression into postfix form. 7M
4. a) How do collisions happen during hashing? Explain different techniques resolving of collisions? 7M
b) Write a C++ routine to implement stack operations like PUSH, POP and DISPLAY? 7M
5. a) Discuss the different hashing functions with an example 7M
b) Draw the 11 item hash table resulting from hashing the keys: **12, 44, 13, 88, 23, 94, 11, 39, 20, 16 and 5** using the hash function $h(i)=(2i+5) \bmod 11$. 7M
6. a) Construct a binary search tree to accommodate the following list of integers and find the inorder, preorder and postorder sequence of nodes. 7M
52, 36, 86, 72, 28, 36, 47, 77, 49
b) Form a heap from the set of elements (40, 80, 35, 90, 45, 50, and 70) and sort the data using heap sort 7M
7. a) Construct an AVL tree with following data 10,15,9,12,13,79,45,36,22 7M
b) What is meant by L-L and R-L rotation in AVL trees with example? 7M
8. a) What is Red-Black tree? Explain its properties 7M
b) What is B-tree? Explain the procedure for insertion, deletion and searching operations in B-trees? 7M

[M17 CST 1101]

[M17 CST 1102]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a. Check whether $\{ [p \rightarrow (q \vee r)] \wedge (\neg q) \} \rightarrow (p \rightarrow r)$ is a tautology? (7M)
b. Verify the following argument by rules of inference
If Joe is a mathematician, then he is ambitious
If Joe is an early riser, then he doesn't like oatmeal
If he is ambitious, then he is an early riser
Hence, if Joe is a mathematician, then he doesn't like oatmeal (7M)
2. a. If R_1 and R_2 be two equivalence relations on a set A, then show that $R_1 \cap R_2$ is also an equivalence relation on A. (7M)
b. Let $F: \mathbb{R} \rightarrow \mathbb{R}$ be given by $f(x) = f(x) = x^3 - 2$ Find F^{-1} (7M)
3. a. If every element of a group G is its own inverse then prove that G is abelian. (7M)
b. Prove that the intersection of any two normal subgroups of a group G is a normal subgroup. (7M)
4. a. Find the coefficient of x^{16} in $(x^2 + x^3 + x^4 + \dots)^5$ (7M)
b. Find the number of integers between 1 and 1,000 that are not divisible by 2, 3 or 5? (7M)
5. a. Solve the recurrence relation $a_n - 7a_{n-1} + 10a_{n-2} = 4^n$ for $n \geq 2$ (7M)
b. Solve the recurrence relation $a_n - 5a_{n-1} + 6a_{n-2} = 0$ for $n \geq 2$ by using generating functions. (7M)
6. a. Prove that in any non-directed graph there is an even number of vertices of odd degree (7M)
b. State and Prove Euler's formula for planar graphs. (7M)
7. a. Prove that a graph G is a tree if and only if G has no cycles and $|E| = |V| - 1$ (7M)
b. Explain DFS and BFS with an example (7M)
8. a. Explain Kruskal's algorithm for finding minimal spanning tree with an example (7M)
b. Show that in a complete binary tree the total number of edges is given by $2(n_1 - 1)$ where n_1 is the number of terminal nodes. (7M)

[M17 CST 1102]

[M17 CST 1103]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COMPUTER ORGANIZATION AND ARCHITECTURE
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

- 1.(a) Explain Floating point addition and subtraction (7M)
(b) Explain BCD number system. (7M)
2. (a) Design and explain Arithmetic Logic unit with neat diagram. (7M)
(b) Explain selected logical micro operations with example. (7M)
3. (a) Explain Common Bus System in a basic computer (7M)
(b) Explain input output configuration in basic computer (7M)
4. (a) Explain about Addressing modes (7M)
(b) Explain general register organization (7M)
5. Explain micro programmed control unit with example (14M)
6. (a) Compare and contrast isolated I/O and memory mapped I/O. (7M)
(b) Explain about Asynchronous communication interface (ACI)? (7M)
7. (a) Explain address mapping using pages? (7M)
(b) What is the associate memory and what kind of operation it is more suitable? (7M)
8. Write short notes on
 - (i) Parallel Processing Applications (5M)
 - (ii) Reduced Instruction Set Computer (RISC) (5M)
 - (iii) Instruction Cycle (4M)

[M17 CST 1103]

[M17 CST 1104]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
DATABASE MANAGEMENT SYSTEMS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

- 1) a) Describe the structure of DBMS with diagram. 7M.
b) Illustrate the basic features of ER model. 7M.

- 2) a) What are different constraints over relations? How do you enforce the integrity constraints? 7M.
b) How do you convert ER-diagrams to tables? 7M.

- 3) Consider the following database and answer the following queries in SQL.
Sailors(sid,sname,rating,age) Boats(bid,bname,color) Reserves(sid,bid,day)
 - a) Find the sid and sname of sailors who have reserved a boat on 10-jun-2000. 3M.
 - b) Find the average age for each rating level. 3M.
 - c) Find the sid and sname of sailors who have reserved all boats. 3M.
 - d) Find the sids of sailors who have reserved two different boats on the same day. 3M.
 - e) Find the sids of sailors who have reserved both Red and Green boats. 2M.

- 4) a) Explain with an example closure of set of FDs and closure of set of attributes. 7M
b) Explain different normal forms upto BCNF. 7M.

- 5) a) Explain Hash based indexing. 7M.
b) Explain B+ tree insertion and search algorithms 7M.

- 6) a) Explain basic operation in Relational algebra with examples 7M.
b) What is a trigger? Explain trigger with an example. 7M.

- 7) a) Explain Two phase locking protocol . 7M.
b) Explain Time stamp ordering Concurrency control. 7M.

- 8) a) Explain the ACID properties of a transaction. 5M.
b) Explain ARIES recovery algorithm. 9M.

[M17 CST 1104]

[M17 CST 1105]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
ADVANCED OPERATING SYSTEMS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a) Explain about Operating System Structures (7M)
b) Explain Clock Synchronization in Distributed Systems (7M)
2. a) Explain about Distributed Mutual Exclusion (7M)
b) Explain about Distributed Deadlock Detection (7M)
3. a) Explain about Agreement protocols (7M)
b) Explain Distributed resource management (7M)
4. a) Explain about Distributed shared memory-Architecture (7M)
b) Explain the components of a load distributing algorithm (7M)
5. a) Explain about Failure Recovery and Fault tolerance (7M)
b) Explain about access matrix model and its implementations (7M)
6. a) Explain preliminaries in Data security (7M)
b) Explain about Inter connection networks for multiprocessor systems (7M)
7. a) Explain about threads and process synchronization (7M)
b) Explain about concurrency control algorithms (7M)
8. Explain Scheduling Algorithms. (14M)

[M17 CST 1105]

[M17 CST 1106]
I/II MTECH I SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
DATA WAREHOUSING AND DATA MINING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Briefly describe 3-tier Data warehouse architecture. 2X7M=14M
(b) Discuss in detail about the Data extraction & Cleanup tools.
- 2.(a) Write the differences between operational database and data warehouse. 2X7M=14M
(b) Briefly describe Multidimensional data model representation.
- 3.(a) Explain Briefly about cube, apex cuboid and base cuboid with examples. 2X7M=14M
(b) OLAP Operations with examples.
- 4 (a) What is data mining? Briefly describe the architecture of a data mining system. 2X7M=14M
(b) Explain data mining functionalities.
5. (a) Discuss in detail about the Data Preprocessing Techniques. 2X7M=14M
(b) Explain Apriori Algorithm
6. (a) Explain Decision tree induction. 2X7M=14M
(b) Discuss about Back propagation algorithm for neural network-based classification of data.
7. (a). Explain the Concept of SVM. 2X7M=14M
(b). Explain Partitioning Clustering Methods.
8. (a) Write about different types of data in cluster analysis. 2X7M=14M
(b) Explain Density-Based Clustering Method

[M17 CST 1106]

[M17 CST 1201]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
CYBER SECURITY
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

- | | |
|---|-----|
| 1. Explain about Security Services and Security Attacks. | 14M |
| 2. What is Triple DES. Explain about DES Encryption process completely. | 14M |
| 3. What is Public Key Cryptography. Explain about RSA With an Example. | 14M |
| 4. Explain about X.509 Directory Authentication Service | 14M |
| 5. What is IP security. Explain about Encapsulating security pay load. | 14M |
| 6. Explain about Secure Electronic Transaction(SET) | 14M |
| 7. Discuss about Viruses and related threats & Countermeasures. | 14M |
| 8. Explain about Firewall Design principles | 14M |

[M17 CST 1201]

[M17 CST 1202]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COMPUTER NETWORKS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

Answer any FIVE questions and all questions carry equal marks
Write all parts of any question at one place.

- | | |
|---|----|
| 1. a) Write about various Network Topologies along with merits and demerits. | 7M |
| b) Explain TCP/IP reference model | 7M |
| 2. a) Write about Channel Capacity (Maximum data rate of a Channel) | 7M |
| b) Write about various transmission media | 7M |
| 3. a) Explain Frequency Division Multiplexing | 7M |
| b) Write about Sliding window flow control. | 7M |
| 4. a) Write about error detecting codes | 7M |
| b) With a suitable example explain Go-Back – N ARQ | 7M |
| 5. a) Explain CSMA protocol | 7M |
| b) Write about Ethernet, Fast Ethernet & Gigabit Ethernet. | 7M |
| 6. a) Give the 802.11 Architecture and Protocol Stack | 7M |
| b) Explain 802.11 Frame structure | 7M |
| 7. a) Write about implementation of Connection Oriented Transport Mechanisms. | 7M |
| b) Distinguish between Datagram approach and Virtual Circuit approach | 7M |
| 8. a) With a suitable example explain any Shortest path algorithm | 7M |
| b) Explain various Congestion Control Mechanisms. | 7M |

[M17 CST 1202]

[M17 CST 1203]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
BIG DATA ANALYTICS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a) What is the difference between the 'set' & a 'map' data structure and explain about various map implementations in java with suitable examples. (7M)
b) Specify the difference between a primitive type and a wrapper class. Explain about the conversion from primitive type to wrapper class and vice-versa with an example. (7M)
2. a) What is the advantage of object serialization in java and explain about serializing & de-serializing an object with suitable examples. (7M)
b) Explain about the implementation of map reduce concept with a small example. (7M)
3. a) What are the various operational modes of Hadoop cluster configuration and explain in detail about configuring/installing Hadoop in fully distributed mode. (7M)
b) Are there any similarities between the GFS & HDFS and explain the GFS architecture with a neat sketch. (7M)
4. a) Explain the role of driver code, mapper code and reducer code within a map reduce program model by a suitable example. (7M)
b) Explain the anatomy of map reduce job run. (7M)
5. a) What do you mean by a custom writable and explain the implementation of a custom writable with an example. (7M)
b) Explain about the implementation of raw comparator and custom raw comparator with an example. (7M)
6. a) Explain the operators supported by Pig w.r.t. data access, transformations and debugging operations. (7M)
b) How are Pig programs packaged and explain the modes of running a pig script with a neat sketch. (7M)
7. a) Explain about the various data types supported by HIVEQL with an example. (7M)
b) Explain the architecture of HIVE with a neat sketch. (7M)
8. a) Write Example Hive Queries for Natural Join and outer-Join (7M)
b) Consider The student data File (st.txt). Data in the following format (7M)
 Name, District, age, gender
 i) Write a PIG script to Display Names of all female students
 ii) Write a PIG script to find the number of Students form Prakasham District
 iii) Write a PIG script to Display District wise count of all male students.

[M17 CST 1203]

[M17 CST 1204]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MACHINE LEARNING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

- | | |
|--|----|
| 1. (a) What are the different models of artificial neurons? Explain them in detail. | 5M |
| (b) Discuss various Artificial Neural Network Architectures. | 5M |
| (c) Explain McCulloch–Pitts Neuron in brief? | 4M |
| 2. (a) What is learning?.Write any four learning techniques | 5M |
| (b) Describe the limitations of the perception model. | 5M |
| (c) Explain back propagation algorithm and derive expressions for weight update relations. | 4M |
| 3. (a) Explain some basic set theoretic operations for fuzzy sets. | 7M |
| (b) What are the benefits of Fuzzy control? | 7M |
| 4. (a) Explain in details Fuzzy automata and languages | 7M |
| (b) What is Fuzzy decision making? What are its steps? | 7M |
| 5. (a) Explain the concept of Fuzzy Classification. | 7M |
| (b) Explain any one Data clustering algorithm. | 7M |
| 6. (a) Explain Rule based structure identification in details | 7M |
| (b) With block diagram explain fuzzy logic controller. | 7M |
| 7. (a) Explain how genetic algorithms are influenced by knowledge based techniques. | 5M |
| (b) Explain the Machine Learning Approach to Knowledge Acquisition | 5M |
| (c) Give a brief note about Genetics based machine learning. | 4M |
| 8. (a) How Genetic Algorithm is different from traditional algorithms? | 7M |
| (b) Explain Support Vector Classification in details | 7M |

[M17 CST 1204]

[M17 CST 1205]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SOFTWARE ENGINEERING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

- | | |
|--|----|
| 1. a) Explain about Nature of Software and Software Process. | 7M |
| b) Write about Software Myths. | 7M |
| 2. Explain about | |
| a) Generic Process Model | 7M |
| b) Personal and Team Process Model | 7M |
| 3. a) Explain any two Requirement gathering and Analysis techniques | 7M |
| b) With illustrative example explain Cohesion and Coupling. | 7M |
| 4. a) Distinguish between Structured Design and Object Oriented Design | 7M |
| b) What are various types of User Interfaces – Explain. | 7M |
| 5. a) Give the Overview of Systems Analysis and Design Methodology | 7M |
| b) What are the characteristics of Good User Interface Design | 7M |
| 6. Write about | |
| a) Code Reviews | 4M |
| b) Black Box Testing | 5M |
| c) Integration Testing | 5M |
| 7. a) Write about Software Reliability | 5M |
| b) What are various software Quality Management activities | 5M |
| c) Explain SEI Capability Maturity Model | 4M |
| 8. a) Write about CASE support in Software Life Cycle | 7M |
| b) Give the architecture of a CASE Environment | 7M |

[M17 CST 1205]

[M17 CST 1206]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
ARTIFICIAL INTELLIGENCE
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a) Discuss the areas of applications of Artificial Intelligence? (7M)
b) Discuss the tic-tac-toe problem in detail and explain how it can be solved using AI techniques? (7M)
2. a) Explain about State Space Representation of Water Jug Problem (7M)
b) Explain Problem Characteristics with examples (7M)
3. a) Explain Best First Search Algorithm with an Example (7M)
b) Apply AI Techniques D the solution of the following Cryptarithmic Problem (7M)
 CROSS
 ROADS

 DANGER

4. a) Explain how a wff in predicate calculus can be converted into Clauses (7M)
b) Explain with an example Unification & Resolution in Predicate Logic (7M)
5. a) Show how semantic nets and Frames can be captured in Logic with appropriate Examples (7M)
b) Write the CD Representation of the Sentence John fertilized fields with a Special Tool (7M)
6. a) Explain The Dependency back tracking in Truth Maintenance System with an example (7M)
b) What is a Certainty factor and explain how certainty factors are related to Rule Based Systems of the Sentence (7M)
7. a) Write a neat diagram the structure of a Rule Based Expert System and Explain its Component.
b) Explain Syntactic Processing and Augmented Transition Nets (7M)
8. Write Short on
a) Natural Deduction (5M)
b) Forward Versus Backward Reasoning, (5M)
c) Expert System Shells (4M)

[M17 CST 1206]

[M17 CST 1207]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COMPILER DESIGN
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Define compiler and explain the different phases of a compiler. 7 X 2M = 14M
(b) What is lexical analyzer and explain the role of lexical analyzer.

2. (a) What is left recursion? Eliminate left recursion from the following grammar

$$E \rightarrow E + T / T$$

$$T \rightarrow T * F / F$$

$$F \rightarrow (E) / id$$

(7M)

- (b) Construct the shift reduce parsing table for the string (2+3) from the grammar

$$S \rightarrow S + E / (S) / E$$

$$E \rightarrow num$$

(7M)

3. (a) Construct the predictive parsing table for the following grammar

$$S \rightarrow (L) / a$$

$$L \rightarrow L, S / S$$

(7M)

- (b) Construct SLR parsing table for the following grammar

$$S \rightarrow AA$$

$$A \rightarrow aA / b$$

(7M)

4. (a) What is Syntax Directed Translation. How to Implement Syntax Directed Translator. (7M)

- (b) What YAAC? How can we create a parser using YAAC (7M)

5. (a) What is DAG? Construct the DAG for the following basic block

$D := B * C$

$E := A + B$

$B := B + C$

$A := E - D$

(7M)

(b) Explain different principal sources of optimization techniques with examples. (7M)

6. (a) Explain global data flow analysis with suitable example. (7M)

(b) Explain peephole optimization techniques with suitable examples. (7M)

7. (a) Explain Code Generation Algorithm. (7M)

(b) What is Optimal Code Generation for Expressions? Explain the process of Code Generation from DAGs. (7M)

8. a) What is symbol table and explain symbol table organization techniques. (7M)

b) What is activation record? Describe the components of activation record. (7M)

[M17 CST 1207]

[M17 CST 1208]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
EMBEDDED SYSTEMS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Explain about Telegraph as an example of Embedded System. 2X7M=14M
(b) What is meant by ROM. Explain ROM variants?

- 2.(a) Explain about UART. 2X7M=14M
(b) What is DMA? Give its working.

- 3.(a) Explain about Interrupt Latency. 2X7M=14M
(b) Describe Function Queue Scheduling architecture.

- 4 (a) Explain how shared data problem is eliminated using semaphores. 2X7M=14M
(b) Explain semaphore variants.

5. (a) Describe Message Queues. 2X7M=14M
(b) Explain about Interrupt Routines in RTOS Environment

6. (a) Explain the Hard-Real Time scheduling considerations. 2X7M=14M
(b) Explain about encapsulating semaphores.

7. (a) Briefly describe about host and target machines. 2X7M=14M
(b) Explain the ways of getting software into target machine.

8. (a) Explain Instruction Set Simulators. 2X7M=14M
(b) Describe Logic analyzers.

[M17 CST 1208]

[M17 CST 1209]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
IMAGE PROCESSING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. a) Explain fundamental steps in Image processing 2X7M=14M
b) Explain Elements of Digital Image Processing.

2. (a) Give an Algorithm for FFT. 2X7M=14M
(b) Give an Algorithm for WFT.

3. (a) How do you Acquire an image? Explain in detail. 2X7M=14M
(b) Define and explain image sliding and image stretching.

4. (a) Define and explain low pass filters in brief. 2X7M=14M
(b) Define and edge. Explain various edge enhancement filters.

5. (a) Define prewitt filter. 2X7M=14M
(b) Explain in detail “Homomorphic filter”.

6. (a) Explain compression at the time of Image Transmission. 2X7M=14M
(b) Explain about standardization in image compression.

7. (a) Explain split and merge technique for segmentation. 2X7M=14M
(b) Explain segmentation by PIXEL based methods.

8. Write Short notes on the following
a) Image Classification (5M)
b) Erosion and Dilation of images. (5M)
c) Skeletanization (4M)

[M17 CST 1209]

[M17 CST 1210]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
PARALLEL ALGORITHMS
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. Answer the following: 7X2M=14M
- (a) Parallel Architectures
 - (b) Problems Unique to Parallel Programming
 - (c) Data Parallelism
 - (d) Direct and Indirect Network Topology
 - (e) Butterfly Network
 - (f) Alpha beta search
2. (a) Differentiate between MIMD and SIMD Models. 2X7M=14M
(b) Write about various Parallel Programming Models in detail.
- 3.(a) ExplainCoffman-graham scheduling algorithm for parallel processors 2X7M=14M
(b) Elaborate on Pipelining and Data Clustering.
- 4.(a) Explain the Bus, Star, Ring, Mesh, Tree topologies. 2X7M=14M
(b) What is Perfect Shuffle Network.
- 5.(a) Differentiate between Linear and Superlinear Speedup. 2X7M=14M
 Explain Amdahls Law and Amdahl Effect.
(b) Explain Odd-Even transposition sort.
- 6.(a) Explain FFT algorithm on Hyper cube multi computers. 2X7M=14M
(b) Explain Matrix multiplication on 2-D mesh SIMD model..
- 7.(a) Explain Sollin's algorithm for finding minimum cost spanning tree of a graph 2X7M=14M
(b) Parallel branch and bound algorithms.
8. Write short notes on:
- (a) Bitonic merge on shuffle exchange network (5M)
 - (b) Explain Manber and Lander's Algorithm (5M)
 - (c) Parallel Quicksort on Multi Processor network (4M)

[M17 CST 1210]

[M17 CST 1211]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
CLOUD COMPUTING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Explain cloud computing delivery models and services (7M)
(b) Mention the major challenges faced by cloud computing. (7M)
2. (a) What are the Open Source software platforms for private cloud. (7M)
(b) Explain the architectural styles for cloud computing. (7M)
3. (a) Explain Layering and Virtualization. (7M)
(b) What are the scheduling algorithms for cloud computing? (7M)
4. (a) Explain Google File System (7M)
(b) What are cloud security risks? Explain security risks posed by shared images. (7M)
5. (a) What are different types of virtualization? What hardware support is required for virtualization? (7M)
(b) Explain Resource bundling (7M)
6. (a) Explain cloud service for adaptive data streaming (7M)
(b) Explain how the cloud computing applications by Google and Microsoft are developed (7M)
7. (a) Briefly explain Amazon Simple Storage Service (7M)
(b) Explain cloud based simulation of a distributed trust algorithm (7M)
8. Write short notes on:
 - (a) Consensus Protocol (5M)
 - (b) InterCloud (5M)
 - (c) MegaStore (4M)

[M17 CST 1211]

[M17 CST 1212]
I/II MTECH II SEMESTER REGULAR EXAMINATIONS
COMPUTER SCIENCE & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MOBILE COMPUTING
MODEL QUESTION PAPER

TIME: 3 Hours

Max.Marks: 70

ANSWER ANY 5 QUESTIONS
ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Explain system Architecture of GSM with a neat diagram. 9M
(b) What is handover? Explain types of handovers in GSM system. 5M

2. (a) What is Three-Tier Architecture for Mobile Computing. Explain. 2X7M=14M
(b) Give a brief account of Mobile Devices and Mobile-Enabled Applications.

3. (a) Explain various generations in Wireless Networks. 2X7M=14M
(b) Write all the approaches for Traffic Routing in Wireless Networks.

4. (a) Explain WLAN Standard IEEE 802.11 in detail. 2X7M=14M
(b) Compare IEEE 802.11a, B, G and N Standards.

5. (a) Differentiate between Bluetooth and Radio Frequency Identification (RFID). 2X7M=14M
(b) Explain cellular IP.

6. (a) How data is replicated for Mobile Computers. 2X7M=14M
(b) Explain Data Services in GPRS and applications for GPRS.

7. (a) Explain Push-Based and Pull-Based Mechanisms. 2X7M=14M
(b) What is a 3G Network. Write its Applications.

8. Write short notes on the Following
(a) Wireless Application Protocol. 5M
(b) Mobile Computing Over SMS 5M
(c) GPRS Applications 4M

[M17 CST 1212]