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M.Tech DEGREE EXAMINATION JUNE 2013  
FIRST SEMESTER  
BRANCH: CSE  
PAPER : ARTIFICIAL INTELLIGENCE & NEURAL NETWORKS

Time: 3 hours

Max. Marks: 60

**PART-A**

Answer One question from each unit  
Each Question carries equal marks  
(Marks: 12x5=60 Marks)

**UNIT-I**

1. (a) Explain intelligence and artificial intelligence systems. How do they distinguish?  
(b) Explain with example how does conventional computing differ from the intelligence computing.

**OR**

2. (a) Define AI. Describe the applications of AI.  
(b) What is meant by agent? Explain about structure of agents.

**UNIT-II**

3. (a) Differentiate DFS and BFS.  
(b) Explain about A\* algorithm with suitable example.
4. (a) Explain about min-max search with suitable example.  
(b) Discuss about optimal decisions in multiplayer games.

**UNIT-III**

5. (a) Write about resolution theorem in proposition logic.  
(b) Differentiate forward and backward chaining with suitable example.

**OR**

6. (a) Describe the characteristics of neural networks.  
(b) Explain in detail historical development of Neural Networks.

**UNIT-IV**

7. Discuss a few tasks that can be performed by a back propagation network.

**OR**

8. Explain about pattern storage networks and pattern mapping networks.

**UNIT-V**

9. Explain about Auto associative Feed Forward Networks.

**OR**

10. Discuss about pattern clustering networks.



M.Tech DEGREE EXAMINATION-JUNE 2013

FIRST SEMESTER

Branch: CSE

OBJECT ORIENTED ANALYSIS AND DESIGN

Time: 3 hours

Max.Marks: 60

Answer Any ONE question from each unit

All questions carry equal marks

UNIT-I

1. (a) What is UML? Explain the objectives of modeling? 6 M  
(b) Contracts the following (i) Actors Vs. Stakeholders (ii) Use case Vs. Algorithm. 6 M

OR

2. (a) What is OOAD? Explain the principles involved in Object Oriented System Development? 6M  
(b) Explain the importance and features of Interaction diagrams? 6M

UNIT-II

3. (a) Write short notes on the following:  
(a) Iterated messages with the help of example 6M  
(b) Terms and concepts of Collaboration Diagrams. 7M

OR

4. (a) What is the purpose of sequence? Diagram? Discuss about Broadcast messages? 6M  
(b) How to depict Asynchronous message in Sequence with/ without priority? Explain. 6M

UNIT-III

5. (a) Define Fork and Join? Explain the different parts of State in State machine? 6M  
(b) Explain the Component and Deployment diagrams with example? 6M

OR

6. What is an Behavioral Modeling? Draw an Activity Diagram for different operations in ATM. 12M

UNIT-IV

7. (a) "The Iterative approach is risk driven". Explain? 6M  
(b) Explain Use-Case Prioritization and Assess the iteration and Phases? 6M

OR

8. (a) Explain Architecture elaboration iteration Work flow? 6 M  
(b) How to executive the Core Work flows in Elaboration Phase? Explain. 6 M

UNIT-V

9. Explain Transition Phase in detail? 12M

OR

10. Explain in detail about the Automation of Library application? 12M



M.Tech DEGREE EXAMINATION-JUNE 2013

FIRST SEMESTER

Branch: CSE

ADVANCED DATA BASE MANAGEMENT SYSTEMS

Time: 3 hours

Max.Marks: 60

Answer Any ONE question from each unit

All questions carry equal marks

UNIT-I

1. (a) Discuss the different types of Relational Integrity constraints? 6 M
- (b) Differentiate between Data Definition Language and Data Manipulation Language? 6 M

OR

2. (a) How the Data Modeling will be developed using Entity Relationship approach? 7M
- (b) Given the following set of functional dependencies on schema R 5M  
(A, B, C, D, E, F, G)  
 $A \rightarrow B$ ,  
 $ABCD \rightarrow E$ ,  
 $EF \rightarrow G$ ,  
Determine if  $(ACDF \rightarrow G)$  holds o R?

UNIT-II

3. (a) State 3NF and BCNF. Compare 3NF and BCNF with respect to lossless join decompositions and dependency preservation with the help of an example? 7M
- (b) Discuss about Multivalued Dependencies? 5M

OR

4. (a) Discuss the basic operations that can perform using relational algebra. Also explain the concept of referential integrity in database management system. 7M
- (b) Write short notes on Domain Relational Calculus? 5M

UNIT-III

5. Explain various Query Optimization techniques in detail? 12M

OR

6. (a) Define a schedule. Differentiate between serial and Serializable schedule. 7M
- (b) Discuss the lost- update, dirty- read and incorrect summary problems associated with transactions. 5M

UNIT-IV

7. Explain in detail how the two- phase locking techniques can be used for concurrency control? 12M

OR

8. (a) Compare the shadow- paging recovery scheme with the log- based recovery schemes in respect to ease of implementation and overhead cost? 6 M  
(b) Write a short note on Multiple Granularity? 6 M

UNIT-V

9. What is Enhanced- ER Model? Describe in detail the mapping of EER model constructs to relations?

OR

10. (a) Explain knowledge discovery in databases. Discuss the role of data mining in it? 6M  
(b) Discuss in detail concurrency control in case of distributed database design? 6M

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M.Tech DEGREE EXAMINATION-JUNE 2013

FIRST SEMESTER

Branch: CSE

CRYPTOGRAPHY AND NETWORK SECURITY

Time: 3 hours

Max.Marks: 60

Answer Any ONE question from each unit

All questions carry equal marks

UNIT-I

1. (a) Explain OSI Security Architecture. 6 M  
(b) Discuss a one-time pad. 6M

OR

2. Explain Data Encryption Standard algorithm 12M

UNIT-II

3. Performance encryption and decryption using RSA Algorithm for the following  $p=71$  ;  $q=11$  ;  $e=17$  ;  $M=8$ . 12M

OR

4. (a) What is the difference between link and end to end encryption? 6M  
(b) Alice and bob want to establish s secret key using the Diffie- Hellman Key exchange protocol using  $n= 11$ ,  $g=5$ ,  $x=2$  and  $y=3$ . Find the values A, B and secret key. 6M

UNIT-III

5. Describe Euler's and Chinese Remainder theorem. 12M

OR

6. Discuss Message Authentication Codes. 12M

UNIT-IV

7. Describe Secure Hash Algorithm. 12M

OR

8. Explain X.509 authentication service and its certificates. 12M

UNIT-V

9. Explain Key Management in IP Security. 12M

OR

10. Discuss SSL in detail. 12M

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M.Tech DEGREE EXAMINATION-JUNE 2013

FIRST SEMESTER

Branch: CSE

ADVANCED DATA STRUCTURES AND ALGORITHMS

Time: 3 hours

Max.Marks: 60

Answer Any ONE question from each unit

All questions carry equal marks

UNIT-I

1. (a) Define Queue? Discuss the applications of Queues with example? 6 M  
(b) Write short notes on asymptotic notations? 6M

OR

2. (a) Explain Best and Worst Case Complexities? 6M  
(b) Discuss any two applications of Stacks? 6M

UNIT-II

3. (a) Explain the AND/ OR graph with an example? 6M  
(b) Derive the formula for height of a B-Tree? 6M

OR

4. Define a Binary Search Tree? Write the procedure to perform insertion, deletion and searching in a binary search tree? 12M

UNIT-III

5. Perform linear probing for a hash table with  $b=17$  buckets, and the hash function  $f(k)=k$   
(a) Draw the hash table for each insertion. 12M  
(b) What is the load factor after last insertion.  
(c) What is the maximum number of buckets examined in an unsuccessful search?

OR

6. Define Splay Tree? Explain its operations of Splay Trees with suitable examples? 12M

UNIT-IV

7. (a) Write the Quick sort algorithms Also analyze its time complexity in Best case? 6M  
(b) Explain Divide and Conquer general method? 6M

OR

8. (a) Explain the Kruskal's algorithm for minimum cost spanning Tree? 6M  
(b) Write short notes on Single source shortest path with an example? 6M

UNIT-V

9. (a) Solve the following 0/1 Knapsack problem using dynamic programming. 6M  
 $n=4, m=30, (w_1, w_2, w_3, w_4)=(10, 15, 6, 9)$  and  $(p_1, p_2, p_3, p_4)=(2, 5, 8, 1)$ .  
(b) Differentiate between Greedy method and Dynamic Programming? 6M

OR

10. What is Back Tracking? Discuss Branch and bound method with an example? 12M



M.Tech DEGREE EXAMINATION-JUNE 2013

FIRST SEMESTER

Branch: CSE

ADVANCED COMPUTER ARCHITECTURE

Time: 3 hours

Max.Marks: 60

Answer Any ONE question from each unit

All questions carry equal marks

UNIT-I

1. (a) Explain various Technology Trend's in Computer Industry. 6 M  
(b) How to calculate cost of an Integrated Circuit and explain. How cost becomes price by taking an example. 6M

OR

2. (a) What is Data Hazard? Explain various hazards in ILP. 6M  
(b) Explain how to archive high performance instruction delivery. 6M

UNIT-II

3. (a) Explain Hardware versus Software Speculation? 6M  
(b) Explain the limitation of ILP. 6M

OR

4. What are the two Real-World issues in vector Processors? Explain. 12M

UNIT-III

5. (a) Explain Hardware support for Compiler Speculation. 6M  
(b) Explain the Taxonomy of Parallel Architectures. 6M

OR

6. Discuss various models of Memory Consistency. 12M

UNIT-IV

7. (a) Explain Internetworking. 6M  
(b) Explain examples of Internetworking. 6M

OR

8. (a) What are the characteristics of Scientific Applications? Explain. 6M  
(b) Explain Custom Cluster Approach. 6M

UNIT-V

9. Discuss Advanced Optimizations of cache Performance. 12M

OR

10. Explain the Internet Archive Cluster and estimate its performance cost and dependability. 12M

