ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
III/IV B. Tech II- Semester Regular Examinations April - 2018
ADVANCED DATA STRUCTURES (Elective-I)
(CSE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT-1

1) a) What is skip lists? Discuss with an example   (**6M**)
   b) What is hashing? Discuss about the rehashing methods with examples   (**6M**)

(OR)

2) a) Give a brief note on Dictionaries   (**6M**)
   b) Explain insertion and deletion operation of a skip list with example   (**6M**)

UNIT-2

3) What is Red Black Tree? Explain the operation of Red Black Tree   (**12M**)

(OR)

4) a) Explain the operations of splay trees.   (**6M**)
   b) Write an algorithm for deletion of a node in a Binary Search Tree   (**6M**)

UNIT-3

5) a) What is a priority queue? Explain how you arrange elements in a priority queue.   (**6M**)
   b) What is Binomial Queue? Discuss about operation of Binomial Queue   (**6M**)

(OR)

6) a) How to delete an element from the Binary heap? Explain   (**6M**)
   b) Write an algorithm for deleting an element from the Binary heap   (**6M**)

MODEL PAPER

UNIT-4

7) a) Sort the following elements using heap sort   **(6M)**
        43,67,45,21,83,92,11,89,8,3,6,27
   b) Write an algorithm for heap sort   **(6M)**

(OR)

8) a) What is External Sorting? Discuss the algorithms with proper examples   **(12M)**

UNIT-5

9) Explain the shortest path algorithm with an example.   **(12M)**

(OR)

10) Write short notes on the following   **(12M)**
    a) Acyclic graphs   b) Graph with negative edges   c) Network flow problems

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ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
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III/IV B. Tech II- Semester Regular Examinations April - 2018
COMPILER DESIGN
(CSE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

Unit -I

1. a) Write down the pattern & draw DFA for identifier (**3M**)
   b) Explain in detail about phases of compiler with example (**9M**)

(**OR**)

2. a) Differentiate between interpreter and compiler (**4M**)
   b) Explain about lexical analyzer (**4M**)
   c) Explain buffering techniques in lexical analyzer (**4M**)

Unit-II

3. Explain in detail about problems with top down parsers with example (**12M**)

(**OR**)

4.
   a) Consider the grammar
   E ->TE'
   E' -> +TE'|
   T ->FT' (**8M**)
   T' -> *FT'|
   F -> (E)|id
   Construct the parsing table using predictive parser
   b) Explain recursive descent parser with example (**4M**)

Unit-III

   a) Construct an operator precedence parser for the given grammar
   S -> iEtS|iEtSeS|a
5. E->b|c|d (**8M**)
   b) Explain various conflicts that occur during shift reduce parsing (**4M**)

MODEL PAPER

<div align="center">(**OR**)</div>

a) Construct LALR parser table for the following grammar
S-> L=R
S->R
L->*R
6. R->L   (**10M**)
b) List the differences between bottom up & top down parser   (**2M**)

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Unit-IV

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a) Construct syntax tree, postfix notation and three address code for the following
7. expression (a+b)*(c-d)   (**6M**)
b) Explain loop optimization   (**6M**)

<div align="center">(**OR**)</div>

8. a) Write the quadruples, triples, indirect triples for the expression a*(b+c)   (**6M**)

b) What is a DAG? Construct DAG for the following basic block
    d=b*c;
    e=a*b;
    b=b+c;
    c=b*c;   (**6M**)

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Unit-V

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9. a) Explain the different issues in code generation   (**6M**)
b) Explain the techniques for the machine dependent code optimization.   (**6M**)

<div align="center">(**OR**)</div>

10. a) Explain in detail about peep hole optimization   (**8M**)
b) Explain briefly on Runtime storage Administration   (**4M**)

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ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
III/IV B. Tech II- Semester Regular Examinations April - 2018
ADVANCED COMPUTER ARCHITECTURE
(CSE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT-1

1) a) Write about Amdahl's law with relevant example.   **(6M)**
   b) Explain the quantitative principles of computer design.   **(6M)**

(OR)

2) a) Define the concept of computer architecture.   **(6M)**
   b) Describe the classes of parallelism and parallel architectures   **(6M)**

UNIT-2

3) Describe any six advanced optimizations of cache performance.   **(12M)**

(OR)

4) Differentiate between the memory hierarchy of ARM-Cortex A8 and Intel Core- i7 processors.**(12M)**

UNIT-3

5) Explain the data dependencies and hazards between the instructions in ILPs.   **(12M)**

(OR)

6) a) Discuss briefly about dynamic scheduling   **(6M)**
   b) Discuss about hardware based speculation to handle branches in ILPs.   **(6M)**

UNIT-4

7) a) Discuss the issues and approaches of multi-processor architectures.   **(6M)**
   b) Describe about synchronization.   **(6M)**

(OR)

8) a) Describe the different models of memory consistency. **(6M)**

    b) Discuss the basic scheme for enforcing cache coherence in multi-processor systems. **(8M)**

UNIT-5

9) a) Discuss how Map-Reduce programming model solves the workload for

    Warehouse-Scale computers. **(6M)**

    b) Discuss the computer architecture for warehouse-scale computers. **(6M)**

(OR)

10) Explain the Google Warehouse-Scale Computer **(12M)**

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ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
III/IV B. Tech II- Semester Regular Examinations April - 2018
SOFTWARE ENGINEERING
(CSE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

Unit –I

1. a) Explain about software development activities in detail?   (**4 M**)
   b) Elaborate about software requirement analysis and specification with suitable
   example?   (**8M**)

(**OR**)

2. a) Define software process and explain about different process models with neat sketch? (**8M**)
   b) Demonstrate about problem domain?

                                                                    (**4M**)

Unit-II

   a) What is role of software architecture in project development and mention different
3. architecture styles?   (**6M**)
   b) Explain about architecture views with suitable example?   (**6M**)

(**OR**)

4. a) Explain about evaluating architecture for ATAM?   (**6M**)

   b) Explain the need of component and connecter view in software development?   (**6M**)

Unit-III

5. a) Explain about module level concept?   (**4M**)
   b) Draw a use case and class diagram for railway reservation system?   (**8 M**)

<div align="center">(**OR**)</div>

6.   a) Write about structured design methodology (DFD) with suitable example?   (**6M**)
      b) Define dynamic diagrams and draw sequence and state chart diagrams for web
         counseling?   (**6M**)

<div align="center">**Unit-IV**</div>

7. a) Write the difference between White Box testing and Black Box testing   (**8M**)
    b) Explain about testing process?   (**4M**)

<div align="center">(**OR**)</div>

8. a) Demonstrate testing fundamentals?   (**6M**)

    b) Explain about the metrics?   (**6M**)

<div align="center">**Unit-V**</div>

    a) How to do the effort estimation for the project using COCOMO model by
9.   considering any example?   (**6M**)
    b) State the need of project scheduling and staffing during development?   (**6M**)

<div align="center">(**OR**)</div>

10. a) Mention the need of planning a software project?   (**4M**)
    b) Explain about the quality plan and calculate the effort estimation for library (**8M**)
       management?

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ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
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III/IV B. Tech II- Semester Regular Examinations April - 2018
WEB TECHNOLOGIES
(CSE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT - I

1. a) Write HTML code to display your class time table.   (**5M**)
   b) Explain different types of cascading style styles with suitable examples. (**7M**)

(OR)

2. a) Write a java script code to validate the following information of the   (**8M**)
      student after clicking the submit button
   i) Name: should be of length max 30 characters

   ii) Roll no: Should contain only numbers

   iii) e-mail id: should be of the form name@domain.com

   iv) mobile number: should be of exactly 10 characters and only numbers are

   allowed as input

   b) Design the static web page that display a marks table with three rows and three
      columns as shown below: (**4M**)

   Marks1 Marks2 Marks3
   90   90   99
   81   80   82

UNIT - II

3. a) Explain with an example program how to connect to a MySQL Server
      database from a PHP script.   (**6M**)
   b) Write a PHP code to validate the form consisting of a username, password and
      email fields.   (**6M**)

(OR)

4.a) Explain with examples the PHP conditional statements(5M)

  b) How we can retrieve the data in the result set of MySQL using PHP?   (**7M**)

UNIT-III

5.a) explain the life cycle of servlet   (**5M**)

  b) list out any five interfaces and classes from javax.servlet package.   (**7M**)

(OR)

6.a) what are cookies? Explain how cookies help in maintaining and tracking a

     session with the help of an example.   (**7M**)

  b) List out the different http request and response messages with syntaxes (**5M**)

UNIT-IV

7.a) What is MVC? Differentiate a JSP page from a Servlet page   (**6M**)

  b) List out and explain the different JSP Implicit objects   (**6M**)

(OR)

8.a) What are JSP Elements. List out with suitable descriptions.   (**7M**)

  b) Write a JSP program illustrating above JSP elements.   (**5M**)

UNIT-V

9.a) Discuss various types of JDBC drivers. Give Syntax for each   (**6M**)

  b) Write a program to access database using servlet.   (**6M**)

(OR)

10.a) Why do you think JSON is preferred while building websites?   (**5M**)

   b) Explain how you can declare, initialize, use and modify an array of

     elements using JSON   (**7M**)

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