Answer question No.1 compulsory

Answer one question from each unit

I) a) Approaches to user interface design.

b) Objectives of Design.

c) What is a component?

d) What is a CRC card?

e) Integrity constraints.

f) What is Reuse?

g) What is a software metric?

h) Design pattern.

i) Criteria for a good Design.

j) What is a collaboration diagram?
k) What is a component?

l) Define state and an event.

m) What is the purpose of Interaction diagrams?

n) What is a user Interface?

o) What is consistency checking?

UNIT - I

2) a) Explain about the origins of object-orientation.

b) Explain how to draw a class diagram.

(OR)

3) a) What is the purpose of a Requirements model? Explain how requirements are documented.

b) Draw Use case diagram for Agate ltd.

UNIT - II

4) a) Discuss about measurable objectives in Design

b) Explain how to draw a collaboration diagram.

(OR)

5) a) Discuss component based development.

b) Write about software development patterns.

UNIT - III

6) a) Data management Issues.

b) Architecture of presentation layer.
7) a) Approaches to user interface Design.
   b) Write short notes on Integrity constants.

UNIT - IV

8) Discuss about Implementation in detail.

(OR)

9) a) Dynamic systems development method.
   b) Unified software development process.
   c) Discuss Issues in choosing a Methodology.
B.Tech. DEGREE EXAMINATION, DEC. - 2013
(Examination at the end of Final Year)
Computer Science
Paper – II : COMPUTER NETWORKS

Time : 03 Hours                                                                 Maximum Marks : 75

Answer Question No. 1 is compulsory
Answer ONE Question from each Unit

1) Write short notes on :
   a) DNS
   b) WWW
   c) Digital Signature
   d) Video on demand
   e) Routing

UNIT - I

2) Explain Internetworking.
   OR

3) Explain IP v6 in detail
   UNIT - II

4) Explain TCP.
   OR

5) Explain about UDP in detail
UNIT - III

6) Discuss 
   (a) Multimedia  
   (b) WWW

OR

7) Explain
   (a) Audio Compression  
   (b) DNS

UNIT - IV

8) Explain any one public key algorithm with example.

OR

9) Discuss how e-mail security is provided
1) a) Define handle pruning.

b) Define Regular expression.

c) What is Lex.

d) Define Lookahead operator.

e) Define Lexical error.

f) What is Error Recovery in Yacc?

g) Define S-attribute.

h) Define Bottom – up persing.

i) Define DAG.

j) What is Dead Code Elimination?
k) Give the significance of symbol table.

l) What do you meant by shift reduce technique.

m) What is interpretor?

n) What is Yacc tool?

o) What is register description?

UNIT - I

2) a) Write a short note on Lexical Analysis versus parsing.

b) Write about Lexical analyzer generator.

OR

3) a) Explain Top-down parsing with example.

b) Briefly explain various phases of compiler.

UNIT - II

4) Construct LR(1) parsing table for the following grammar with detail algorithm.

   S → L = R, S → R, L → * R, L → id, R → L.

OR

5) a) Explain FIRST and FOLLOW.

b) Explain different Error Recovery strategies in predictive parsing.
UNIT - III

6) a) Explain Inherited and Synthesized Attributes.
   b) Design an S-attributed SDD for the following grammar.
      \[ S \rightarrow L.L / L \ L \rightarrow LB / B \ B \rightarrow O/1 \]

OR

7) a) Write a procedure for Eliminating left Recursion from SDT’s.
   b) Briefly explain Syntax directed translation.

UNIT - IV

8) a) Explain implementation of static allocation scheme.
   b) Explain DAG representation of Basic blocks.

OR

9) a) Explain the role of addressing modes in code generation.
   b) Explain pointer Assignments and procedure cells.
B.Tech. Degree Examination, DEC. - 2013
(Examination at the end of Final Year)
Computer Science
Paper - IV : VLSI DESIGN

Time : 03 Hours                                                              Maximum Marks : 75

Answer Question No. 1 is compulsory. [15]

Answer ONE question from each unit [4 × 15 = 60]

1) a) Mention the advantages of layout.
   b) Why substrate and well contacts are important in CMOS.
   c) What is the pull up to pull down ratio for an nMOS?
   d) Express \( g_m \) in terms of \( I_{ds} \) and \( V_{ds} \).
   e) Mention a few CAD testing tools used in VLSI.
   f) What is inverter pair delay?

**UNIT I**

2) a) Explain the advantages of MOS technology over bipolar technology.
   b) With neat sketches explain CMOS fabrication using n-well process.

   OR

3) a) Explain the concept of sheet resistance.
   b) Derive the equation for transconductance and output conductance of a MOS transistor.
UNIT II

4) a) Implement the bus arbitration logic for n-line bus using structure design.
   b) Explain the switch logic implementation of four-way multiplexer.
      OR

5) a) Implement the XOR gate using dynamic CMOS logic.
   b) What is a shifter? Draw and explain barrel shifter?

UNIT III

6) a) Explain about a pseudo static ram cell with computation of area and power dissipation.
   b) Explain the disadvantages of single transistor dynamic RAM cell.
      OR

7) a) Give the sketch for an AND matrix used in PLA and explain its functionality.
   b) Explain about the construction of pseudo static RAM cell with neat diagram.

UNIT IV

8) a) Explain about the following CAD tools.
    i) Design rule verification.
    ii) Lay out verses schematic verification.
   b) Explain about testing sequential logic.
      OR

9) a) Write short note on test and testability.
   b) Write short notes on Scan design techniques.
Write short notes on:

a) Thresholding.
b) Aliasing.
c) Histogram Equalization.
d) Spatial Filtering.
e) Bit-Plane Coding.

UNIT I

2) a) Explain the components of Image Processing systems.

b) Explain image sensing & acquisition.

OR

3) a) Explain how digital images are represented.

b) Explain about spatial & Gray level resolution.
UNIT II

4) Explain how image enhancement is done using arithmetic & logic operations.

OR

5) Explain smoothing of an image using Low Pass filters.

UNIT III

6) a) Describe the model of an image degradation & restoration process.

b) Discuss about fast wavelet transform.

OR

7) Explain about Scaling & wavelet functions in Multiresolution expansion.

UNIT IV

8) a) Describe various Image Compression models.

b) Explain about region-based segmentation.

OR

9) Describe Lossy Compression techniques.
1) Write short notes on:

   a) What is the difference between block cipher and stream cipher?

   b) Define firewall.

   c) Define digital signature.

   d) What is the difference between private key and public key?

   e) What is a fingerprint of a message?

   **UNIT – I**

2) a) Explain various substitution techniques.

   b) Explain different block cipher modes of operations.

   OR

   c) Explain DES.
UNIT - II

3) a) Discuss SHA.

OR

b) Explain about Message Authentication Code.

c) Explain test for primality.

UNIT – III

4) a) Discuss about Kerberos v4.

OR

b) Discuss about Authentication Header and Encapsulating Security Payload.

UNIT – IV

5) a) Explain SSL and TLS.

OR

b) Explain SET in detail.
Answer Question No.1 compulsory (15)

Answer One question from each Unit (4 x 15 = 60)

1) a) What is Hamming Distance?
   b) What is Binary step function?
   c) What is Perceptron
   d) What is membership function of a fuzzy set?
   e) Write distributive property for two fuzzy sets?
   f) What is fuzzy singleton?
   g) Write about regression trees?
   h) Define neuro fuzzy modeling?
   i) Write cost function formula in the k-means clustering?
   j) Write briefly about evolutionary computation?
k) What is the survival of the fittest?
l) What is Hybrid model?
m) Write applications of soft computing?
n) What is AI technique?
o) What is knowledge base?

UNIT - I

2) a) Explain kohonen self-organizing maps with an example?

b) Explain multilayer perceptron? Give one example?

OR

3) a) Explain perceptron learning rule convergence theorem?

b) Discuss about auto associative memory with an example?

UNIT – II

4) a) Explain five methods of defuzzification?

b) Explain about classical set and fuzzy set operations? Write some examples?

OR

5) a) Explain single-input, single-output Mamdani fuzzy model?

b) Discuss about ANFIS architecture briefly?
UNIT - III

6)  a) Briefly discuss about K-Means clustering with example?
   
b) Explain about genetic algorithms with example?

OR

7)  a) Explain genetic algorithms in game playing with an example?
   
b) Explain about rank space method?

UNIT - IV

8  a) Explain the Anneling Technique with suitable example?
   
b) Explain about frames?

OR

9)  a) Explain about semantic networks?
   
b) Explain applications of Soft Computing?
1) Write short notes on:
   a) Sole Proprietorship
   b) Management
   c) Recruitment
   d) Leadership
   e) Vendor rating
   f) Advertising
   g) Training and Development
   h) Inventory Management

2) Explain the functions of management.
3) Distinguish between private limited and public limited companies.

4) Explain the common methods of depreciation.

5) Explain various channels of distribution.

6) What are the various functions of personnel management?

7) Describe the forms of business organization.

8) Explain the importance of inventory management in manufacturing company.

9) Explain the marketing implementation and evaluation.
1) Explain the following:

a) Scheduling

b) Cross bar switch

c) Routing

d) Synchronization

e) Control flow

UNIT – I

2) a) Explain about classification of Parallel Computers.

b) Explain about PRAM.
3) Explain about Static Connection networks.

UNIT – II

4) a) Describe the VLIW architecture.
    b) Explain instruction set architecture.

OR

5) Describe the various mechanisms for instruction pipelining.

UNIT – III

6) a) Explain about Hierarchical Bus Systems.
    b) Explain Multicast routing algorithms.

OR

7) a) Explain Hybrid architecture.
    b) Explain about Snoopy bus protocols.

UNIT – IV

8) Describe various parallel programming models.

OR

9) Discuss about the different types of message passing.

UNIT – V
Answer Question No.1 compulsory  (15)
Answer ONE Question from each Unit  (4×15=60)

1) a) Define binning.
    b) Define wavelet transformations.
    c) What is Quartiles.
    d) Explain the join step.
    e) Define data cleaning.
    f) Explain Prediction.
    g) What is outlier mining.

UNIT-I

2) What is OLAP? Explain OLAP operations in multi dimensional data Model.

    OR

3) What is data mining? Explain the functionalities of data mining.
UNIT-II

4) Define data pre-processing. Explain the data transformation.

OR

5) Define apriori algorithm? Explain the steps to improvise apriori Algorithm.

UNIT-III

6) What is Bayesian classification? Explain navie Bayesian classification

OR

7) Define back propagation. Explain input forward method that helps in back propagation.

UNIT-IV

8) What is clustering? Explain how clustering methods are categorized.

OR

9) What is the use of grid based methods? Explain statistical based grid.

◆◆◆◆◆
1) Write short notes on:

a) Decoupling capacitor.

b) Overloaded Signal.

c) Programmable Logic Device.

d) Oscillator.

e) Watch Dog Timer.

UNIT - I

2) a) Describe the working of UART.

b) Explain different types of memory.

OR

Describe shared data problem and provide a solution.
UNIT - II

3) Explain different software architectures for embedded systems.

OR

a) Explain the various states of a Task.

b) Discuss about different types of semaphores.

UNIT - III

4) Compare various operating system services.

OR

a) Distinguish between Hard real time and Soft real time systems.

b) Explain about memory management in embedded systems.

UNIT - IV

5) a) Explain about address resolution.

b) Discuss about the Embedded software development tools.

OR

Explain about various debugging tools.
Answer Question No. 1 compulsory. (15)

Answer ONE question from each unit. (4×15 = 60)

1)  a) Define personal software process?
 b) Differentiate between product and process?
 c) Define process, project and task?
 d) Maintain few software defects?
 e) List the points of a simplified design process?
 f) Write a short note Time Management?
 g) Write a short note on finding defects in Analysis phase?

UNIT - I

2) Explain the relationship between period and product plans. How do you record the summary of the monthly activity?

OR

3) Explain various levels of PSP and CMM?
UNIT - II
4) Explain about TSP process structure?

OR

5) Explain the period of product planning process in detail with an example?

UNIT - III
6) a) Define Defect Efficiency and Defect Rate?
b) How do you managing commitments?

OR

7) a) How can we categorize product size? Explain with an example?
b) What are software Defects? Explain various types of defects in Design phase?

UNIT - IV
8) a) Explain about code Review checklist with an example?
b) How to measure product quality? Explain with an example?

OR

9) a) How do you calculate yield values and estimate the ultimate yield?
b) Define Quality Control cost?

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