B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – I : Object Oriented Analysis & Design

Time : 3 Hours   Maximum Marks: 75

Answer question No.1 is compulsory   *(15)*

Answer one question from each unit   *(4×15 = 60)*

1) Write a short notes on:

    a)   Integrity constraints.

    b)   Usecase diagram.

    c)   Objectives of design.

    d)   Consistency checking.

    e)   Methodology.

UNIT - I

2) What is object oriented analysis and design. Explain the models of it briefly with an example.

OR

3) Draw and explain class diagram and usecase diagram for online bookstore.

UNIT - II

4) a)   Describe about measurable objectives in design.

    b)   Explain deployment diagram with example.

OR

5) Explain

    a)   The role of operation specifications.   b)   Consistency checking.

UNIT - III

6) Give a brief account on system design.

OR

7) Explain about Human – computer Interaction.

UNIT - IV

8) Explain managing object – oriented projects.

OR

9) Explain implementation in detail.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – II : Computer Networks

Time : 3 Hours   Maximum Marks: 75

Answer question No.1 is compulsory   *(15)*

Answer one question from each unit   *(4×15 = 60)*

1)   Write short notes on:

    a)   ICMP

    b)   Format for UDP segment and TCP segment.

    c)   What is distributed multimedia database?

    d)   Differentiate cryptography & water marking.

    e)   e-mail security.

UNIT - I

2)   a)   Explain about network layer design issues.

    b)   Why is IP packet fragmentation sometimes necessary?

OR

3)   a)   What is Internet Routing? What are the different types of routing.

    b)   Discuss about congestion control algorithms with an example.

UNIT - II

4)   a)   What is the retransmission strategy?

    b)   How adaptive retransmission timer is set.

    c)   What are the TCP implementation policy options.

<div align="center">OR</div>

5)   a)   How routing and overload are controlled in telephone networks.

       b)   Define the terms:

           i)   Option negotiation

           ii)   Transport quality

           iii)   Transport service user

           iv)   Transport service provider

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UNIT - III

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6)   a)   Discuss any one MPEG audio compression algorithm.

       b)   Explain how to generate conceptual video data, describe it with an example.

<div align="center">OR</div>

7)   Explain the need for data compression in multimedia systems. What are the major steps of data compression? Explain its various types.

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UNIT - IV

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8)   a)   What is the role of SMI in network management.

       b)   What is a key distribution centre? What is a certificate authority.

       c)   In what way does a public key encrypted message digest provide a "better" digital signature than public key encrypted message?

<div align="center">OR</div>

9)   a)   Discuss about symmetric algorithms.

       b)   Explain about authentication protocols.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – III : Compiler Design

Time : 3 Hours   Maximum Marks: 75

Answer question No.1 is compulsory   ***(15)***

Answer one question from each unit   ***(4×15 = 60)***

1) Explain the following:

   a) DAG

   b) Regular expression

   c) Bottom –up parsing

   d) Interpreter

   e) Register description

UNIT - I

2) a) Explain various phases of compiler.

   b) Explain what is the significance of compiler.

OR

3) a) Write short notes on lexical analysis?

   b) Explain the lexical analyzer generator?

UNIT - II

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

   $S \rightarrow L = R, S \rightarrow R, \ L \rightarrow *R, L \rightarrow id, R \rightarrow L$

OR

5) a) Explain indetail about YACC Tool

   b) Explain error recovery in YACC

UNIT - III

6) Explain briefly symbol tables with an example.

OR

7) Design an S – attributed SDD for the following grammer.

   S → L. L. L | L L L → L B | B B → 0 | 1

UNIT - IV

8) Explain DAG representation of basic blocks with an example.

OR

9) Briefly explain pointer assignments and procedure cells.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – IV : VLSI Design

Time : 3 Hours   Maximum Marks: 75

Answer question No.1 is compulsory   *(15)*

Answre any one question from each unit   *(4×15 = 60)*

1) a) Mention any 4 differences between CMOS and bipolar technologies.

   b) Draw the stick diagram for nMOS inverter.

   c) What is meant by system partitioning?

   d) Define sheet resistance and area capacitance of layers.

   e) List out features of Ga –As technology.

   f) Mention a few CAD testing tools used in VLSI.

UNIT - I

2) a) What are the various CMOS fabrication procedures? Summarise the typical processing steps of the p-well process.

   b) What are the different scaling models are used and explain the scaling factors device parameters.

OR

3) a) With suitable diagrams explain about BiCMOS fabrication procedure in an n-well process.

   b) Discuss about basic electrical properties of MOS and BiCMOS circuits.

UNIT - II

4) a) Design a layout for a two input CMOS NAND gate in 2 stages.

b) Explain how good layout techniques can improve performance.

OR

5) a) With suitable diagrams explain some switch logic arrangements.

b) Explain the structural design of a parity generator.

UNIT - III

6) a) Explain the operation of 6 transistor SRAM cell.

b) Explain the disadvantages of single transistor dynamic RAM cell.

OR

7) Explain about the construction of a pseudo static RAM cell with neat diagram.

UNIT - IV

8) a) Explain the various concepts required for design for testability.

b) Write short notes on:
   i) BIST
   ii) ATPG

OR

9) a) Write about scan design technique with LSSD structure.

b) Explain briefly about Ga-As technology.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

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COMPUTER SCIENCE

Paper – IV : Image Processing

Time : 3 Hours   **Maximum Marks: 75**

Answer question No.1 is compulsory   **(15)**

Answer one question from each unit   **(4×15 = 60)**

1)   a)   What is spatial resolution.

    b)   What do you mean by perceived brightness.

    c)   Define sampling theorem.

    d)   What do you mean by Image addition.

    e)   Define line degradation.

    f)   What is a wavelet.

    g)   What is meant by pruning.

    h)   What does JPEG stand for.

UNIT - I

2)   a)   Explain the components of an Image processing system.

    b)   Distinguish between spatial resolution and grey level resolution.

OR

3)   a)   Discuss the elements of visual perception.

    b)   Give the steps involved in Image sampling**.**

UNIT - II

4) a) Explain histogram equalization for Image enhancement.

b) Discuss how sharpening of an image can be done in frequency domain.

OR

5) a) Explain the point operations on an input image.

b) Discuss the Homomorphic filtering.

UNIT - III

6) a) Explain the difference between image enhancement and restoration.

b) Explain the fast wavelet transform used in image restoration.

OR

7) a) Explain Wiener filtering for restoration of image.

b) Give the significance of multiresolution expansions.

UNIT - IV

8) a) How do you detect the discontinuities of an image.

b) Discuss image compression standards.

OR

9) Write explanatory notes on:

a) Region – based segmentation.

b) Error – free compression.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – V : Cryptography and Networks Security

Time : 3 Hours   Maximum Marks: 75

Answer question No.1 is compulsory   *(15)*

Answer one question from each unit   *(4×15 = 60)*

1)   Write short notes on:

a)   Importance of block cipher.

b)   State & define key generation techniques & differentiate private key and public key.

c)   Functions of signing and verifications of digital signature.

d)   Explain system security standards.

e)   Viruses related threats.

UNIT - I

2)   a)   What do you mean by cryptanalysis? Give an example.

b)   Explain the key generation. Encryption and decryption of SDES algorithm in detail.

OR

c)   Describe the block cipher modes of operation in detail.

d)   Mention the strengths and weaknesses of DES algorithm.

UNIT - II

3)   a)   Discuss about
i)   Testing for primality   ii)   Discrete logarithms

b) Why is SHA more secure than MD5? How does SHA – 1 logic procedure message digest.

OR

c) What is message authentication? Discuss about challenge / response approach in mutual Authentication.

d) Discusss about MD5 algorithm. Give examples of its usage.

UNIT - III

4) a) Describe briefly about X- 509 authentication procedures. And list out the draw backs of X.509 version 2.

b) Discuss about the features and importance of IP security Architecture.

OR

c) Explain the IP services provided by AH (Authentication Header) and ESP (Encapsulating Security Payload) protocols.

d) Explain definition, phases, types of virus structures and types of viruses.

UNIT - IV

5) a) Describe the SSL Architecture indetail.

b) Discuss the types of intrusion detection Systems.

OR

c) Explain the different types of firewall and its configurations indetail.

d) List out the participants of SET system & explain.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper - V : Soft Computing

Time : 3 Hours   **Maximum Marks: 75**

__Answer Question No.1 is compulsory__   *(15)*

__Answer one question from each unit__   *(4×15 = 60)*

1)   Write a short notes on.

     a)   Hopfield network.

     b)   Fuzzy automata and languages.

     c)   Simulated Annealing.

     d)   Fitness computation.

     e)   Frames.

UNIT - I

2)   Explain.

     a)   Supervised and unsupervised algorithm.

     b)   Perceptron algorithm.

OR

3)   a)   Explain Kohenen self-organizing maps with an example?

     b)   Explain multilayer perceptron? Give one example.

UNIT - II

4)   Explain five methods of defuzzification in detail.

OR

5)   Discuss about ANFIS architecture briefly.

UNIT - III

6) a) Explain rank space method.

b) Explain genetic algorithms with example.

OR

7) Briefly discuss about K-means clustering with example.

UNIT - IV

8) Explain.

a) Al search algorithm

b) Predicate calculus.

OR

9) Explain

a) Semantic networks

b) Applications of soft computing.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper - VII : Industrial Management

Time : 3 Hours   Maximum Marks: 75

Answer any Five questions

All questions carry equal marks

1)   What are the features of sole trader concern?

2)   State the functions of management.

3)   Draw equivalent cash flow diagram.

4)   Explain different methods of providing depreciation.

5)   Bring out the significance of motivation.

6)   Give an account of techniques used in job analysis.

7)   Elucidate the methods of training employed in a concern.

8)   What are the requirements of inventory management?

9)   Enumerate the stages in product life cycle.

10)   How is EOQ computed? State its significance.

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(DCS / DIT 422)

Time : 3 Hours   Maximum Marks: 75

Answer Question No.1 is compulsory   *(15)*

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

1)   Write short note on:

     a)   Pipelining.

     b)   Superscalar Processors.

     c)   Static Arithmetic.

     d)   Control flow.

     e)   Routing.

UNIT - I

2)   Explain:

     a)   Control flow versus data flow.

     b)   Multivector and SIMD computers.

OR

3)   Explain static interconnection network and multiprocessor mechanisms.

UNIT - II

4)   Describe the various mechanisms for instruction pipelining.

OR

5)   Describe briefly about CISC and RISC scalar processors.

UNIT - III

6) Describe briefly about dataflow Architectures.

OR

7) Explain:

   a) Snooping bus protocols.

   b) Latency-Hiding Techniques.

UNIT - IV

8) Explain Parallel Models, Languages and compilers in detail.

OR

9) Explain message passing programming development.

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B.Tech. DEGREE EXAMINATION, DECEMBER – 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper - IX : Data Warehousing & Data Mining

Time : 3 Hours   Maximum Marks: 75

<u>*Answer Question No.1 is compulsory*</u>   *(15)*

<u>*Answer ONE question from each unit*</u>   *(4×15 = 60)*

1) a)   Define tinning.

   b)   What is Quartiles?

   c)   Explain Prediction.

   d)   Classification.

   e)   Data warehouse.

UNIT - I

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

OR

3) a)   Explain the major issues in Data Mining.

   b)   Explain Data Mining Functionalities.

UNIT - II

4) Define apriori algorithm. Explain the steps to improve apriori algorithm.

OR

5) a)   Explain Association rules of Mining.

   b)   Mining single-dimensional Boolean Association rules from Transactional Databases.

UNIT - III

6) What is Bayesian classification? Explain navie Bayesian classification.

OR

7) What is prediction? Explain classification methods.

UNIT - IV

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

OR

9) Explain Density-Based Methods.

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(DCS 424 A)

B.Tech. DEGREE EXAMINATION, DECEMBER - 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper - X : Embedded Systems

Time : 03 Hours　　　　　　　　　　　　　　**Maximum Marks : 75**

Answer Question No.1 is compulsory

Answer One question from each unit

1) Write short notes on:

   a) What are the different memory devices used in embedded systems.

   b) Rules to be followed by the interrupt routines in RTOS.

   c) Explain the role of power consumption in embedded applications.

   d) What is hardware co- simulation?

   e) Whether "An automatic teller machine" is a hard/soft real time systems. Justify your answer.

UNIT –I

2) What is DMA operation in a computer? Why is it required in a computer? Explain clearly how it is implemented.

OR

3) What are the various hardware functional blocks required to build a typical embedded system? Briefly explain their features and use.

UNIT –II

4) a) What is the Real-Time system give an example.

b) Give justifications for using a multitasking RTOS for embedded systems. Explain the different states of a task in the system with the help of a state transition diagram.

OR

5) Discuss about the functions of a scheduler in an RTOS and how does the scheduler carryout these functions.

UNIT –III

6) a) Why timer functions are required in RTOS? Briefly discuss how they are provided.

b) Explain the need for encapsulating semaphores and queues.

OR

7) a) How memory management is done by an RTOS?

b) Explain the Role of events in RTOS.

UNIT –IV

8) Explain the differenes between an "Host computer system" and a target system interms of their hardware and software.

OR

9) Why in general an Host machine is used for the developments of an embedded system software. Explain various software development tools provided by a Host system.

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B.Tech. DEGREE EXAMINATION, DECEMBER - 2015

(Examination at the end of Final Year)

COMPUTER SCIENCE

Paper – X : TSP & PSP

Time : 03 Hours   **Maximum Marks : 75**

**Answer Question No.1 is compulsory**   _**(15)**_

**Answer One question from each unit**   _**(4×15=60)**_

1)   Write a short notes on:

     a)   Software Development process.

     b)   Personal software process.

     c)   Product planning.

     d)   Managing Schedules.

     e)   Defects.

UNIT –I

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

<div align="center">OR</div>

3)   Explain Time Management and Tracking Time Differentiate it.

UNIT –II

4)   Explain period of product planning with an example.

<div align="center">OR</div>

5)   Give a brief explanation about software development life cycle.

UNIT –III

6) Explain about finding Defects and the code Review checlist.

OR

7) a) How do you calculate yield values and estimate the ultimate yield?

b) Define quality control cost.

UNIT –IV

8) Explain:

a) A personal commitment of quality.

b) Economics of Defects Removal.

OR

9) Contrast product quality and process quality.

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