75

8E5001

Roll No. _____ [Total No. of Pages : 2]

8E5001

B. Tech. VIII Semester (Main/Back) Examination-2014

Computer Science

8CS1 Mobile Computing

(Common with 8IT4-1, 8CS1)

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from **each** unit. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Explain various Adaptability issues related to the mobile computing. **(8)**
   b) What is mobile computing? Describe Mechanism for adaptation. **(8)**

OR

1. a) Explain principle and techniques of Location management in detail. **(8)**
   b) Describe energy efficient network protocols. **(8)**

Unit - II

2. a) Discuss the concept of broad cast disk scheduling. **(6)**
   b) What is mobile web caching? Explain mobile cache maintenance schemes. **(10)**

OR

2. a) What are mobile agents? Explain the concept of fault Tolerance using distributed Transactions. **(8)**
   b) Explain the concept of Reliable Agent transfer also discuss network security testing using mobile agents. **(8)**

Unit - III

3. Explain various methods for service discovery and standardization in detail. **(16)**

OR

3. a) Describe unicast discovery and multi-cast discovery in detail. **(10)**
   b) Write short note on Garbage collection. **(6)**

Unit - IV

4. What is Pervasive computing? Describe decentralization diversification. Connectivity, simplicity incorporate to Pervasive computing. **(16)**

OR

4. a) Give classifications and characteristics of mobile devices. **(8)**
   b) Describe smart tokens and smart seasons in detail. **(8)**

Unit - V

5. Explain web service Architecture in detail also describe web Services. **(16)**

OR

5. Explain following:
   a) Portal Infrastructure
   b) DECT standard
   c) IMT - 2000 standard.
   d) Web service security. **(4×4)**

8E5002

Roll No. _____ [Total No. of Pages : 2

8E5002

B. Tech. VIII Semester (Main/Back) Examination-2014

Computer Science

8CS2 Information System and Securities

(Common for 8 CS 2 & 8 IT 2)

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from **each** unit. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. What do you mean by abelian group? Prove that a set of integer under addition (Z,+) is an abelian group? **(16)**

OR

1. Explain the following with example
   i) Fermat's little theorem.
   ii) Euler's Totient function.
   iii) Euler's theorem
   iv) Discrete logarithm **(16)**

Unit - II

2. What are the basic difference between passive and active attack? Explain the following cryptographic technique
   a) Substitution technique
   b) Transposition technique. **(16)**

OR

2. What do you mean by link to link and end to end encryption. Explain the concept of confusion and diffusion in block cipher? **(16)**

Unit - III

3. Explain the concept of public key cryptography or asymmetric key cryptography with example? Differentiate between them? **(16)**

OR

3. Explain the role of RSA algorithm in public key Cryptography. Explain the RSA algorithm with example? Explain the Diffie Hellman key exchange algorithm with example. **(16)**

Unit - IV

4. Why we need Message authentication justify your answer. Explain the concept of MAC and its functions and what is Hash function? Explain it? **(16)**

OR

4. What is the Format of x.509 authentication certificate and the hierarchy of x.509 certificate? Explain various services provided by PGP. **(16)**

Unit - V

5. Why SSL is important? Explain the working of SSL using diagram what are the difference between SSL, SET and TSL. **(16)**

OR

5. Draw and explain the various field of authentication header. Also explain the position of authentication header in IPV4 and IPV6 packet format. **(16)**

8E5003

Roll No. _____ [Total No. of Pages : 2]

8E5003

B. Tech. VIII Semester (Main) Examination-2014

Computer

8CS3 Distributed Systems

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from **each unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) What are the design issues in Cooperative Autonomous systems? Discuss. (8)

   b) How will you ensure the consistency of a cut in state recording of the various process? Explain. (8)

OR

1. a) What are the design issues in Distributed operating system? Discuss. (8)

   b) What is the significance of marker in Chandy - Lamport algorithm? Explain. (8)

Unit - II

2. a) What do you understand by 'language mechanisms for Synchronisation'? Explain. (8)

   b) Where do you need RPC? Explain with a suitable example. (8)

OR

2. a) What do you understand by 'Transaction communication'? Explain. (8)

   b) Is there any difference between RPC and RMI? Explain. (8)

Unit - III

3. a) Why do you need dynamic load sharing and balancing? Explain. (8)

   b) Describe Andrew file system. (8)

OR

3. a) What are the issues in Concurrency control in a distributed file system? Explain. **(8)**

   b) Describe code file system. **(8)**

Unit - IV

4. a) What do you understand by Non - Uniform memory Access architecture? Explain. **(8)**

   b) How will you model a distributed computation? Explain. **(8)**

OR

4. a) What is a memory consistency model? Explain a particular model. **(8)**

   b) What are the different types of failures in distributed systems? Explain. **(8)**

Unit - V

5. a) What is the need of Update propagation in replica data management? Explain. **(8)**

   b) What do you understand by Byzantine agreement? Explain. **(8)**

OR

5. Write short notes on (any **two**) : **(2×8)**

   a) CORBA RMI

   b) Atomic Multicast

   c) Randomized distributed agreement.

8E5005

Roll No. _____ [Total No. of Pages : 2

8E5005

B. Tech. VIII Semester (Main/Back) Examination-2014

Computer Science

8CS4.2 Real Time Systems

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five questions, selecting one** question from **each unit**. All questions carry **equal marks**. (Schematic diagrams must be shown wherever necessary. Any data you feel **missing** suitably be assumed and stated clearly. Units of quantities **used/calculated must be** stated clearly.)*

Unit - I

1. a) What is real time system? Explain with an example. How it is different from general purpose computer system? **(8)**

   b) Explain Radar signal processing system in detail? Also explain the process of tracking the signals in Radar. **(8)**

OR

1. a) What are timing constraints? Explain different types of timing constraints in detail. **(8)**

   b) Explain Tardiners in brief? Also explain how it affect the soft and hard real time Jobs? **(8)**

Unit - II

2. a) Explain the following :

   i) Weighted Round Robin Approach

   ii) Precedence of Graph. **(4+4=8)**

   b) What is periodic Task Model? Explain period, Execution time and phone of periodic Tasks. **(8)**

OR

2. a) Explain off-line and on-line Scheduling and list out main differences between off-line and on-line Scheduling with examples. **(8)**

   b) Write short notes on :

   i) Static v/s Dynamic systems

   ii) Real Time work load v/s Real Time scheduling. **(4+4=8)**

Unit - III

3. a) Explain clock deriven Scheduling with example? **(8)**
   b) Explain the notations and various assumptions for periodic deriven Scheduling. Also explain the various fixed priority Scheduling Algorithm? **(8)**

OR

3. Write short notes on : **(8+8=16)**
   i) Scheduling of RM and DM
   ii) General structure of cyclic Scheduling.

Unit - IV

4. Write short Notes on :
   a) Polling server
   b) Deferrable server
   c) Slack stealing
   d) Firm deadline Model. **(4×4=16)**

OR

4. Explain the Scheduling of Flexible computations in detail with suitable examples? **(16)**

Unit - V

5. a) Explain "stack Based priority ceiling protocols" for multiple unit resources with example? **(8)**
   b) What is 'RAC"? Discuss the effects of resources contention? **(8)**

OR

5. a) What is priority inversion? How it takes place, explain with an example? Also explain that how it is related to critical section? **(8)**
   b) Explain basic priority ceiling protocol and priority inheritance protocol in detail? **(8)**

8E5007

Roll No. _____ [Total No. of Pages : 2]

8E5007

B. Tech. VIII Semester (Main/Back) Examination-2014

Information Tech.

8IT1 Software Testing & Validation

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from **each** unit. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. Differentiate following.
   a) White box testing and black box testing. **(8)**
   b) Verification and validation. **(4)**
   c) Testing and validation. **(4)**

OR

1. a) What are the different V& V activity performed at the coding phase of software development process? Explain. **(8)**
   b) Discuss glass box testing. **(8)**

Unit - II

2. a) How functional testing is different from non-function testing? Explain . **(8)**
   b) Explain different steps involved to obtain Defect bash? **(8)**

OR

2. a) Explain the Methodology for performance testing. **(8)**
   b) Write short note on
      i) Scenario testing.
      ii) Acceptance testing. **(8)**

Unit - III

3. What is regression testing? How is it different from development testing? Discuss the regression test selection algorithm using suitable example. **(16)**

OR

3. Write short note on
   a) Exploratory testing
   b) locale testing.
   c) Language testing.
   d) Buddy testing. **(16)**

Unit - IV

4. a) What is object oriented testing? Explain the testing methods applicable at class level. **(8)**
   b) What is usability testing? Explain the Quality factor for usability. **(8)**

OR

4. a) Describe accessibility testing in detail. Discuss basic and product accessibility. **(8)**
   b) Discuss the various tools for usability **(4)**
   c) When do we implement usability testing. **(4)**

Unit - V

5. a) Why it is important to develop test cases for both invalid and valid input conditions? **(4)**
   b) What is test metrics? Describe the following test metrics:-
      i) Project metrics.
      ii) Productivity metrics **(12)**

OR

5. Write short note on **(16)**
   a) Software test automation.
   b) Test process and reporting.

85

8E5008

Roll No. _____ [Total No. of Pages : 2

8E 5008

B.Tech. VIII Semester (Main/Back) Examination - 2014

Information Technology

8IT3 Data Compression Techniques

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Write down the application of lossless compression. **(8)**
   b) Explain Kraft - McMillan inequality in detail. **(8)**

OR

1. a) Explain Haffman coding. Also write down its Encoding Algorithm **(8)**
   b) What is Rice code? Explain in detail. **(8)**

Unit - II

2. a) Explain Arithmetic loding in detail. Also write down its algorithm. **(8)**
   b) Write down the differences between LZ77 and LZ78 **(8)**

OR

2. a) Define move-to-front encoding **(8)**
   b) Explain facsimile encoding. Also define its types. **(8)**

Unit - III

3. a) Explain rate distortion theory and its uses in detail. **(8)**
   b) Give the difference between uniform quantization and non-uniform quantization **(8)**

OR

3. a) Give the difference between vector quantization and scalar quantization **(8)**

b) Explain lattice algorithm and give the advantage of lattice algorithm (8)

Unit - IV

4. a) Define the steps required in DPCM compression of images and video signals. (8)

b) Design the CVSD decoder block diagram. (8)

OR

4. a) Define the performance measurement of delta modulation. (8)

b) Explain in detail

i) z-transform

ii) DCT (8)

Unit - V

5. a) List out the applications used in wavelet based compression (8)

b) Discuss various MPEG standards. (8)

OR

5. a) Explain the basic sub band coding algorithm (8)

b) What is filter? Write out some filters used in sub band coding? (8)

8E4014

Roll No. _____ [Total No. of Pages : 2

8E4014

B.Tech. VIII Semester (Old/Back) Examination - 2014
Computer Science Engineering
8CS1 Information System and Securities

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Explain types of security attacks and also explain security services with suitable diagrams. **(8)**

   b) Explain substitution and transposition techniques with three examples each. **(8)**

OR

1. a) Explain all the steps of DES with triple DES. **(8)**

   b) Write down all block Cipher models of operation and explain with neat diagram in detail. **(8)**

Unit - II

2. a) State and prove Euler's theorem. **(6)**

   b) Write short notes on

      i) RSA Algorithm

      ii) Diffle-Hellman key exchange Algorithm. **(10)**

OR

2. a) State and prove Chinese Reminder theorem. **(6)**

   b) Solve the following :

      i) $17^{-1} \pmod{101}$

      ii) D, if $7d=1 \pmod{30}$

      iii) Remainder when 3^{181} is divided by 17

      iv) 3^{247} Modulo 25 **(2½×4=10)**

Unit - III

3. a) Why message authentication required? Explain various authentication protocols. (6)

   b) Write short notes on

      i) Birthday attack

      ii) Digital signature. (2½+2½=5)

   c) Explain secure has h algorithm (SHA1) and compare it with MDS message digest algorithm. (5)

OR

3. a) What is digital signature standard (DSS). Explain with DSS approach. (8)

   b) What is message authentication code (MAC)? Explain types of MAC. (8)

Unit - IV

4. a) What problem was Kerberos designed to address and explain Kerberos in detail? (8)

   b) What is the purpose of the X.509 standard and how is an X.509 certificate revoked? (8)

OR

4. a) Explain pretty good privacy (PGP) with general structure of private and public key rings. (8)

   b) Explain secure/Multipurpose internet mail extension with its functionality. (8)

Unit - V

5. a) Explain encapsulating security pay load with IPSec format. (6)

   b) What are transport and tunnel modes of encryption. (5)

   c) How security association combined and what is the purpose of association in confidentiality and authentication? (5)

OR

5. Write short notes on :

   a) Secure socket layers.

   b) Secure Electronic Transaction

   c) ISAKMP

   d) Firewall Design principles. (16)

Roll No. _____ [Total No. of Pages : 2

8E4015

B.Tech. VIII Semester (Old Back) Examination - 2014
Computer Science Engineering
8CS2 CAD FOR VLSI Design

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Draw and explain the graph for "productivity gap"? Also explain the need for CAD tools. **(8)**

   b) What do you understand by modern digital systems? Draw the design flow of digital systems. **(8)**

OR

1. a) Explain Moore's law in the context of VLSI chip complexity and diversity? **(8)**

   b) Draw the schematic for ASIC design flow and explain every step in brief. **(8)**

Unit - II

2. a) Describe the VHDL background and what is the requirement for VHDL. **(8)**

   b) What is the top down design? Explain the recursive partitioning algorithm for top down design. **(8)**

OR

2. a) Explain the following with syntax and example

      i. Entity declaration.

      ii. Architecture declaration. **(8)**

   b) Write VHDL code 4-to-1 multiplexer specified using case statement. **(8)**

Unit - III

3. Explain the Design organization and parameterization in detail? **(16)**

OR

3. a) Explain the different types of operators used in VHDL? **(8)**

   b) What is test bench in VHDL? Write the test bench for D-Flip flop. **(8)**

Unit - IV

4. a) How many types of subprogram in VHDL? Explain each subprogram with syntax and example. **(8)**

   b) Explain the concept of overloading in VHDL with suitable program. **(8)**

OR

4. a) Distinguish between bi-directional component modeling and multi mode component modeling with example. **(8)**

   b) Explain the following with example-

      i. Predefined attributes.

      ii. User defined attributes. **(4×2=8)**

Unit - V

5. a) Draw the block diagram for MOORE-TYPE FSM and explain it using state diagram? **(8)**

   b) Write VHDL code for MEALY-TYPE FSM. **(8)**

OR

5. Write short notes on:

   a) Combinational logic synthesis

   b) Sequential circuit synthesis. **(8×2=16)**

8E4016

Roll No. _____ [Total No. of Pages : 2

8E4016

B.Tech. VIII Semester (Old Back) Examination - 2014
Computer Science Engg.
8CS3 Advanced Computer Architecture

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Explain pipelining and Replication Techniques used in various parallel computer Architectures. **(8)**

   b) Explain functional parallelism in Imperative programming languages. **(8)**

OR

1. a) Explain Thread Creation and Termination methods in Concurrent languages. **(8)**

   b) Discuss Influence of parallel Architecture on programming languages constructs for efficient parallelism. **(8)**

Unit - II

2. Explain various Dependencies between Instructions while Execution is in parallel. **(16)**

OR

2. Draw the logical layout and explain physical implementation of the pipelines in pentium processor. **(16)**

Unit - III

3. Explain the Archi cture of the message Driven processor to support fine grain concurrent programs. **(16)**

OR

3. Explain following Machines.

   a) UMA

   b) NUMA

   c) cc-NUMA

   d) COMA **(4×4=16)**

Unit - IV

4. With the help of suitable example, explain following techniques for parallel Algorithm design :

   a) Divide and conquer

   b) Randomization

   c) Parallel pointer Manipulation **(16)**

OR

4. Write sequential Quick sort algorithm and convert it to parallel Quick sort algorithm. Also discuss performance of both. **(16)**

Unit - V

5. Write short notes on following:

   a) Open MP

   b) Open MP constraints. **(8×2=16)**

OR

5. a) MPI

   b) MPI constraints. **(8×2=16)**