8E5003

Roll No. : _____ Total Printed Pages : 2

8E5003

B. Tech. (Sem. VIII) (Main) Examination, April/May-2012
Computer Science
8CS3 Distributed Systems

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

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.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. Nil 2. Nil

UNIT - I

1 Explain different types of operating systems in detail. 16

OR

1 (a) What do you mean by distributed computing environment (DCE) ? Explain its features, services and goals. 8

(b) What do you mean by state recording of distributed system ? Explain your answer using Chandy-La-inport's algorithm. 8

UNIT - II

2 (a) Explain client server model is distributed system. 8

(b) Explain the difference between message passing and shared variable synchronization. 8

OR

2 (a) What is RPC ? Explain its protocol and working. 8

(b) Write short notes on Java RMI case study. 8

UNIT - III

3 (a) What is static process scheduling ? Write the advantages of static process scheduling. 8

(b) What do you mean by distributed file system ? Explain its design and implementation. 8

OR

3 (a) Discuss transaction services and concurrency control in detail. 8

(b) Write short notes on :
(i) Sun network file system
(ii) Code file system. 8

UNIT - IV

4 (a) Explain different DSM implementation approaches. 8

(b) Define consistency. Explain various consistency models. 8

OR

4 (a) List and explain distributed deadlock detection algorithm. 10

(b) Explain mutual exclusion algorithm with example. 6

UNIT - V

5 (a) Explain the concept of fault, failure and recovery. 8

(b) Explain replication of data in detail. Also give its classification. 8

OR

5 Discuss CORBA case study in detail. 16

8E5001

Roll No. : _____ Total Printed Pages : 2

8E5001

B. Tech. (Sem. VIII) (Main) Examination, April/May - 2012
Computer Science
8CS1 Mobile Computing

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

*Attempt any **five** questions.*
*Selecting **one question** form **each unit**. All questions carry equal marks. Schematics diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*
Unit of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)
1. Nil 2. Nil

UNIT - I

1 (a) Define Mobile Computing. Explain Mechanism for adaptation and incorporation adaptations.
(b) What are the issues in Mobile computing ? Explain in detail.
8+8

OR

1 (a) How location Management is identified in HLR-VLR and in Channel allocation in cellular system.
(b) Describe energy efficient indexing on air and algorithm.
8+8

UNIT - II

2 Describe Caching Management in Mobile, cache management schemes and Mobile web Caching.
16

OR

2 (a) Explain Mobile agent security and fault tolerance using distributed transaction.

(b) Explain architecture of secure agent system.

8+8

UNIT - III

3 (a) What is Services discovery and Standardization method ?

(b) Describe unicast discover, multicast discovery and advertisement.

8+8

OR

3 Define following terms :

(i) Garbage collection

(ii) Service catalogs

(iii) Eventing

(iv) Universal plug n play.

4×4

UNIT - IV

4 Explain mobile devices along with their classification, characteristics and limitation.

16

OR

4 What is smart identification ? Explain its various types.

16

UNIT - V

5 Write short notes on : (any two)

(i) Web Services Description language

(ii) Web Service Security

(iii) IrDA Architecture and Protocol stake.

2×8=16

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8E5002

B. Tech. (Sem. VIII) (Main) Examination, April/May -2012
Computer Science
8CS2 Information System & Securities (Common for CS & IT)
(Common with 8CS2, 8IT2)

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

Attempt any five questions.
Selecting one questions form each unit. All question carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clerly.
Unit of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)
1. Nil 2. Nil

UNIT - I

1 (a) State and prove Euler's Theorem. 6

(b) Discuss Chinese remainder theorem in detail. 10

OR

1 Write short note on :
(i) Group
(ii) Field
(iii) Ring
(iv) Galois field

4×4=16

UNIT - II

2 (a) Differentiate following :
(i) Active attack and passive attack.
(ii) Diffusion and confusion. 8

(b) Describe the following transposition techniques with suitable example.

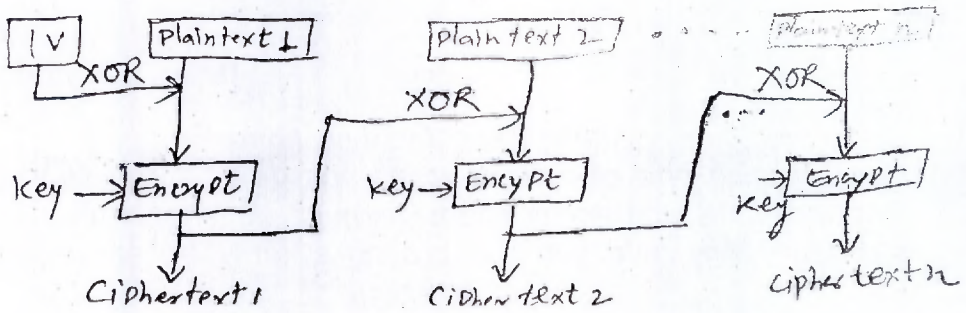
(i) Vernam Cipher

(ii) Simple columnarTransposition Technique. 8

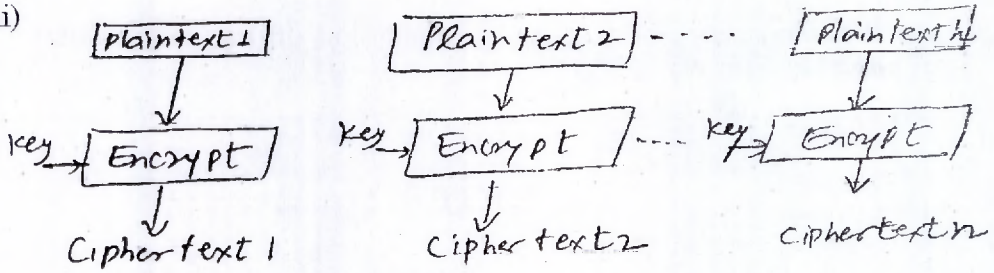
OR

2 (a) Draw the decryption process of following. 6

(i)



(ii)



(b) Explain International Data encryption Algorithm (IDEA) in detail and also discuss the use of key shifting technique in IDEA. 10

OR

2 (a) How many keys are required for secure communication among 1000 person if.

(i) Symmetric key encryption algorithm is used

(ii) Asymmetric keykey encryption algorithm is used. 6

(b) Describe the DES (Data Encryption Standard) algorithm in detail. 10

8E4017

Roll No. : _____ Total Printed Pages : 3

8E4017

B. Tech. (Sem. VIII) (Back) Examination, April/May-2012
Computer Science
8CS4.1(O) Distributed Systems

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

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.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. Nil 2. Nil

UNIT - I

1 (a) What is the need of distributed system ? Explain distributed system with suitable examples. 8

(b) Define fundamental model. Explain the limitation of distributed system. 8

OR

1 (a) Why synchronization is necessary in distributed system ? Differentiate between Lamport's and vectors logical clocks. 8

(b) What is mutual exclusion in distributed system ? Explain token based and non-token based algorithm in mutual exclusion. 8

UNIT - II

2 (a) Write differences between centralized and distributed dead lock detection with suitable example. 8

(b) Explain deadlock avoidance and detection methods. 8

OR

2 (a) What is agreement protocol ? Explain Byzantine agreement problem with its solution. 8

(b) Explain path pushing algorithms. Define the role of atomic commit in distributed database system. 8

UNIT - III

3 (a) Define the role of middleware layer in distributed system. Explain communication between distributed objects. 8

(b) Explain architecture of distributed event notification. What is the role of client and server stub procedure in RPC ? 8

OR

3 (a) What is Digital signatures ? Explain digital signature with public and secret key. 8

(b) Write the characteristics of distributed file system. Explain Andrew file system with diagram. 8

UNIT - IV

4 (a) What is nested transactions ? Briefly explain locks in transactions. 8

(b) Define time stamp ordering. Explain comparison of methods for concurrency control. 8

OR

4 (a) Briefly explain fault tolerant services in replication with example. 8

(b) Explain atomic commit protocol and distributed deadlocks in distributed transactions. 8

UNIT - V

5 (a) Explain balanced sliding window protocol. Define routing algorithm.

8

(b) Explain architecture of CORBA with diagram. Define IDL module for CORBA.

8

OR

5 (a) Write short notes on :

(i) APP problem.

(ii) Election algorithm.

8+8

8E4016

Roll No. : _____ Total Printed Pages : 3

8E4016

B. Tech. (Sem. VIII) (Back) Examination, April/May-2012
Computer Science
8CS3(O) Advanced Computer Architecture

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

*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.*

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. Nil 2. Nil

UNIT - I

1 (a) Explain parallelism in uniprocessor systems. 8

(b) How SIMD computers differs from MIMD ? 8

OR

1 Distinguish between :

(i) Uniprocessor systems and multiprocessor systems.

(ii) Serial processing and parallel processing.

(iii) Array computers and Multiprocessor systems

(iv) Flynn's classification and Feng's classification.

4×4=16

UNIT - II

2 (a) Explain Snoopy protocols. Differentiate between snoopy and scalable protocols. 8

(b) What is ILP ? Explain in detail how do we exploit ILP. 8

OR

2 (a) Calculate collision vector and state diagram for the function X. 8

	1	2	3	4	5	6	7	8
S_1	X					X		X
S_2		X		X				
S_3			X		X		X	

(b) How optimization of memory hierarchy take place ? 8

UNIT - III

3 (a) Explain distributed memory MIMD system design. 8

(b) What are systolic Architectures ? 8

OR

3 (a) Describe Multi threaded Architecture. 8

(b) What is data clustering ? 8

UNIT - IV

4 (a) What do you mean by PRAM model and PRAM algorithm ? 8

(b) Describe Jacobi algorithm. 8

OR

SE/BE/5

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8E4015

B. Tech. (Sem. VIII) (Back) Examination, April/May-2012
Computer Science
8CS2(O) CAD FOR VLSI Design

Time : 3 Hours] [Total Marks : 80
[Min. Passing Marks : 24

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.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. Nil 2. Nil

UNIT - I

1 (a) Explain the process of Digital System Design with the help of flow diagram. 8

(b) What do you understand by FPGA design ? Explain the FPGA design flow with the help of flow chart. 8

OR

2 (a) Explain the significance of Productivity Gap in terms of time to the Market and Design Complexity. 8

(b) Describe the following terms in connection with ASIC Design process.

(i) Logic synthesis and system partitioning
(ii) Prelayout simulation
(iii) Floor planning and Placement
(iv) Routing and Extraction. 8

UNIT - II

3 (a) How VHDL differs from other software programming languages in terms of advantages ? Explain the basic requirement features of VHDL.

2+6

(b) Describe and write syntax for following in VHDL.

(i) Entity and Architecture.

(ii) Package

(iii) Configuration and Binding Approach.

8

OR

4 (a) Explain the Level of Abstraction in VHDL with suitable examples.

8

(b) Explain the constraint to characterize the Hardware Description Languages. What do you mean by Top-Down Approach in VHDL ?

8

UNIT - III

5 (a) Describe the following terms in VHDL with suitable example.

(i) **Transport Delay and Inertial Delay**

(ii) **Multiple Drivers**

8

(b) Describe the various types of operators used in VHDL.

8

OR

6 (a) Draw the waveform for below mentioned code.

```
Architecture sequential of discarding-old is
SIGNAL x : rit : = 'Z' ;
BEGIN
    PROCESS
        BEGIN
        X < = '1' After 5 ns;
        X <= Transport '0' after 3 ns;
    Wait;
end PROCESS;
end sequential;
```

8

(b) Write the VHDL code for half adder circuit using all three types of modelling styles.

8

UNIT - IV

7 (a) Write short notes on the following :

(i) Overloading concept in VHDL.

(ii) Difference in predefined attributes and user defined attributes.

8

(b) Explain VHDL subprogram parameters.

8

OR

8 Explain the following with suitable examples.

(a) Bi-Directional component modeling.

(b) Multi-mode component modelling.

8+8

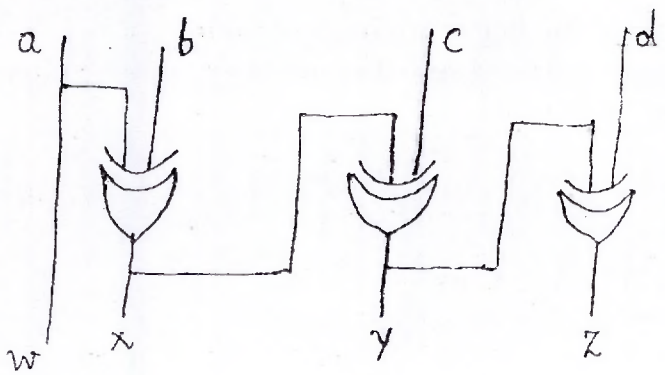
UNIT - V

9 (a) Write the VHDL code for 8 bit shift register with positive-edge clock and serial in serial out.

8

(b) Write the VHDL code for Gray to Binary Converter Circuit Diagram is given below.

8



OR

8E5005

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8E5005

B. Tech. (Sem. VIII) (Main) Examination, April/May-2012
Computer Science
8CS4.2 Real Time Systems

Time : **3** Hours] [Total Marks : 80
[Min. Passing Marks : 24

*Attempt any **five** questions.*
*Selecting **one question** form **each unit.** All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clerly.*
Unit of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)
1. Nil 2. Nil

UNIT I

1 (a) What is real time system ? Explain with example. 8

(b) What are the different performance measurements of Real Time System ? 8

OR

1 Write briefly on following :

(a) Hard and Soft Real time system. 4

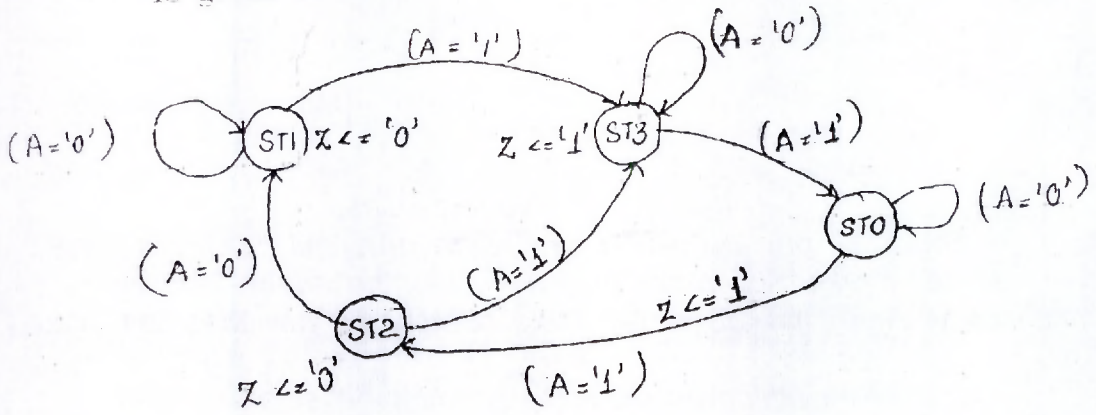
(b) Various time constraints of Job. 4

(c) Deadline and Execution time. 4

(d) Period and Release time. 4

10 (a) What is the **difference** between **Mealy and Moore** Machine. 6

(b) Write the VHDL code for following **Moore** FSM. State diagram is given below.



Assuming 'A' and clk as input signal, Z as output signal ST0, ST1, ST2, ST3 are state types. **10**
