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8E5001**8E5001****B.Tech. VIII Semester (Main/Back) Examination - 2013****Computer Science****8CS1 Mobile Computing (Common for 8IT4.1)****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 mobile computing and challenges against mobile computing? (8)
- b) Explain mechanisms for adaptation and incorporating adaptation. (8)

OR

1. a) Discuss public communication services location management with suitable example? (8)
- b) Explain Energy efficient indexing on air. (8)

Unit - II

2. a) What is data dissemination and explain its model? (8)
- b) Explain Broadcast disk scheduling. (8)

OR

2. a) Explain mobile agent security and fault tolerance using distributed transactions? (8)
- b) Discuss caching management in mobile and cache management schemes. (8)

Unit - III

3. a) Describe unicast discovery, multicast discovery and advertisement? (8)
- b) What is services discovery and standardization method? (8)

OR

3. Write short note on:

- i) JINI
- ii) Service catalogs
- iii) Garbage collection
- iv) UPnP (universal plug n play)

(4×4=16)

Unit - IV

- 4. a) Define the term "pervasive computing". Write down the principles of pervasive computing. (8)
- b) What is smart Identification? Explain its various types. (8)

OR

4. Write short note on the following:

- i) Smart card
- ii) Smart sensor and actuators
- iii) Smart label
- iv) Smart token

(4×4=16)

Unit - V

5. Describe irDA-Architecture and protocol stack? (16)

OR

5. Write short note on:

- i) Universal description, discovery and integration (UDDI)
- ii) Simple Object Access Protocol (SOAP)

(8×2=16)



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8E5002**8E5002****B.Tech. VIII Semester (Main/Back) Examination - 2013****Computer Science****8CS2 Information System and Securities****(Common for CS & IT)****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) Discuss the chinese remainder theorem. (8)
 b) Explain : (8)
 i) Galois field
 ii) Division algorithm.

OR

1. a) State and prove Fermat's little theorem. (8)
 b) What is Primitive root? Explain an algorithm to determine Primitive roots. Determine all the Permutive roots of (8)
 i) 19
 ii) 25

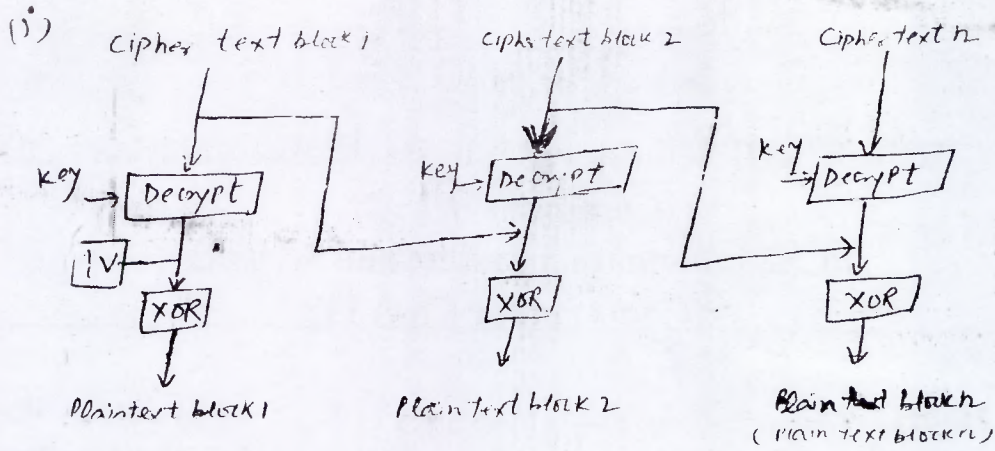
Unit - II

2. a) Using the following S-Box, determine 4 bit output for the following 6 bit input : (4)
 i) 101101 ii) 110010
 iii) 011010 iv) 101010

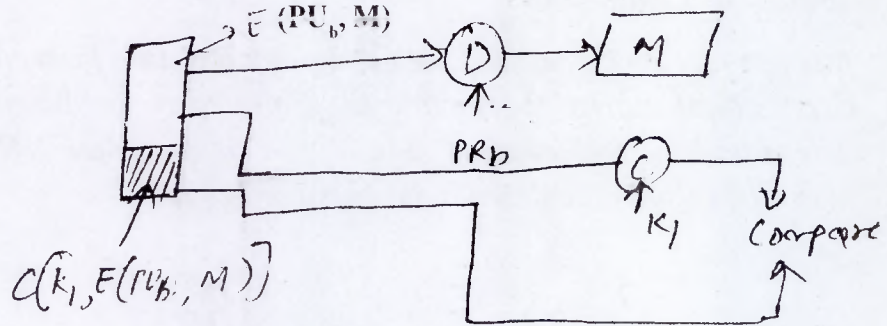
10	00	09	14	04	05	08	11	10	11	12	14	03	01	05	13
13	07	00	09	03	12	07	05	04	07	14	10	09	12	09	14
13	06	04	06	05	11	06	13	07	10	10	11	07	11	08	11
01	10	13	00	00	04	10	09	08	13	03	01	06	10	06	10

[S box for Question 2(a)]

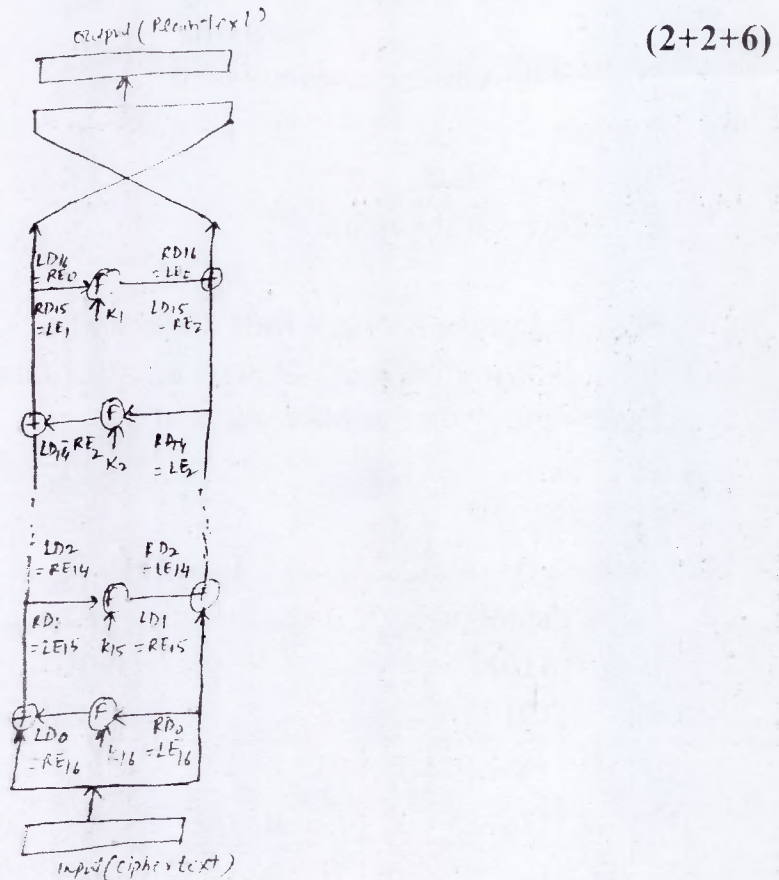
b) Draw the encryption process of following decryption process.



ii) Also calculate and append MAC at encryption end.



iii)



c) What is the difference between confusion and diffusion. (2)

OR

2. a) Discuss the keyshifting process of International Data encryption algorithm. Also generate the subkey for the each round and output transformation in IDEA. (2+8 = 10)
- b) In DES (Data Encryption Standard) Explain -
- i) Subkey Generation for each round.
 - ii) 64 bit key is converted into 56 bit key.
 - iii) Expansion permutation. (2+2+2=6)

Unit - III

3. a) Perform RSA Encryption / Decryption process for following set of Data.
- i) $P = 5$ $q = 11$ $e = 3$ $M = 9$
 - ii) $P = 11$ $q = 13$ $e = 11$ $M = 7$
 - iii) $P = 17$ $q = 31$ $e = 7$ $M = 2$ (3+3+3 = 9)
- b) Describe the distribution of Secret Keys using Public Key Cryptosystems. (7)

OR

3. a) Explain Diffie-Hellman key exchange algorithm in detail. Also discuss "Man in the Middle Attack" problem with suitable example. (5+5 = 10)
- b) Write a short note on Discrete logarithms. (6)

Unit - IV

4. a) What is the difference between Hash and MAC? Discuss the methods of accomplish the confidentiality and authentication using MAC and Hash. (2+8 = 10)
- b) What is the digital signature? How authentication is accomplish using digital signature? (6)

OR

4. a) Describe the MD5 algorithm in detail. Compare MD5 with SHA. (10)
- b) Describe the various authentication schemes for mutual authentication based on shared secret key. (6)

Unit - V

5. a) Explain the concept of Dual signature in context of Secure Electronic Transaction (SET). Briefly describe the sequence of events that are required for a SET transaction. (8)
- b) Explain the operational description of PGP in detail. (8)

OR

5. Write short note on : (16)
- a) S/MIME.
 - b) AH & ESP in transport Mode.



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8E5003

B.Tech. VIII Semester (Main/Back) Examination - 2013

Computer Science

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 is Distributed system? What are the basic features of Distributed system. (8)
- b) Explain Distributed Computing and its Paradigms. (8)

OR

1. a) Explain DCE Architecture model and its Components in detail. (8)
- b) Explain Chandy – Lamport algorithm for consistent state recording. (8)

Unit - II

2. a) What are the basic difference between vector and matrix logical clock? (8)
- b) Explain Two level concurrency of Process and Threads. (8)

OR

2. a) Explain Client Server Communication model on RPC and message passing? (8)
- b) Write Chang and Roberts ring election algorithm for Leader Election. (8)

Unit - III

3. a) Give the model of static process scheduling. (8)
b) Explain Rate Monotonic or Real time Scheduling. (8)

C R

3. a) What are the basic applications of Distributed Process Implementation? (8)
b) Give the brief description of DFS Design and Implementation. (8)

Unit - IV

4. a) Explain Write-Invalidate in Cache Coherence Protocols. (8)
b) How does AFS works in Coda file Systems? (8)

OR

4. a) What is Distributed Shared Memory? Explain any memory management Algorithm in detail. (8)
b) Explain Lamport timestamps. (8)

Unit - V

5. a) Explain Fault, Errors and Failure in Distributed System in brief. (8)
b) What is Replication? Explain in detail. (8)

OR

5. Write Short note on (Any 2) : (8×2=16)
a) CORBA Services
b) Byzantine Faults
c) Update Propagation

8E5005

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8E5005**B. Tech. VIII Semester (Main/Back) Examination - 2013****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) Define Real Time System (RTS). (4)
- b) What are the characteristics of R Time System? (4)
- c) What are the characteristics of Real Time System control? (8)

OR

1. a) Explain with example the various timing constrains. (8)
- b) Differentiate, with example, soft & hard RTS. (8)

Unit - II

2. a) What are the functional parameters of Job? Explain. (8)
- b) Explain briefly : (8)
 - i) Dynamic v/s static system
 - ii) Offline scheduling v/s online scheduling

OR

2. a) Explain weighted round robin approach for RTS. (8)
- b) Explain briefly Data Dependency & its type. (8)

Unit - III

3. Explain following :

- a) Priority driven Approach for Real Time Scheduling. (4)
- b) General structure of cyclic scheduler. (4)
- c) Rate monotonic (RM) algorithm. (4)
- d) Advantages of clock driven scheduling. (4)

OR

3. Explain following :

- a) Fixed Priority v/s Dynamic Priority scheduling. (4)
- b) Scheduling spordic jobs. (4)
- c) Deadline monotonic (DM) algorithm. (4)
- d) Disadvantages of clock driven scheduling. (4)

Unit - IV

- 4. a) What is a periodic task scheduling? Explain the assumption for a periodic task scheduling. (8)
- b) What is flexible application? Explain. (8)

OR

- 4. a) Explain following : (4×2=8)
 - i) Differ server
 - ii) Simple spordic server
- b) Explain scheduling approaches for periodic task. (8)

Unit - V

5. Explain following :

- a) Basic Priority celling protocol. (4)
- b) Concurrent access of Data objects. (4)
- c) Priority inheritance protocol for task execution. (4)
- d) Priority inversion and how it is related to critical section. (4)

OR

- 5. a) Differentiate between basic Priority celling protocol & priority inheritance protocol. (8)
- b) Give advantages and disadvantages of priority inheritance protocol. (8)

8E5007

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8E5007**B.Tech. VIII Semester (Main/Back) Examination - 2013****Information Technology****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. (Schematics 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 differences between verification and validation? Write down the Methods of verification and levels of validation. (4+4=8)
- b) What do you understand by the cyclomatic complexity? Write down the code Examining a given integer is prime or not and draw flow graph for above code and write down the test code after computing the cyclomatic complexity. (3+5=8)

OR

2. a) What do you understand by the white box testing? What is structural testing? (5+3=8)
- b) What are the differences between black box and white box testing? Explain Equivalence partitioning. (4+4=8)

Unit - II

3. a) What is integration testing? What is need of this testing and why it is necessary to Perform integration testing? (3+2+3=8)
- b) What is defect bush? List the practices that defect bush brings and are popular in Testing industry. (8)

OR

4. a) Write short notes on following : (2×4=8)
- i) Alpha Testing
 - ii) Beta Testing
 - iii) Stress Testing
 - iv) Reliability Testing
- b) What is performance testing? Write the tool and process for performance testing with suitable diagram. (8)

Unit - III

5. a) What is regressive testing? List the steps involved in doing regressive testing. (8)
- b) What do you understand by the terms internationalization, localization, globalization Concept of testing? Explain. (8)

OR

6. a) Define buddy and pair testing. What are the objectives of these testing? (8)
- b) What do you understand by Ad-Hoc testing? (8)

Unit - IV

7. a) What are differences between conventional and OO testing techniques. Write down the concepts of OO. (8)
- b) What is usability testing? Explain approaches of usability. (8)

OR

8. Explain usability and accessibility testing. (16)

Unit - V

9. a) Explain the Test planning and Test Management. (8)
- b) What are the types of metrics? Explain in brief. (8)

OR

10. a) Describe the test process and reporting. What is scope of automation? (8)
- b) What are the differences among project metrics, progress metrics and productivity metrics? Explain them with suitable example. (8)

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8E5008		
B.Tech. VIII Semester (Mair/Back) Examination - 2013		
Information Technology		
8IT3 Data Compression Technique		

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 do you mean by Compression? Describe different types of techniques and models used in data compression. (8)
- b) For an alphabet $A = \{a_1, a_2, a_3, a_4\}$ with probabilities $P(a_1) = 0.1, P(a_2) = 0.3, P(a_3) = 0.25, P(a_4) = 0.35$ find a Huffman code. (8)

OR

1. a) Draw a flowchart for Adaptive huffman encoding procedure and explain the process. (8)
- b) For an alphabet $A = \{a_1, a_2, a_3, a_4, a_5\}$ with probabilities $P(a_1) = P(a_3) = 0.2, P(a_2) = 0.4, P(a_4) = P(a_5) = 0.1$. Find minimum variance huffman code. (8)

Unit - II

2. a) Why we use Arithmetic coding and how does it generates tag explain with the help of example. (8)
- b) A sequence is encoded using LZW, algorithm, dictionary is

Index	Entry
1	a
2	b
3	h
4	i
5	s
6	t

O/P of encoder is 6 3 45 2 31 6 2 9 11. Find the sequence inputted. (8)

OR

2. a) Explain the working of LZ78 dictionary technique with an example. (8)
 b) Suppose sequence is
 cabracadabrarra.....
 Length of window is 13, size of look-ahead buffer is six. Encode using LZ77 approach. (8)

Unit - III

3. a) Differentiate between lossy and lossless coding. (4)
 b) What are different models of lossy coding. (4)
 c) Explain uniform quantization. (8)

OR

3. a) How does human visual system works. (6)
 b) Compare between uniform & non-uniform Quantization. (4)
 c) Explain rate distortion theory and show trade-off between rate & distortion. (6)

Unit - IV

4. a) Explain differential pulse code modulation in detail. (8)
 b) Delta modulation is a variant of DPCM explain and state advantages & disadvantages over PCM. (8)

OR

4. a) Explain adaptive DPCM in detail. (8)
 b) What is sampling technique & What are disadvantages of ideal sampling? (8)

Unit - V

5. a) Describe basic algorithm of sub-band coding. (8)
 b) Explain basic principles and filters in sub band coding. (8)

OR

5. Write short notes on :
 a) MPEG. (8)
 b) WAVELET based compression. (8)



8E4014

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8E4014**B.Tech. VIII Semester (Old/Back) Examination - 2013****Computer Science****8CS1 Information System and Security****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) If a bit error occurs in plain text block P1, how far does it propagate in CBS mode of DES and 8 bit CFB mode of DES. (12)
- b) Write short notes on following :
 - i) Creation & use of cookies. (2)
 - ii) Java Security. (2)

OR

1. a) With the help of your own assumptions, explain how to use the key complementation property of DES to speed up exhaustive key search by about a factor of two. (12)
- b) Write short notes on following :
 - i) Steganography. (2)
 - ii) Types of attack (2)

Unit - II

2. Discuss design requirements of elliptic curve crypto system. Also explain how secret keys are exchanged. (16)

OR

2. How discrete log is evaluated for a number and it's role in Diffie-Hellman key exchange scheme. (16)

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Unit - III

3. Explain MD5 message digest algorithm with block diagram along with its logic and compression function. (16)

OR

3. Why the leading two octets of message digest are stored in PGP message along with the encrypted message digest. (16)

Unit - IV

4. a) Discuss the scenario where Kerberos scheme is preferred. (6)
b) Explain the role of ticket granting server in Inter realm operations of Kerberos. (5)
c) Discuss technical deficiencies in Kerberos ver4 Protocol. (5)

OR

4. a) Explain X-509 authentication service and its certificates. (8)
b) Describe how PGP provides confidentiality and Authentication service for e-mail applications. (8)

Unit - V

5. Write short notes on following : (2 x 8)
a) Firewall design principles and its characteristics.
b) Attacks on packet filtering firewalls.

OR

5. a) Secure socket layer. (2 x 8)
b) Secure Electronic Transaction (SET).



8E4015

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8E4015**B.Tech. VIII Semester (Old Back) Examination - 2013****Computer Science****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) What do you understand by programmable logic devices? Compare and contrast between FPGA and CPLD. (8)
- b) What are the advantages and disadvantages of FPGAS? (8)

OR

1. a) Explain the following terms in connection with ASIC design flow
 - i) Design Entry
 - ii) Logic Synthesis
 - iii) System Partitioning / Floor planning.
 - iv) Prelayout simulation. / Post layout simulation (8)
- b) What is the need of modern CAD tools for chip design. (8)

Unit - II

2. Describe any two of the following in relation to VHDL (8 × 2= 16)
 - a) Simulation and synthesis of a program
 - b) Design entry and optimization of a design.
 - c) VHDL as a concurrent and sequential language

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OR

2. a) Give the syntax and example of any two of the following. (4 × 2 = 8)
- i) Process statement
 - ii) Case statement
 - iii) Loop and Exit statement
- b) Write the VHDL code for a full Adder circuit. (8)

Unit - III

3. a) Describe the following operators - giving suitable examples in VHDL (8)
- i) Shift operators
 - ii) Multiplying operators
- b) Write the VHDL code 3 bit UP/DOWN counter using any of the three types of modelling styles. (8)

OR

3. a) Describe any two of the following (8)
- i) Mealy and Moore machines
 - ii) Generate statement
 - iii) Functions and Procedures
- b) Write the VHDL code for an ALU for 4 bit operations. (8)

Unit - IV

4. Write short notes on any two of the following (8 × 2 = 16)
- a) VHDL Overloading
 - b) Predefined Attributes and user defined attributes
 - c) VHDL as a modelling language.

OR

4. a) Describe VHDL sub program parameters. (8)
- b) Write the VHDL code for a D flip flop and call it as a subprogram to model a 4 bit memory element. (8)

Unit - V

5. Draw the state diagram and write the VHDL code for a traffic light controller. (16)

OR

5. Write short notes on any two of the following.
- i) Types of ASIC
 - ii) ROM, PLA and PAL
 - iii) Computer Aided design and softwares used in it. (8 × 2 = 16)

8E4017**8E4017****B.Tech. VIII Semester (Old Back) Examination - 2013****Computer Science****8CS4.1 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) Explain Digital clocks? What is the role of digital clocks in Distributed systems? Explain with the help of appropriate example. (10)
- b) Explain causal ordering of messages. (6)

OR

1. a) Explain mutual exclusion in distributed systems with its classification, also describe the requirement of mutual exclusion theorem. (10)
- b) What are the performance metric for distributed mutual exclusion algorithms. Explain? (6)

Unit - II

2. Define Deadlock. Explain how deadlock can be detected in centralize systems and distributed system. Explain with the help of example. (16)

OR

2. a) What is interactive consistency problem in Agreement protocols? Explain. (6)
- b) Give classification of agreement problem also discuss various application areas of Agreement problem in detail. (10)

Unit - III

3. a) Explain objects in distributed system. How can communication been established between these objects explain with example? (10)
- b) Write short note on events and notification. (6)

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OR

3. a) Define file systems? Explain file system of sun network in detail. (10)
- b) Explain various security issues related to a distributed system. (6)

Unit - IV

4. What is concurrency. Explain the factors responsible for concurrency in distributed systems also suggest various methods used for concurrency control in distributed systems. (16)

OR

4. Define Term Replication. How it is concerned with distributed systems explain in detail with a system model? Also explain how transaction occurs with replicated data. (16)

Unit - V

5. a) Explain communication protocols in distributed systems with the help of appropriate example. (10)
- b) Explain wave and traversal algorithm. (6)

OR

5. Write short note on :
 - a) Dead lock free packet switching. (5)
 - b) Election Algorithm. (5)
 - c) CORBA Services. (6)

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OR

2. a) Explain apriori algorithm and techniques to improve it. (12)
b) What are association rules? Define negative Association. (4)

Unit - III

3. a) Describe each of the following : (2×4 = 8)
i) DBSCAN ii) OPTICS
iii) CLIOUE iv) STING
b) Explain cluster Analysis. Classify major clustering method. Give example in each case. (8)

OR

3. a) Briefly outline law to compute the Dissimilarity between objects described by the following types of variables. (8)
i) Numerical (interval – scaled) variables.
ii) Asymmetric Binary variables.
b) State the algorithm for decision tree inclusion. (8)

Unit - IV

4. a) What are the barriers faced in successful implementation of data warehousing. (2×4 = 8)
b) Describe the major components of a data warehouse architecture. (8)

OR

4. a) Explain the term data warehousing. Distinguish between data marts & data warehouses. (8)
b) Define each of the following terms (8)
i) Star schema ii) Snowflake schema.

Unit - V

5. a) What is aggregation? Explain the steps to design a summary table. (8)
b) What do you mean by recovery of a data warehouse? Explain its testing and strategy. (8)

OR

5. a) Describe OLAP functions & its tools. (10)
b) What is the impact of security on the designing of data warehouse. (6)

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8E4049**8E4049****B.Tech. VIII Semester (Main/Back) Examination - 2013****Mechanical Engineering****8ME1 Renewable Energy Technology****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) i) Enlist different sources of bio-mass.
ii) What are different sources of geothermal energy?
iii) What are main problems with solar thermal power generation system?
(3+3+2)
- b) Describe working of a solar air heater and write fundamental equations of heat collection, various losses and energy collection efficiency. (3+3+2)

OR

2. a) Discuss following with reference to photovoltaic generators :
Valence band, Fermi-level, Conduction band, p-n junction, forward and reverse bias.
- b) Derive the equations for the voltage and current density that maximizes the power of a solar cell.
- c) Discuss the factors that prohibit real photo-voltaic converter from achieving the predicted efficiencies. (4+8+4)

Unit - II

3. a) Write notes on
- Wind energy potential and status of wind power industry in India.
 - Factors influencing wind. (4+4)
- b) Derive equation of theoretical efficiency of a wind turbine. What are factors that affect the actual efficiency? (8)

OR

4. a) What are the factors to be considered for selection of a site for installation of wind energy system? (8)
- b) i) Discuss suitability of various types of water pumps to be driven by wind turbines.
- ii) Discuss various designs of aero-generators and their control equipments. (4+4)

Unit - III

5. a) What are closed, open and hybrid cycles for ocean-thermal-energy-conversion systems and their working fluids? (8)
- b) i) What are uses of OTEC technology besides power generation?
- ii) Discuss environmental impacts of ocean energy systems. (6+2)

OR

6. a) Using schematic diagrams describe land-based and floating ocean thermal energy conversion plants. (6)
- b) Discuss and describe OWC and point absorbers and the important design parameters for them. (8+2)

Unit - IV

7. a) i) Write fusion reactions with D-T and production of tritium.
- ii) Discuss any one of the plasma confinement techniques. (4+3)
- b) "The success in power generation from biogas, geothermal and solar energy sources depend on proper selection of power cycle working fluid and the expander". Discuss in detail and enlist the working fluids and expanders tried. (5+2+2)

OR

- 8. a) Derive equation of electric power generated per unit length by a MHD generator.
- b) Describe any one type of "gobar gas generator". (10+6)

Unit - V

- 9. a) Prove that ideal efficiency of a fuel cell is given by $\frac{\Delta G}{\Delta H}$.
- b) Describe any one type of fuel cell. The answer must be supported with a suitable sketch and chemical reactions in the cell.
- c) Discuss various losses in a fuel cell in brief. (6+6+4)

OR

10. Write short notes on :

- a) Any one method of production of hydrogen.
- b) Storage of hydrogen; problems and the newer developments.
- c) Problems associated with MHD generator.
- d) Anaerobic and aerobic digestion and parameters affecting these processes. (4 x 4)

