IV Semester M.Sc. (I.T) Examination, June/July 2010
APPLICATION SERVERS

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** the questions : **(10×2+5×1=25)**

1. List different types of Clients.
2. Define through put.
3. What is slow response time ?
4. What is mean by font tolerance ?
5. Define inheritance.
6. List the application of applets.
7. Mention different types of persistence.
8. What are remote calls ?
9. What is ORB ?
10. What is Server group and clone ?
11. Define the following.
    a) MSMA
    b) JVM
    c) IDC
    d) CMP
    e) RAD.

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. Explain with a neat sketch Multitier architecture with an example.

2. List some of the categories of middleware architecture. Explain any two in brief.

3. What are the application server issue and constraint ? Explain in brief.

4. Explain the use of ORB in clients and server communication.

5. Discuss J2EE application components and routine environments.

6. What is the use of enterprise bean ? Explain different types of persistence in enterprise bean.

7. Explain with a neat diagram applets based business solutions.

8. Explain with neat diagram Client Web servers.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
APPLICATION SERVERS

Time : 3 Hours Max. Marks: 75

Instruction : *Answer **all** questions from Part – **A**, and answer **any five** questions from Part – **B**.*

PART – A

1. Write the characteristics of client server architecture. **(12×2+1×1=25)**
2. What is interface layer ?
3. What is fault tolerance ?
4. Differentiate applet and servlet.
5. What do you mean by life cycle ?
6. What do you mean by run time component ?
7. How do you manage state among servers ?
8. What is entity bean ?
9. Write the Applications of DCOM.
10. Write the Limitations of Applications server.
11. What does the client tier do in web server ?
12. Define Enterprise beans.
13. Define polymorphism.

PART – B

Answer **any five** : **(5×10=50)**

1. With the help of diagram explain n tier architecture in detail.
2. With respect to component Technology explain the following.
   a) Objects
   b) Building objects through composition
   c) Polymorphism.

P.T.O.

3. Explain Business Object layer and Persistence layer in detail.

4. a) Explain middleware services in detail.

   b) What do you mean by persistence ? Explain in detail.

5. How do you manage server groups and clones ?

6. What is EJB architecture ? Explain with the help of diagram.

7. a) Write a note on Java beans components.

   b) Explain distributed object communications.

8. Explain the three tier architecture in detail.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
VOICE AND VIDEO OVER IP

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** questions : **(12×2+1×1=25)**

1. What are value added services ?

2. What do you mean by virtual agents ?

3. What are the functions of ICN ?

4. What do you mean by Call centers ?

5. What is delay propagation ?

6. What is modulation ?

7. What do you mean by perceptual speech quality management ?

8. What is echo ? How it can avoided ?

9. What are the functions of gatekeeper ?

10. What is RAS signaling ?

11. What do you mean by IP address ?

12. What is real time Transport protocol ?

13. Define encapsulation.

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. Describe the case study on service provider calling card.

2. Explain in detail key benefits of Voice over IP.

3. Write a note on :

   a) Handling delay

   b) Queuing delay.

4. Explain in detail Analog-to Digital and Digital-to-analog conversions.

5. Explain :

   a) Pulse code modulation

   b) Voice compression standards.

6. a) Explain the term H.323 call flows.

   b) Discuss media control and transport control.

7. Explain in detail TCP/IP protocol.

8. Explain in detail different types classes of IP address.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
EMBEDDED SYSTEMS

Time : 3 Hours Max. Marks : 75

***Instruction** : Answer **all** questions from Part – **A**, and answer **any five** questions from Part – **B**.*

PART – A

Briefly explain the following : **(12×2+1×1=25)**

1. List the types of embedded system.
2. What is Timeliness ?
3. List application of Real time systems.
4. What is soft system ?
5. List the application of Micro controller.
6. What is embedded program ?
7. What is Logic analyzer ?
8. What is scheduler ?
9. What is watchdog timer ?
10. List the application of RTOs.
11. What is a widening gap ?
12. What is interrupt Driven system ?
13. What is Vxmorks Simulator ?

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Describe in detail function of Embedded .
2. Discuss the embedded system design system.
3. Explain different implements types of embedded system.
4. Discuss the fundamental choice in Microprocessor design.
5. How microcontroller programming different from conventional programming ? Explain.
6. Explain in detail foreground/background system.
7. Explain the performance characteristics of an RTOs.
8. Discuss analytical verses computation modeling.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
ARTIFICIAL INTELLIGENCE

Time : 3 Hours Max. Marks : 75

PART – A

Answer the following : **(12×2+1×1=25)**

1. What is Artificial Intelligence ?
2. What are the tasks of A.I. ?
3. What we can do with A.I. ?
4. What are A.I. Techniques ?
5. What are the properties for knowledge representation system ?
6. What is the propositional logic ?
7. What is truth table ?
8. What is Semantic Network ?
9. What do you mean by conceptual dependencies ?
10. What do you mean water container problem ?
11. What is learning ?
12. What is Expert system ?
13. Define Fuzzy logic.

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Discuss the applications of knowledge in A.I.

2. Explain the advantages and disadvantages of procedural Vs Declarative Knowledge.

3. Explain with suitable example construction of complex propositions.

4. Explain with suitable example conceptual graphs.

5. Explain Breadth - First Search Algorithm.

6. Discuss the applications areas of Expert system.

7. Compare and contrast the conventional Vs Expert system.

8. Explain in detail neural networks and parallel computation.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
.NET Technologies

Time : 3 Hours Max. Marks : 75

Instruction : *Answer **all** questions from Part **A**, and answer **any five** question from Part **B**.*

PART – A

1. How do you create a class ? **(12×2+1×1=25)**
2. What is data abstraction ?
3. What is object models ?
4. List different types of floating point types.
5. What is jagged array ?
6. What is the advantage of StrConv Function ?
7. Write a example to use ORDER by clause.
8. Write the steps of connect a database.
9. How do you edit controls ?
10. List any 4 methods used to validate character.
11. What actions are performed using command objects ?
12. List different types of statements available in SQL.
13. Write structure of. NET applications.

PART – B

Answer **any five** : **(5×10=50)**

1. Write a detailed note on. NET base class library.
2. a) Briefly explain the concept of reusability with example.

   b) Write a note on user interface design principles.

P.T.O.

3. a) Briefly explain constants and enumerations in. NET.

   b) Write a program to transpose a matrix.

4. a) Write a note on system defined functions.

   b) Briefly explain COM.

5. How do you use controls and components ? Explain.

6. Explain different types of menus supported by. NET.

7. What is Component ? Explain its similarities in. NET.

8. a) How do you connect a database ? Explain.

   b) What is parameters ? Explain.

IV Semester M.Sc. (IT) Examination, June/July 2010
CYBER LAWS

Time : 3 Hours Max. Marks : 75

PART – A

1. Answer **all** of the following : **(10×2+5×1=25)**

   1) Define Cyber Contract.

   2) What is common law ?

   3) Explain Quality of acceptance.

   4) What are the subsequent events and frustration ?

   5) Explain different types of injunctions.

   6) Explain Cyber Privacy.

   7) Explain Human rights approach.

   8) Explain Composition of the Cyber Appellate Tribunal.

   9) Explain importance of patent.

   10) Define concept of Intellectual Property Rights.

   11) Expand the following : **(5×1=5)**

      1) ICANN

      2) IPR

      3) DNS

      4) CA

      5) CR

P.T.O.

PART – B

Answer **any 5** questions : **(5×10=50)**

1. Discuss the essentials of a valid contract.

2. Discuss the policy approaches to privacy issues.

3. Define IPR. Discuss the role of Intellectual Property in developing countries.

4. Discus the impact of electronic commerce on :

   a) Copy rights

   b) Patents

   c) Trademarks.

5. What are the evidentiary presumptions of a secured electronic document ? Explain the process of encryption and decryption of data.

6. Explain the term digital signature. What is a digital signature certificate ?

7. What is meant by unauthorized access to a computer under the provisions of the IT Act, 2000 ?

8. Discuss the adjudicatory processes incorporated in the Act.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
IMAGE PROCESSING

Time : 3 Hours Max. Marks : 75

***Instruction** : Answer **all** questions from Part – **A**, and answer **any five** questions from Part – **B**.*

PART – A

(12×2+1×1=25)

1. Define Preprocessing.
2. What are image digitations ?
3. What is parallel projection ?
4. Give the equations of Fourier transform.
5. Name the properties of 2D fourier transform.
6. What is geometric transformation ?
7. What is image smoothing ?
8. Mention the different classification of image processing.
9. List the different categories in gradient operators.
10. Define data redundancy.
11. Name the approaches that employ region growing technique.
12. Name one external and one internal characteristics of image.
13. Define image acquisition.

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Explain a detail note on digital image and its properties.

2. a) What is visual perception ? Explain.

   b) Write a brief note on quad trees.

3. Briefly explain :

   i) Hadamard Transform

   ii) Discrete Cosine Transform.

4. Explain different types of Local preprocessing techniques.

5. Explain Discrete Fourier Transforms.

6. Briefly explain the following :

   i) Source encoder and decoder

   ii) Channel encoder and decoder.

7. Explain different types of thresholding techniques.

8. Explain chain coding and fitting line segmentations.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
COMPONENT TECHNOLOGIES

Time : 3 Hours Max. Marks : 75

***Instruction**: Answer **all** questionsfrom Part **A**, and answer **any five** questions from Part **B**.*

PART – A

Answer the following : **(12×2+1×1=25)**

1. What are the enterprise beans ?
2. What is EJB container ?
3. Define Bean class.
4. What do you mean by container ?
5. What are the two type of session bears ?
6. What are the integrity rules ?
7. What is pooling ?
8. What are visual basic extensions ?
9. What do you mean by automation controllers ?
10. What is Remote Procedures Calls (RPC) ?
11. What do you mean by e-cash ?
12. What are the functions of Merchandising ?
13. What is VPI ?

P.T.O.

PART – B

Answer **any five**: **(5×10=50)**

1. Discuss how to create entity beans.

2. Explain bean managed persistence.

3. Explain how do you choosing between stateful and stateless session beans.

4. Explain in detail the involved in cyber cash transactions.

5. Explain different JDBC product components.

6. Describe the Component Object Model (COM).

7. Explain how COM component are developed using Visual Basic 6.0.

8. Explain the architecture of DCOM.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
VLSI

Time : 3 Hours Max. Marks : 75

***Instruction** : Answer **all** questions from Part **A**, and answer **any five** question from Part **B**.*

PART – A

1. What is absolute value ? **(12×2+1×1=25)**
2. What is underflow ?
3. Write the applications of DSP.
4. Write the features of multiplier.
5. Write the functioning difference between ALU and shifter.
6. Write the characteristics of MIMD.
7. List VLSI design styles.
8. Write the layout design rules.
9. Define CMOS n wells process.
10. What is interconnect resistance estimation.
11. How does MAC work ?
12. Write the steps in fabrication process flow.
13. Define carry save.

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Explain divide and conquer technique estimation involved in VLSI systems.
2. Discuss standard cell based design and full systems design.
3. Explain different types of advanced CMOS fabrication techniques.
4. What is complex CMOS logic gates ? Explain in detail.
5. Write brief notes on
   a) Time division multiple access.
   b) Frequency division multiple access.
   c) Code Division Multiple access.
6. Explain media sharing and node sharing technique.
7. What is super scalar architecture ? Explain different types.
8. Briefly explain
   a) Switching power dissipation.
   b) Short circuit power dissipation.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
CYBER LAWS (Old Syllabus)

Time : 3 Hours Max. Marks : 75

Instruction : *Answer **all** questions from Part – **A**, and answer **any five** questions from Part – **B**.*

PART – A **(10×2+5×1=25)**

Briefly explain the following :

1. What is judicial review ?
2. What is computer crime ?
3. What is consent ?
4. What is cyber privacy ?
5. What is Trade secret ?
6. What are patents ?
7. What is residual penalty ?
8. What is mean by software privacy ?
9. What are cyber contacts ?
10. What is Computer Forgery ?
11. Expand the following terms :
    a) gTLDs
    b) ICANN
    c) DNS
    d) IRP
    e) IPC

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. E-commerce is the new mantra of business ? Explain.
2. Discuss the significance of Legislation.
3. Distinguish between the procedure in civil case and criminal case.
4. Discuss the distribution of powers between the central and state government.
5. Explain the classification of cyber crimes in ACT 2000.
6. Explain cyber contract in brief.
7. Explain the essentials of privacy preference project (P3P) platform.
8. Explain the following :
   i) Digital Signature
   ii) Digital Signature Certificate.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
LINUX INTERNALS

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** the questions : **(10×2+5×1=25)**

1. List the different modes of VI editor.

2. What is Multi-user ?

3. What is meant by Scheduling ?

4. List the functions of Kernel.

5. List out few special characters found in Scripts.

6. Define ELF.

7. What is Demand paging ?

8. What is the use of ping command ?

9. List any five networking commands.

10. What is Script file ?

11. Define the following terms :
    a) FORK
    b) GREP
    c) CD
    d) State
    e) Links.

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. State and explain benefits and feature of Shell.

2. Explain all the advantages and disadvantages of Linux.

3. Write the syntax of system and administrative commands.

4. Explain the different types of access permissions.

5. With a neat diagram explain the process of virtual memory.

6. With a neat diagram explain executable and likable format.

7. Explain in detail the test operator related to file.

8. With the help of neat diagram explain the physical layout of the ext2 file system.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
COMPUTER COGNITION
(Old Syllabus)

Time : 3 Hours Max. Marks : 75

Instruction : *Answer **all** questions from Part **A** and answer **any five** questions from Part **B**.*

PART – A

1. What are the features of biological neurons ? **(12×2+1×1=25)**
2. List any two simulated tools for Computer Cognition.
3. What are AXON and Synaptic Junction ?
4. What are types of Artificial Neural Networks classified based on learning strategy ?
5. What is the capacity of a perceptron ?
6. What is function approximation ?
7. What is curse of dimensionality ?
8. What is Hebbian Learning ?
9. What is massive parallelism ?
10. What is Cross over and mutation ?
11. What is fault tolerance ?
12. Mention the applications of ES.
13. What is AND function ?

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. What is Artificial Neural Network ? What are the tasks performed by artificial neural network ? Explain its characteristics.

2. State and prove Perception convergence Theorem.

3. What is a convex hull ? Can a three-layer BP network solve any classification problem ? Explain.

4. Discuss the learning algorithms for a fixed RBF Neural network.

5. Explain Basic principles and Applications of Self Organization.

6. Write a Growing Cell Structure Algorithm and mention its applications.

7. a) What are the differences between uni-modal and multi-modal functions ?

   b) Explain working of a simple genetic algorithm.

8. Explain the following :

   a) EP and GAS

   b) Mapping.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
IMAGE PROCESSING
(Old Syllabus)

Time : 3 Hours Max. Marks : 75

PART – A

Answer the following : **(12×2+1×1=25)**

1. List any 4 applications of Image Processing.
2. What is digital image ?
3. Explain any one digital image properties.
4. What is Laplacian ?
5. What is lossy compression ?
6. What is merging ?
7. What is spatial domain approach ?
8. What is image enhancement ?
9. What is the effect of noise on images ?
10. Give the equation of Fourier transforms pair.
11. Define Transform Coding.
12. What is region based segmentation ?
13. What is Projections ?

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Explain the Digital Image properties with an example.

2. Explain Image smoothing with suitable illustrations.

3. What are the traditional image data structures ? Explain.

4. Explain the role of Illumination on thresholding with an example.

5. Explain variable length coding and bitplane coding.

6. Explain simple descriptors and chain coding technique.

7. Describe the different topological data structures.

8. Show that the Fourier Transform of the convolutes of two functions is the product of their Fourier Transform.

IV Semester M.Sc. (I.T.) Examination, June/July 2010
DISTRIBUTED DATABASE
(Old Syllabus)

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** questions from Part **A** : **(10×2+5×1=25)**

1. Define Error rate.

2. Define presentation layer.

3. What is workstation ?

4. Write a note on ATM technology.

5. What are 2 commonly used network topologies for constructing LAN ?

6. What is fault tolerance ?

7. Define Global schema and fragmentation schema.

8. What is the concept of redundancy ?

9. List the various forms of transparencies expected in DCS.

10. What is Hybrid model ?

11. Expand the following :
    a) Query Optimizer
    b) Dead Lock
    c) Join Graph
    d) Clock Drift
    e) Berkely Algorithm.

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. With a neat diagram explain the architecture of OSI model.

2. Explain the different data fragmentation techniques with an example.

3. What is a Query processor ? Explain the characteristics of Query processor.

4. Explain the detailed structure of DDBMS.

5. Describe the framework for a distributed database design.

6. Explain ring based algorithm.

7. Write a note on :
   a) Data Localization
   b) Election algorithm.

8. Describe Top-down and Bottom up approach with an example.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
EMBEDDED SYSTEMS

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** questions : **(12×2+1×1=25)**

1. What is an Embedded system ?
2. Mention Embedded processes type ?
3. What an ALV can do ?
4. Mention any two microcontroller characteristics ?
5. What is compiling, linking and locating ?
6. Explain row Emulators.
7. Define Embedded OS.
8. What is Deadlock ?
9. Briefly explain application of a RTOSS.
10. What is Kernel ?
11. Mention any two applications of VX works.
12. What is synchronization mechanism ?
13. What is a Tasks ?

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. What are the challenges of embedded system design and development ?

2. Explain block diagrams of a typical Embedded system.

3. Explain classification of Embedded system.

4. Explain the following :
   a) Instruction pipelining.
   b) Microcontroller.

5. Write a note on :
   i) Microcontroller memory.
   ii) Analog-to-Digital converters.

6. Explain microcontroller characteristics and applications.

7. What is the role of infinite loop in Embedded systems ?

8. Explain the process of linking and locating.

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IV Semester M.Sc. (I.T.) Examination, June/July 2010
COMPONENT TECHNOLOGIES

Time : 3 Hours Max. Marks : 75

***Instruction** : Answer **all** questions from Part **A**, and answer **any five** questions from Part **B**.*

PART – A

Briefly explain the following : **(10×2+5×1=25)**

1. What is Bean class ?
2. What are Distributed object ?
3. What is transaction management ?
4. What are remote servers ?
5. What is persistent storage ?
6. What is Marshaling ?
7. What is audit ability ?
8. What is site connector ?
9. What is key management server ?
10. Define Symmetric cryptograph.
11. Expand the following terms :
    a) TRMP
    b) CMP
    c) VBA
    d) JNDI
    e) DDE

P.T.O.

PART – B

Answer **any five** : **(5×10=50)**

1. Write down the steps involved in the development of DCom.

2. Explain the following :

   i) session beans ii) Entity Beans

3. How enterprise beans as distributed objects ?

4. Give a detailed step by step process of Distributed transaction.

5. What are the issues confronting in securing electronic transaction ? Explain in brief.

6. Explain the Architecture of the DCom.

7. Give a detailed step by step process of cyber cash transaction.

8. Explain the following :

   i) Digital signature ii) RSA Algorithm.

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