M.SC. DEGREE EXAMINATION, APRIL 2010
III SEMESTER
COMPUTER SCIENCE
ELECTIVE - SOFT COMPUTING
(CBCS 2008 ONWARDS)

Duration : 3 Hours　　　　　　　　　　　　　Maximum : 75 marks

PART - A　　　(10 x 2 = 20)
Answer **ALL** Questions

1.　What is the main difference between single layer and multilayer Artificial Neural network ?

2.　Draw the Structure of typical Biological neurons

3.　What is forward pass ?

4.　What is the objective of training the network ?

5.　What is BAM ?

6.　List the three major phases in the ART classification operation

7.　What is mutation ?

8.　Define selection

9.　Dfine Fuzzy sets

10.　What is membership function ?

11. a. Discuss the multilayer Artificial Neural Network

    Or

    b. Explain the training of Artificial Neural Network

12. a. What is the purpose of a multioutput perceptrons ? Explain

    Or

    b. Discuss about radial basis function network

13. a. Explain continuous BAM and competitive BAM

    Or

    b. Write short notes on kohonen self organising networks

14. a. Explain why we need fuzzy set theory

    Or

    b. Discuss about Fuzzy Decision making

15. a. Briefly explain fitness functions

    Or

    b. Explain Genetic programming

AF - 1969

Answer any **THREE** Questions

16. Briefly discuss the McColloch pits Neuron

17. Explain Back proagation network in detail

18. Briefly explain the architecture of Adaptive Resonance theory

19. Explain Fuzzy sets and Fuzzy relations in details.

20. Explain Hydrid Genetic Algorithm and its applications

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M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Computer Science

C AND DATA STRUCTURE

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions

1. Write any four basic data types.

2. List any two logical operators ?

3. Write the syntax of for loop and give one example.

4. Distinguish between **break** and **continue** statements.

5. Define pointer and give its syntax.

6. What is an array ?

7. What is list ? Write any two advantages.

8. Give the purpose of boubly linked list.

9. What is linear search ?

10. What is time complexity of tree sort ?

Answer **All** questions

11.   (a) Give the fundamental character set of C language.

                        (Or)

        (b) Discuss about any two library functions.

12.   (a) Write short notes on switch case statements.

                        (Or)

        (b) Write a C program to swap two integers.

13.   (a) Write short notes on quality assurance.

                        (Or)

        (b) Explain about project monitoring plans.

14.   (a) Explain the operations of singly linked list.

                        (Or)

        (b) Discuss about stack data structure.

15.   (a) Discuss about in order traversal in binary tree.

                        (Or)

        (b) Write short notes on selection sort.

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions

16. Discuss about assignment and conditional operators with suitable examples.

17. Explain about while and do-while statement with suitable example.

18. Write a C program for implemening spiral matrix.

19. Discuss the representation of queue and its operations with examples.

20. Explain in detail about various hashing techniques with suitable example.

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MCE1C3

M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Computer Science/Information Technology

OBJECT ORIENTED PROGRAMMING IN JAVA

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1.   What is Bytecode ?

2.   Mention any two features of JAVA.

3.   What is an Interface in Java ?

4.   What is the purpose of Try catch block ?

5.   Mention the main difference between higher priority and lower priority threads.

6.   Write the syntax for synchronized statement.

7.   Mention any two string handling methods in Java.

8.   What is AWT ?

9.   What is the purpose of Inet address class in Java ?

10.   Mention any two advantages of Java Beans.

Part - B $(5 \times 5 = 25)$

Answer **All** questions

11.   (a) Write a Java program to find whether a given number is even (or) odd.

(Or)

(b) Write about the relational operators in Java.

12.   (a) Explain the steps to create a package in Java.

(Or)

(b) Write about user defined Exceptions briefly.

13.   (a) Explain the steps to create a thread in Java.

(Or)

(b) Explain about interprocess communication mechanism briefly.

14.   (a) Write a Java program to compare two strings.

(Or)

(b) Describe any two AWT controls.

15.   (a) Explain about datagram sockets briefly.

(Or)

(b) Discuss about the life cycle of a servlet briefly.

AF-1948

Answer any **Three** questions

16. Explain any two control statements in Java with an example for each.

17. Discuss about any two Java's built in exceptions with an example for each.

18. Write a Java program to create main and three child threads using multiple threads concept.

19. Explain the creation of frame window in an applet with an example.

20. Discuss the steps involved in developing a simple Bean.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Computer Science

Elective course I(A)-OBJECT ORIENTED ANALYSIS AND DESIGN

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions

1.   What is an object ?

2.   Define Data encapsulation.

3.   Define process and Data Flow.

4.   What is an event ?

5.   What is the role of data dictionary in modeling ?

6.   What is meant by analysis ?

7.   List the decisions taken by the system designer.

8.   Define subsystem.

9.   Define Documentation.

10.   What is a link and an association ?

Part - B $(5 \times 5 = 25)$

Answer **All** questions

11.   (a) Explain grouping constructs with examples.

(Or)

(b) Explain about condidate keys in detail.

12.   (a) Discuss about a simple functional model in detail.

(Or)

(b) What is DFD ? Explain in detail.

13.   (a) Write notes on : Functional modeling

(Or)

(b) Write notes on : Dynamic modeling.

14.   (a) Explain in detail about indetifying concurrency.

(Or)

(b) Explain about management of Data store in detail.

15.   (a) How do you design the association ? Discuss.

(Or)

(b) Explain about physical packaging in detail.

Answer any **Three** questions

16.   Draw a detailed diagram for Aggregation and Generalization with suitable example and explain.

17.   Explain on thet relation of objects and dynamic module.

18.   Explain about analysis process in detail.

19.   Explain the Architecture of ATM system with a neat Block diagram.

20.   Explain about design optimization in detail.

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AF-1949

AF-1950		MCE1E2

M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Computer Science

Elective-SYSTEM SOFTWARE

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions

1.   Differentiate linear and non-linear data structures.

2.   What is meant by rehashing ?

3.   Differentiate top-down and bottom-up parsing techniques.

4.   What are assembler directives ?

5.   Give an example for nested macro calls.

6.   Define the side effect of a function call.

7.   Differentiate pure and impure interpreters.

8.   Define an overlay.

9.   What is a template ?

10.   Write down the job of a dialog manager in UI.

Part - B $(5 \times 5 = 25)$

Answer **All** questions

11.   (a) Differentiate program generation and program execution
           activites.

(Or)

       (b) Explain in brief about the Lex tool.

12.   (a) With a suitable example, explain top down parsing without
           backtracking.

(Or)

       (b) Write short notes on intermediate code forms.

13.   (a) With an example, explain strength reduction optimization.

(Or)

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(b) Briefly explain control flow analysis.

14. (a) Explain program relocation in brief.

(Or)

(b) Write short notes on a linker for MSDOS.

15. (a) Discuss about different types of editors.

(Or)

(b) Write in brief about programming environments.

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions

16. Explain in detail about hash table organisation.

17. Write down and explain operator precedence parsing algorithm. Give an example.

AF-1950

18. Write notes on advanced macro facilities.

19. Discuss about the design and operation of a toy interpreter.

20. Explain in detail about user interfaces.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

First Semester

Computer Science

Elective-DESIGN AND ANALYSIS OF ALGORITHM

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1.   What is meant by the size of an instance ?

2.   State the threshold rule.

3.   State the sequencing rule.

4.   Write the equations that describe the total time t(n) taken by the general template of the divide and conquer algorithm when $1 < b^k$, $1 = b^k$, and $1 > b^k$

5.   Write a recursive function for calculating the binomial coefficient.

6. Define any two problems that can be solved using the backtracking technique.

7. What are pseudo random generators ?

8. State four features of the p-ram model.

9. What are decision problems ? Give example.

10. When is a distance matrix said to have the metric property ?

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a) Compare average and worst case analyses for the insertion sort algorithm.

(*Or*)

(b) Describe "**the order of**" notation with an example.

12. (a) Explain how greedy approach can be used in solving scheduling problems.

(*Or*)

AF-1951

(b) Explain how a 'for' loop can be analysed with an example.

13. (a) Explain chained matrix multiplication.

(*Or*)

(b) Explain how the assignment problem can be solved using the Branch-and-Bound technique.

14. (a) Describe one problem that can be solved using Monte Carlo Algorithm.

(*Or*)

(b) Describe the design and working of parallel sorting networks.

15. (a) Explain the greedy heuristic approach to the graph colouring problem.

(*Or*)

(b) Write a short note on complexity classes.

AF-1951

Answer any **Three** questions.

16.   Explain proof by contradiction and using this technique prove the following statement: "**There exists two irrational numbers x and y such that x^y is rational".**

17.   Explain the steps in solving homogeneous and inhomogeneous recurrences.

18.   Explain with an example, the depth first search procedure on undirected graphs.

19.   Describe the characteristics of numerical probabilistic algorithms and explain the convergence analysis for numerical probabilistic algorithms

20.   Explain the approximate algorithmic approach to the bin packing problem.

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AF-1952		MCE2C1

M.Sc. DEGREE EXAMINATION, APRIL 2010
Second Semester
Computer Science

COMPUTER SYSTEM ARCHITECTURE
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. Define stack organisation.

2. Give the use of ALU.

3. What is Register Transfer ?

4. What is an Instruction code ?

5. Give two applications of Microprogram control.

6. What is a Microprogram sequences ?

7. What is synchronous Data transfer ?

8. Define virtual memory.

9. What is Array Processing ?

10. Define Multiprocessing.

Answer **All** the questions.

11. (a)   Explain about Addressing modes.

Or

(b)   Discuss about Data Transfer Instructions.

12. (a)   Explain about control functions.

Or

(b)   Discuss about Arithmetic Micro-operations.

13. (a)   Explain about control memory.

Or

(b)   Give some advantages of Microprogram control.

14. (a)   Discuss about Asynchronous Data Transfer.

Or

(b)   Explain about priority Interrupts.

15. (a)   Describe the features of pipelining.

Or

(b)   Give the featues of RISC architecture.

AF-1952

Part - C   (3 × 10 = 30)

Answer any **Three** questions.

16. Discuss about processor Bus organization in Detail.

17. Explain about Basic computer organization in Detail.

18. Give the features of micro program sequence in Detail.

19. Describe the features of Associative memory.

20. Give the features of vector processing and Array processing.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Computer Science

RDBMS

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. Define DBMS.

2. What is meant by Schema ?

3. Define linear Splitting.

4. List out the advantages of SQL.

5. Define primary key.

6. Write down the Integrity Rule.

7. Define Locking Schedules.

8. Define concurrent access anomalies.

9. Define SQL Queries.

10. Define Null Function.

Answer **All** the questions.

11. (a) List out the advantages of entity Relationship model.

Or

(b) Write down about centralized and distributed database system.

12. (a) What are the advantages of Secondary Index ?

Or

(b) Write about the File Organization System.

13. (a) When a database become relational ? Explain

Or

(b) Differentiate between relational and non-relational database.

14. (a) Write about the External Schema.

Or

(b) Write about the conceptual Schema.

15. (a) Write about the Oracle Data dictionary.

Or

(b) Write down the main datatypes used in Oracle.

AF-1953

Answer any **Three** questions.

16. Discuss about the over flow management in hased files.

17. Discuss about the B-tree based Indexed file Organization.

18. Discuss about the First and second normal form with suitable example.

19. Discuss about the locking and non-locking schedules.

20. Short notes on :

    (a)   embedded SQL

    (b)   SELECT Command

    (c)   UNION Command

    (d)   RENAME TABLE.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester
Computer Science

OPERATING SYSTEM
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. What is distributed system ?

2. What is the purpose of system calls ?

3. Write any two benefits of multithreaded programming.

4. Mention any two differences between CPU burst and I/O burst.

5. What is a deadlock ?

6. Write any two major advantages of multiple processor scheduling.

7. Name two differences between logical and physical addresses.

8. Why are segmentation and paging sometimes combined into one scheme ?

9. What is swap space ?

10. Why disk scheduling is necessary ?

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a) Discuss in detail about real time systems.

Or

(b) Explain about storage-device hierarchy with a neat diagram.

12. (a) Discuss about process scheduling briefly.

Or

AF-1954

(b) Explain the various multithreading models with a neat diagram.

13. (a) Discuss about thread scheduling in detail.

Or

(b) Distinguish between counting and binary semaphore.

14. (a) Explain about FIFO page replacement algorithm with an example

Or

(b) What is the cause of thrashing ? How does the system detect thrashing ? Explain.

AF-1954

15. (a) Discuss about any two directories structure briefly.

Or

(b) Explain about disk reliability in detail.

Part - C (3 × 10 = 30)

Answer any **Three** questions.

16. Explain about I/O structure in detail.

17. Discuss about the following in detail.

(i) Priority scheduling.

(ii) Round-Robin scheduling.

18. Explain about any two classical synchronization problems with the example for each.

19. Discuss about demand paging with a neat diagram.

20. Explain about any two disk scheduling algorithms with an example for each.

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AF-1954

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester
Computer Science

Elective—MOBILE COMPUTING
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1. Give any two applications of mobile networking.

2. What is consistency ?

3. What multiplexing schemes are used in GSM ?

4. What are the main reasons for using cellular system ?

5. What is home agent ?

6. What is the main difference between wired networks and adhoc networks ?

7. What is Encapsulation ?

8. Why routing in adhoc network is complicated ?

9. What is the basic purpose of DHCP ?

10. What is the rate of a WTA Server ?

Part - B (5× 5 = 25)

Answer **All** questions.

11. (a) Explain briefly about wireless technology.

Or

(b) Write short notes on :

    (i) Mobility

    (ii) Portability.

12. (a) What are the main benefits of a spread spectrum system ? How can spreading be achieved ?

Or

AF-1955

(b) What are the functions of authentication and encryption in GSM ? How is security maintained ?

13. (a) Discuss the procedures for mobile mode registration.

Or

(b) Explain the processing of home agent.

14. (a) Discuss the protocol fields for generic routing encapsulation

Or

(b) Explain the route optimization.

15. (a) Brief about mobility support in IP version 6.

Or

AF-1955

(b) What are the primary goals of the WAP Forum efforts and how are they reflected in the WAP protocol architecture ?

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions.

16. Explain the overview of IP and routing protocols.

17. What is multiplexing ? Explain frequency. Code division multiplexing.

18. Explain Agent advertisement packet and Agent operation of mobile network.

19. Explain : (i)   Unicast broadcast.

(ii) Multicast datagram routing

20. Explain WAP protocol.

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AF-1955

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester
Computer Science

Elective-GRID COMPUTING
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1. What is meant by grid taxonomy ?

2. What is platform computing ?

3. What are the issues in parallel computing ?

4. What is Remote Instruction Blocks.

5. Define grid data.

6. What is meant by Grid-Net ?

7. List the three components made by OGSA.

8. Define service data element.

9. What is meant by Meta computing Directory Service (MDS) ?

10. Define white pages.

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Part - B $(5 \times 5 = 25)$

Answer **All** questions.

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11. (a) Explain sneha-sumuham grid computing model in GCCF.

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Or

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(b) List the grid computing application in short form.

12. (a) Explain the RIB by using NFS.

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Or

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(b) Write short notes on Parset Data structure.

13. (a) What is the another name for CORBA. Explain it.

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Or

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(b) Write short notes on database for web service.

14. (a) Give the OSGI technical specification in detail.

Or

(b) Explain OGSA platform models.

15. (a) Give the protocol stack in version 2.x of the Globus tool kit.

Or

(b) Explain the Grid Resource Information services.

Part - C (3 × 10 = 30)

Answer any **Three** questions.

16. Discuss in detail about Grids and Grids technologies.

17. Explain in detail about Semantic grids.

AF-1956

18. Discuss about open grid services architerture management system.

19. Explain the OSGA basic services in detail.

20. Explain the grid tools and tool kits.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester
Computer Science

Elective-COMPUTER GRAPHICS
(CBCS—2008 Onwards)

Duration : 3 Hours　　　　　　　　　　　Maximum : 75 Marks

Part - A　　　　$(10 \times 2 = 20)$

Answer **All** questions.

1. What is computer aided Design ?

2. Define display processor.

3. What is transformation ?

4. State any two color models.

5. Define a view Port.

6. Define a segment.

7. What is three dimensional translation ?

8. Write any two transformation commands.

9. List the types of projections.

10. Define coherance.

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a) Write a note on interactive input devices.

Or

(b) Discuss : character generation.

12. (a) Explain : composite transformation.

Or

(b) Writte short notes on the following :-

(i) Character attributes.

13. (a) Write a brief discussion on physical input devices.

Or

AF-1957

(b) Explain in brief about segment files.

14. (a) Discuss : Three dimensional display techniques.

Or

(b) Explain three dimensional scaling.

15. (a) What is viewing transformation ? Explain.

Or

(b) Write a note on projections.

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions.

16. Discuss Bresenharm's line drawing algorithm with sutiable examples.

17. Explain various two dimensional transformations.

18. Write a detailed discussion on Window to viewport transformation.

3   **AF-1957**

19. Explain rotation of a point about an arbitrary axis.

20. Discuss Z-buffer and A-buffer algorithms.

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AF-1957

M.Sc. DEGREE EXAMINATION, APRIL 2010

Second Semester

Computer Science

PARALLEL PROCESSING

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. List down mechanisms to implement parallel processing.

2. What is meant by pipelining ?

3. What are tightly coupled systems ?

4. Show the ring type of interconnection network.

5. Differentiate data and control parallelism.

6. Define message passing.

7. Define performance measures.

8. Write down anomalies in parallel algorithm.

9. Define a crossbar switch.

10. What is meant by a cache coherence ?

Part - B   (5× 5 = 25)

Answer **All** the questions.

11. (a) Write in brief about the computational demands of parallel processing.

Or

(b) Differentiate pipelining and data parallelism.

12. (a) Write in brief about cluster and cluster buses.

Or

(b) With suitable diagram, explain shuffle exchange networks.

13. (a) Write short notes on shared address space mechanism

Or

(b) Explain in brief about mapping granularity.

14. (a) Discuss in brief about the design issues of parallel algorithm.

Or

(b) Discuss about complexities of parallel algorithm.

15. (a) With a suitable diagram, explain the multiport memory systems.

Or

(b) With suitable examples, explain how shared variables are handled.

AF-1958

Answer any **Three** questions.

16. Discuss in detail about different parallel processing terminologies.

17. With suitable diagrams, differentiate tightly coupled and loosely coupled systems.

18. Explain the following :

    (i)   Precedence graph of a process.

    (ii)   Different types of parallelisms with examples

19. Discuss the performance analysis of parallel algorithms.

20. Write note on memory contention and arbitration techniques.

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AF-1959		MCE 2E5

M.Sc DEGREE EXAMINATION, APRIL 2010

Second Semester

COMPUTER SCIENCE

ELECTIVE - SOFTWARE TESTING AND QUALITY ASSURANCE

(CBCS - 2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A   (10 x 2 = 20)

Answer ALL Questions

1. State the need for testing.

2. State the difference between Verification and Validation.

3. In data flow notation, what are 'defs' and 'uses'?

4. Name any four White Box Testing techniques.

5. What is a message sequence?

6. State any two salient features of SRS document.

7. Define software quality assurance.

8. State any two standards for software quality.

9. List the members of a SQA team.

10. State the principles of statistical process control for software.

Part-B (5 x 5 = 25)

Answer ALL Questions

11. a. Explain the software development life cycle.

(OR)

    b. Compare White Box and Black Box Testing methods.

12. a. Explain Unit Testing.

(OR)

    b. Describe equivalence class partitioning method, its merits and demerits.

13. a. Describe the challenges in testing object-oriented software.

(OR)

    b. Explain the need for Inspections.

14. a. Explain the components of Total Quality Management.

(OR)

    b. Explain the benefits of SQA.

AF-1959

15. a. Describe the key quality control issues relating to software.

(OR)

b. Explain the problems in implementing SQA.

Part-C   (3 x 10 = 30)

Answer any THREE Questions

16. State and explain Weyuker's adequacy axioms.

17. Explain any two White Box Testing techniques with examples.

18. Explain the class testing strategies for OO software.

19. Explain the concepts of Deming, Juran and Crosby quality philosophers.

20. Describe an approach for implementing a software quality program in an organization.

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AF-1960		MCE 2E6

M.Sc DEGREE EXAMINATION, APRIL 2010

Second Semester

COMPUTER SCIENCE

DIGITAL IMAGE PROCESSING

(CBCS - 2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A   (10 x 2 = 20)

Answer ALL Questions

1. Define Digital Image Processing.

2. Define Sampling and Quantization.

3. What is Image Enhancement?

4. Define Image Smoothing.

5. Define Circulant Matrix.

6. Give the merits of Inverse Filtering.

7. What is Loss less Compression?

8. Mention any two Image Compression Standards.

9. Define Pattern Recognition System.

10. Define Bayers classifier.

Part-B $(5 \times 5 = 25)$

Answer ALL Questions

11. a. Explain elements of Digital Image Processing in detail.

(OR)

   b. Write in detail about Hadamard Transform.

12. a. Describe in detail about sharpening filters in spatial filtering.

(OR)

   b. Write notes on Histogram Processing.

13. a. Explain in detail about Algebraic approach to Restoration.

(OR)

   b. Describe the features of least mean square filter.

14. a. Explain in detail about coding and interpixel redundancy.

(OR)

   b. Describe in detail about transform coding.

15. a. Give the features of Linear Discriminant function in Pattern Recognition System.

(OR)

   b. Give the applications of Pattern Recognition System.

AF-1960

Answer any THREE Questions

16. Explain the structure of the Human Eye and Image formulation in the eye in detail.

17. Describe the features of Low pass, High pass and Homomorphic filtering in detail.

18. Discuss in detail about Inverse filtering and Interactive restoration.

19. Explain lossy compression in detail.

20. Describe syntactic pattern recognition and concepts from formal Language theory.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Thrid Semester

Computer Science

COMPUTER COMMUNICATION NETWORK

(CBCS - 2008 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1.   What is meant by Protocols.

2.   Define Network.

3.   What is meant by ALOHA ?

4.   Define Bus.

5.   What is the function of Router.

6.   What is the unit of traffic in signal transformation.

7.   Define Data gram.

8.   What is meant by Payload.

9.   What is meant by Circuit Switching ?

10. Define Intranet.

Answer **All** questions.

11. (a) What is the channel capacity of UTP cable ? Explain it.

Or

(b) Explain about sliding window protocols.

12. (a) Write short notes on Ethernet.

Or

(b) Explain the transreception technology of Bluethooth.

13. (a) What is the function of Gateway.

Or

(b) Write short notes on Multi cast Routing.

14. (a) Write notes on TELNET.

Or

(b) Briefly explain about SMTP.

15. (a) List some coding techniques available for Error detection and error correction.

Or

(b) Explain about congestion control policy.

Answer any **Three** questions.

16.   Discuss about OSI reference model in detail.

17.   Explain in detail about wireless LAM.

18.   Discuss about distance vector routing in WAN.

19.   Explain the operation mode of UDP.

20.   Discuss about ATM services in detail.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Computer Science

. NET TECHNOLOGY

(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. What is CLR ?

2. Write down the elements of .Net Frame work.

3. What is meant by dynamic array ?

4. Compare Text and Rich Text boxes.

5. What are the different file types in ASP. Net ?

6. Mention the data controls in ASP. Net.

7. Define class and object.

8. What is the use of over riding concept ?

9. Write down the main components of data providers.

10. What is meant by Data Namespace.

Part - B (5 × 5 = 25)

Answer **All** questions.

11. (a) Write down the structure of a .Net application.

Or

(b) Explain how garbage collection works.

12. (a) Explain the various VB .Net Datatypes.

Or

(b) Explain how files are handled in VB .Net.

AF-1962

13. (a) Discuss about Http Request and Http Response.

Or

(b) Write notes on AJAX controls.

14. (a) Explain data abstraction.

Or

(b) Discuss about Forms Authentication.

15. (a) Explain the basic SQL syntax in ADO .Net

Or

(b) Write short notes on Repeater.

Answer any **Three** questions.

16. Describe .Net base class library.

17. Explain conditional and looping statements in VB .Net

18. Explain HTML server controls and Web controls.

19. With examples explain the different types of Inheritance.

20. Explain how to access database in the internet.

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester
Computer Science

SOFTWARE ENGINEERING
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1. Define software Engineering.

2. Write the advantages of sprial model.

3. Define Data Dictionary.

4. What is meant by inconsistency ?

5. Mention different categories of risk assessment.

6. Write any two uncertainties in cost estimation.

7. Define top down approach.

8. Define Abstraction.

9. What is known as functional testing.

10. Define the term fault and failure.

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a)   Write down the steps in software process.

Or

(b)   Discuss about prototyping model in detail.

12. (a)   Explain change request frequency briefly.

Or

(b)   Write about validation in software requirement.

13. (a) How the time sheets are used in project monitoring plans ? Discuss

Or

(b) Write short notes on risk management.

14. (a) Explain module level concepts briefly.

Or

(b) Write short notes on verification.

15. (a) Discuss psychology of Testing in detail.

Or

(b) Describe briefly about mutation Testing.

AF-1963

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions.

16. Explain software requirement specfications in detail.

17. Describe DFD for an restaurant management and steps for drawing DFD in detail.

18. Explain COCOMO model with an example.

19. Discuss in detail about structure design methodology.

20. Explain Testing process in detail.

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AF-1963

M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Computer Science

Elective-DATA MINING AND DATA WAREHOUSING
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A   (10 × 2 = 20)

Answer **All** questions.

1. What is a data warehouse ?

2. Define concept learning.

3. What is an association rule ?

4. What is the purpose of OLAP Tool ?

5. Mention the main difference between data mart and meta data.

6. What is vertical partitioning ?

7. What is parallel Query ?

8. Mention the main difference between cold backup and hot backup.

9. What is data load ?

10. What is tuning Ad hoc query ?

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a) Discuss about information and production factor.

Or

(b) Explain about self learning computer systems.

12. (a) Explain any two visualization techniques with an example for each.

Or

(b) Discuss about decision trees with an example.

AF-1964

13. (a) What is an aggregation ? Explain.

Or

(b) Discuss about starflake schemas with an example biefly.

14. (a) What is symmetric multi-processing ? Explain with a neat diagram ?

Or

(b) Discuss about service level agreement with its requirements.

15. (a) Discuss about daily processing in capacity planning in detail.

Or

(b) List and explain about features of Data warehouse in detail.

AF-1964

Part - C (3 × 10 = 30)

Answer any **Three** questions.

16. Explain about data mining and the data warehouse in detail.

17. Discuss the various stages available in knowledge discovery process in detail.

18. List and explain about any two system managers in detail.

19. Discuss about operating the data warehouse in detail.

20. Explain about testing the data warehouse in detail.

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AF-1964

AF-1965		MCE3E2

M.Sc.(C.S) DEGREE EXAMINATION, APRIL 2010
Third Semester
Computer Science

Elective-REALTIME AND EMBEDDED SYSTEMS
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** questions.

1. What are the classifications of operating system used in embedded system ?

2. Define : Cache Memory.

3. What is RTOS ?

4. List the function calls provided by semaphore management.

5. What is an interrupt ?

6. List any two memory technologies for an embedded system.

7. What do you meant by address resolution ?

8. Define : Locator maps.

9. What are the applications of Real-time databases ?

10. What do you meant by tracks ?

Part - B $(5 \times 5 = 25)$

Answer **All** questions.

11. (a) Differentiate the various types of memory and explain

Or

(b) Discuss the factors that are used to estimate program run times.

12. (a) Describe the activities that an RTOS must accompolish in relation to a task.

Or

AF-1965

(b) Explain Rate-Monotonic sheduling algorithm.

13. (a) Discuss the time loading and its measurements.

Or

(b) Explain the concept of interrupt latency.

14. (a) Explain the voter reliabilities for an N-processor system.

Or

(b) What is logic analyzers ? Illustrate the effect of logic analyzers in a timing mode.

15. (a) Differentiate Real-time Vs General-purpose databases.

Or

(b) Write about optimistic concurrency control.

3 **AF-1965**

Answer any **Three** questions.

16. Explain the properties of performance measures of an operating system.

17. Explain the semaphore management function calls.

18. Explain the requirements and organization of a system.

19. Explain the different ways for getting the embedded software into the target system.

20. Explain the Disk scheduling algorithms.

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M.Sc. (C.S) DEGREE EXAMINATION, APRIL 2010
Third Semester
Computer Science

Elective-MULTIMEDIA SYSTEM
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. Name some Multimedia softwares.

2. Define Multimedia PC.

3. What do you mean by triggers in Backdrops ?

4. What is oversacn and underscan ?

5. Define aspect ratio.

6. Mention the different MPEG motion video compression standards.

7. Define MIME.

8. List down Multimedia Authoring tools.

9. List some VR hardwares.

10. What do you mean by virtual environment.

Answer **All** the questions.

11. (a) Explain about Multimedia Networking.

Or

(b) Write short notes on Multimedia environments.

12. (a) Write down the steps to compress bitmap images.

Or

(b) Describe how animation is used in Multimedia.

13. (a) Discuss CD Audio clip making.

Or

(b) Discuss popular video recording formats and write their strengths and weaknesses.

14. (a) Explain how dynamic webpages are created with XML

Or

(b) Discuss voice mail.

15. (a) Explain the techniques used in VR applications.

Or

(b) Discuss some VR applications.

AF-1966

Answer any **Three** questions.

16. Explain the hardware components needed in multimedia applications.

17. Explain about the usage of Image and Graphics in Multimedia applications.

18. Discuss the various video compression techniques.

19. Explain about video Teleconferencing and the problems in it.

20. Explain about a generic VR system.

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AF-1966

M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Computer Science

Elective - ENTERPRISE RESOURCE PLANNING

(CBCS—2008 Onwards)

Duration : 3 Hours　　　　　　　　　　　　　Maximum : 75 Marks

Part - A　　　　　　(10 × 2 = 20)

Answer **All** questions

1.　What is meant by Business Process ?

2.　List any two functions of ERP Systems.

3.　What is meant by presentation Interface ?

4.　Give the use of system control Interface.

5.　Define the term user Interface.

6.　What is meant by Application Integration ?

7.　Define the term Marketing.

8.　Give the use of supply chain management Information systems.

9. What is meant by market place ?

10. Give the exapansion for the term SAP. Also mention the versions of SAP.

Part - B $(5 \times 5 = 25)$

Answer **All** questions

11. a. Write about the history of ERP

(*Or*)

b. List and explain the components of ERP System

12. a. Discuss on presentation Interface

(*Or*)

b. Write a note on Database Interface

13. a. Write about Multi Client / Server Solutions

(*Or*)

b. Discuss on Database requirements

14. a. Write a note on Information systems

AF - 1967

(Or)

b. Discuss about accounting in ERP systems

15. a. Write about people soft company

(Or)

b. Discuss on QAD

Part - C   (3 × 10 = 30)

Answer any **Three** questions

16. Explain the following :

a)   ERP   (5)

b)   Difference between Manufacturing and services   (5)

17. Discuss the following :

a)   ERP architecture concepts   (5)

b)   ERP and E- Commerce   (5)

18. Write a note on the following

a)   Open technology   (5)

b)   Interfaces with other systems   (5)

AF - 1967

19. Explain in detail about

   a)   Sales order process   (5)

   b)   Production and Supply chain management

          Information Systems   (5)

20. Write about

   a)   ORACLE Corporation   (5)

   b)   SAP AG   (5)

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M.Sc. DEGREE EXAMINATION, APRIL 2010

Third Semester

Computer Science

SECURITY IN COMPUTING

(CBCS—2008 Onwards)

Time : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions.

1. What do mean by an auditability ?

2. Define Integrity.

3. Expand VPN.

4. Expand PAP.

5. Define ICMP.

6. What is intrusion detection ?

7. What is access control ?

8. What is threat analysis ?

9. Define Separation.

10. What are the different memory protection.

<div align="center">

Part - B $(5 \times 5 = 25)$

Answer **All** the questions.

</div>

11. a. Discuss on types of security services.

<div align="center">(*Or*)</div>

   b. Write short notes on network security.

12. a. Discuss about DIAMETER.

<div align="center">(*Or*)</div>

   b. Write down the firewalls strengths.

13. a. Discuss about Internet key distribution.

<div align="center">(*Or*)</div>

   b. Write notes on management security in network level.

14. a. Explain on IS-4-C specification.

<div align="center">(*Or*)</div>

<div align="center">**2**</div>

<div align="right">**AF-1968**</div>

b. Write notes on authentication of mobile station.

15. a. Discuss about layered design.

<p style="text-align:center">(Or)</p>

b. Write notes on kernal.

<p style="text-align:center">**Part - C**   (3 × 10 = 30)</p>

<p style="text-align:center">Answer any **Three** questions</p>

16. Explain in detail about computer network security.

17. Discuss about CHAP and RADIUS.

18. Explain in detail about Application level security.

19. Write in detail about authentication of call to terminate a mobile station.

20. Write short notes on :
    (i)   ring structure
    (ii)   isolation
    (iii)   layered design

<p style="text-align:center">——— ✳✳✳ ———</p>

AF-1968

M.Sc. DEGREE EXAMINATION, APRIL 2010
First Semester
Computer Science
APPLIED MATHEMATICS FOR COMPUTER SCIENCE
(CBCS—2008 Onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part - A $(10 \times 2 = 20)$

Answer **All** the questions

1. Write an equivalent formula for $P \wedge (Q \leftrightarrow R) \vee (R \leftrightarrow P)$ which does not contain bioconditional.

2. Let P : It is cold and Q : It is raining. Give a simple verbal sentence which describes $P \wedge (\neg Q)$.

3. Write the negation of the following logical statement "If she studies, she will pass in Exam".

4. Define existential Quantifier.

5. Define Regular Graph with an example.

6. Find the Adjacency matrix of the following graph.
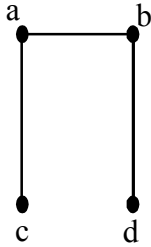
7. Define Surplus variable.

8. What is meant by degeneracy of a LPP ?

9. What do you mean by transportation problem ?

10. What is unbalanced transportation problem ? How to solve it ?

Part - B $(5 \times 5 = 25)$

Answer **All** the questions

11 a. Verify whether $(P \vee Q) \to P$ is a tautology.

(*Or*)

b. Show that $\{\uparrow\}$ is a functionally complete set.

12 a. Find principal disjunctive normal form of $(\neg P \vee \neg Q) \to (\neg P \wedge R)$

(*Or*)

AF-1946
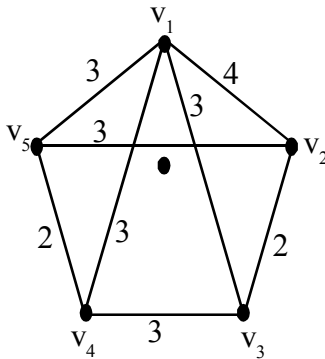
b. Show that RVS is a valid conclusion from the premises

C∨D, C∨D → ¬H, ¬H → (A ∧ ¬B) and (A ∧ ¬B) → (R∨S)

13 a. Draw the diagraph G corresponding to adjacency matrix.

$$A = \begin{pmatrix} 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{pmatrix}$$

(*Or*)

b. Find the minimal spanning tree of the weighted graph.

14 a. Find the initial basis feasible solution for the following transportation problem.

	D_1	D_2	D_3	D_4	Availability
S_1	11	13	17	14	250
S_2	16	18	14	10	300
S_3	21	24	13	10	400
Requirement	200	225	275	250	

(*Or*)

b. Solve the following assignment problem

Machines

		M_1	M_2	M_3	M_4
	J_1	5	7	11	6
	J_2	8	5	9	6
Jobs	J_3	4	7	10	7
	J_4	10	4	8	3

15 a. A company produces 2 types of hats. Each hat A require twice as much labour time as the second hat B. If all are of hat B only, the company can produce a total of 500 hats a day. The market limits daily sales of the hat A and hat B to 150 and 250 hats. The profits on hat A and B are Rs. 8 and Rs. 5 respectively. Formulate this as LPP.

(*Or*)

AF-1946

b. Solve Graphically the following LPP

  Minimize $Z = 20x_1, + 10x_2$

  Subject to $x_1 + 2x_2 \le 40$

  $3x_1 + x_2 \ge 30$

  $4x_1 + 3x_2 \ge 60, \quad x_1, x_2 \ge 0$

Part - C $(3 \times 10 = 30)$

Answer any **Three** questions

16. Show that $P \to (Q \to P) \Leftrightarrow \neg P \to (P \to Q)$.

17. Show that $R \to S$ can be devided from the premises $P \to (Q \to S)$, $\neg R \lor P$ and Q.

18. Draw the expression tree for $(a * b) - (c \div d) + e$. hence workout the preorder, inorder and postorder traversals of the tree.

19. Solve using Big-M method

  Minimize $Z = 4x_1 + 3x_2$

  Subject to $2x_1 + x_2 \ge 10$

  $-3x_1 + 2x_2 \le 6$

  $x_1 + x_2 \ge 6$

  and $x_1, x_2 \ge 0$

20. Solve the following transportation problem using MODI method.

	D$_1$	D$_2$	D$_3$	D$_4$	Supply
S$_1$	6	1	9	3	70
S$_2$	11	5	2	8	55
S$_3$	10	12	4	7	70
Demand	85	35	50	45	

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AF-1946