END TERM EXAMINATION

Paper Code: MCA 203	**Subject: Database Management System**
Paper Id-44203	**(Batch: 2004-2007)**

Note: Attempt any five questions. Question 1 is compulsory.

(4×5=20)

Q1. (a) How is traditional file processing approach different than DBMS approach? Explain.

(b) Why can we have only one primary index on a file but several secondary index?

(c) How is 3 NF different from BCNF? Explain.

(d) Define the terms: DDL, DML and DCL.

Q2. (a) Discuss the architecture of database management system and draw the architecture diagram. **(5)**

(b) What do you mean by generalization and specialization? Explain with a suitable diagram. **(5)**

Q3. Discuss the different types of data model. Give the importance of it. **(10)**

Q4. (a) Discuss the purpose of normalization & normalization process. What are the normal forms? Explain with suitable example. **(6)**

(b) Explain clustering indexes and multilevel indexes. **(4)**

Q5. (a) Define concurrent access of database. What are the reasons for which Concurrency control is required? List the rule of serializability. Write suitable example for mentioning reason of concurrency control. **(5)**

(b) What is transaction? Explain acid properties of transaction. **(5)**

Q6. (a) What is dead lock? Explain dead lock handling techniques with appropriate examples. **(6)**

(b) How can the database be recovered through shadow Paging Scheme. **(4)**

Q7 Write short notes **(Any Two):** **(5×2=10)**
 (a) Data Warehousing
 (b) Distributed Database.
 (c) Object Oriented Database Management System.
 (d) DBA.

END TERM EXAMINATION

THIRD SEMESTER [MCA] DECEMBER-2008

Paper Code: MCA 201	Subject: Operating System
Paper Id-44201	(Batch: 2004-2007)

Note: Attempt any five questions.

(2×6=12)

Q1. (a) Define Multi programmed Batches Systems.

(b) Explain Real Time System.

(c) Define Multi-user Multi Tasking System.

(d) What is Multi Processor Scheduling?

(e) Discuss Time System.

(f) Define Storage Device.

Q2. What is an operating System? Define the Protected Mode and Supervisor
Mode.   (12)

Q3. Explain the following briefly: (4×3=12)
   (a) What is Scheduling Policy? Describe the Basic Concepts, Criteria and
        Algorithm Evaluation in brief.   (6)

   (b) What is Synchronization? Define the classical Problem of
        Synchronization   (6)

Q5. Explain the following briefly:-   (3×4=12)
   (a) Swap Space Management
   (b) Stable-Storage Implementation
   (c)   Device Allocation Consideration

Q6. Differentiate between the following:-   (3×4=12)
   (a) Basic file system and Logical File System
   (b) File systm Interface and File File System Implementation
   (c) Directory Implementation and Directory Structure

Q7 Write short notes on the following:-   (4×3=12)
   (a) Access Control Verification
   (b) Disk reliability
   (c) Parallel System.
   (d) Shared Devices

END TERM EXAMINATION

THIRD SEMESTER [MCA] DECEMBER-2008

Paper Code: MCA 209	Subject: Software Engineering
Paper Id-44209	(Batch: 2004-2007)

Note: Attempt any five questions. All questions carry equal marks.

Q1. **(a)** What is a software crisis? Give some examples for it. **(4)**

(b) What are documents that need to be maintained for software? **(4)**

(c) Compare iterative enhancement model and evolutionary development model. **(4)**

Q2. **(a)** Draw a DFD for MCA admission system. **(6)**

(b) Design problem statement, use case diagram for MCA admission system. **(6)**

Q3. **(a)** A software development requires 90 PM during total development sub-cycle. The development time is planned for duration of 3 yrs and 5 months
    (i) Calculate the manpower cost expanded until development time.
    (ii) Determine development peak time.
    (iii) Calculate the difficulty and manpower build-up. **(6)**

(b) Describe the Albrecht's function count method with suitable example. **(3)**

(c) What are risk management activities? Is it possible to prioritize the risks? **(3)**

Q4 **(a)** Discuss difference between object oriented and function oriented design. **(3)**

(b) What problems are likely to arise if module has high complexity? **(3)**

(c) Define module cohesion. List different types of cohesion. **(3)**

(d) Can we have inheritance without polymorphism? Explain. **(3)**

Q5 **(a)** Explain Halstead theory of software science. Is it significant in today's scenario of component based software development? **(3)**

(b) Write a program for calculation of roots of quadratic equation. Generate Cross reference list for the program and also calculate $\overline{LV}$ and WM for this program.

(c) What are information flow metrics? Explain the basic information flow model. **(3)**

Q6. **(a)** Write short note on <u>Any Three</u> of following :-   (2×3=6)
      I.   MTBF
     II.   MTTF
    III. Failure intensity
    IV. CMM

  (b) Assume that initial failure intensity is 10 failure/cpu hrs. The failure intensity decay parameter is 0.03/failure. We have experienced 75 Failures upto this time. Find the failures experienced and failure intensity after 25 and 50 CPU hours of execution.   **(6)**

Q7. (a) Consider a program that computes grade of students. The grading is done as:

Marks obtained	Grade
80-100	A
60-79	B
50-59	C
40-49	D
0-39	E

      Generate test cases using robust testing and decision table based testing
                                  (8)

  (b) Discuss the importance of path testing during white box testing.   **(2)**

  (c) What is the difference between system testing and performance testing **(2)**

Q8. **(a)** What are various debugging approaches? Discuss with examples.   **(3)**

  (b) Write short note o Any Three of following:
    (i) Maintainability
    (ii) Boehm's maintenance model
    (iii) Regression Testing
    (iv) Reverse Engineering
    (v) Configuration Management.   **(3×3=9)**

END TERM EXAMINATION

Paper Code: MCA 207	**Subject: Front End Design Tools**
Paper Id-44207	**(Batch: 2004-2007)**

Note: Attempt all questions. Internal Choice is indicated.

Q.1   Answer all questions in brief:-   (10*2=20)

1. What is the difference between the toolbox and tool bar?
2. How do you know which control contains the focus?
3. What is the purpose for the Password char' property?
4. What is an overloaded operator? Give examples.
5. What is form module?
6. What is the difference between a conditional operator and a logical operator?
7. What does Abs ( ) do?
8. What is a bound control?
9. Name two advantages of ADO over the data control?
10. Explain the term Dim and ReDim.

Q.2   Explain the purpose of the following with examples: (10)

1. Data control
2. Grid control
3. Image control
4. Status bar control
5. frame control

Q.3   What an event procedure that accepts two strings as input and prints the longest string among these.   (10)

Q.4   (a) Explain MDI and SDI applications.   (6)

(b) Explain any five numeric functions in VB.   (4)

OR

(a) Write a program in VB to store four numbers given by user as input and store them into an array. Print the highest and lowest among the four numbers using label control?   (6)

(b) Explain any two controls that are capable of managing sets of records when
bound to a Data control. (4)

Q.5. Write short notes on **any two** of the following:- (5*2=10)

(a) DAO and RDO
(b) Active X Data controls
(c) Windows API functions
(d) Visual source safe