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)