Reg. No.									

MANIPAL UNIVERSITY

FOURTH SEMESTER MSc. TECH EMBEDDED SYSTEMS/FIRST SEMESTER ME EMBEDDED SYSTEMS & INSTRUMENTATION ESIGELEC, FRANCE/THIRD SEMESTER MSc TECH EMBEDDED SYSTEMS& INSTRUMENTATION ESIGELEC, FRANCE /THIRD SEMESTER MSc TECH EMBEDDED SYSTEMS DEGREE EXAMINATION – NOVEMBER 2015

SUBJECT: ESD 610/ESI 603/ESD 605 – SYSTEM SOFTWARE

Saturday, November 28, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

1. Describe the overview of second pass of a 2 pass assembler.

(10 marks)

2. Describe the two passes in a simple macro processor.

(10 marks)

3. Describe the working of direct linking loaders.

(10 marks)

4. Write an NFA to accept all strings of 0's and 1's containing 11 as a sub-string. Convert it into a DFA.

(5 marks × 2 = 10 marks)

5. What are ambiguous grammars? Show how ambiguity may be removed in the CFG for expressions by having precedence and associativity.

(4+6 = 10 marks)

6. Consider the grammar

   S → iCtSS' | a

   S' → eS | Є

   C → b

   Construct the predictive parsing table for the above grammar. Whether the grammar is LL(1). Is it ambigious? Do not change the grammar.

(7+2+1 = 10 marks)

7. Explain the working of LR parsers. List the advantages and disadvantages.

(5 marks × 2 = 10 marks)

8. Why intermediate codes are required? With example show different ways of implementing three address codes.

(2+8 = 10 marks)

9. List the various sources of code optimization. With example show how loop optimization takes place.

(4+6 = 10 marks)

10. Write a simple program using LEX and YACC which performs the action of a simple calculator.

(5+5 = 10 marks)