JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2016

B.Tech VIth Semester

COURSE CODE: 10B11CI612 MAX. MARKS: 15

COURSE NAME: Compiler Design

COURSE CREDITS: 04 MAX. TIME: 1 HR

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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1. Create a minimized DFA for a language of all even binary numbers. **[1 Mark]**
2. Perform recursive descent parsing over the input ***mpp*** for the grammar **[2 Marks]**

   S → XY
   X → m | mY
   Y → p

3. Is the following grammar ambiguous? Justify your answer with supporting parse trees.

   Prog → begin *Stmt_list* end **[3 Marks]**
   Stmt_list → Stmt ; Stmt_*list* | *Stmt*
   Stmt → *IfStmt* | others
   IfStmt → if (*Exp*) *Stmt_list*
   Exp → x

4. Compute the FIRST(X) and FOLLOW(X) for all non-terminals X of the following grammar.

   S → aABbCD | ϵ **[4 Marks]**
   A → ASd | ϵ
   B → Sac | hC | ϵ
   C → Sf | Cg
   D → aBD | ϵ

5. Perform LL(1) parsing on the input string ***acac*** for the grammar **[5 Marks]**

   S → AB
   A → Ca | ϵ
   B → BaAc | c
   C → b | ϵ