Code No.: **20521** **MR12**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
GundlapochampALLy (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2019

Subject: **Complier Design**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

Answer any **FIVE** Questions of the following **5x15 Marks= 75 Marks**

1. Explain about pass and phases of translation with an example.
2. a) Consider the following grammar (7M)

   S -> 0A/1B/0/1
   A -> 0S/1B/1
   B -> 0A/1S

   Construct leftmost derivation and parse tree for the following sentences
   i. 0101
   ii. 1100101

   b) Compute FIRST and FOLLOW Sets for all non terminals in the following grammar (8M)

   S -> Aa/bAc/Bc/bBa
   A -> d
   B -> d

3. a) Explain the procedure for constructing set of items in SLR parsers [7M]
   b) Compute LR(0) items for the following grammar S→AB A→a/ϵ B—>b/ ϵ [8M]
4. a) Construct the syntax directed translation scheme to convert a given arithmetic expression into three-address code. [9M]
   b) Differentiate between S-Attributed grammar and L-Attributed grammar. [6M]
5. a) Explain in detail about various storage allocations strategies (8M)
   b) Explain about implicit and explicit storage requests (7M)
6. a) Explain about following basic block optimization techniques (i) Structure preserving transformation (ii) Use of algebraic identities (8M)
   b) Explain the DAG representation of block (7M)
7. Explain about redundant sub expression elimination.
8. a) Explain common issues in design of code generator?
   b) Explain about usage count