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<b>R-11 / R-13</b>
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**Code: 1G451**

III B.Tech. I Semester Supplementary Examinations November 2018

**Automata and Compiler Design**

( Information Technology )

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

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1. a) Design a DFA that accepts the language over the alphabet  $\Sigma = \{ 0, 1, 2 \}$ , where the decimal equivalent of the language is divisible by 3  
b) Explain Chomsky hierarchy of languages?
2. Write about Phases of compiler with an example
3. Design SLR Parser for the following grammar  
     $S \rightarrow L = R$   
     $S \rightarrow R$   
     $L \rightarrow * R$   
     $L \rightarrow id$   
     $R \rightarrow L$
4. a) Write syntax directed translation in details?  
b) Write different forms of Intermediate code?
5. Write about type systems and explain equivalence of type expressions?
6. a) What is activation record? Explain the various fields of the activation record?  
b) Write and explain about static allocation strategy?
7. a) What are the different basic building blocks in code optimization?  
b) Explain different flow graphs used in code optimization?
8. Short notes on  
    a) Object Code Forms  
    b) Register allocation and assignment

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