**18CS602**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **July, 2021** | **Computer Science & Engineering** | | |
| **Sixth Semester** | **Compiler Design** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | Define Bootstrapping | CO1 | |  |
|  | b) | Give an example to eliminate left recursion with rules? | CO1 | |  |
|  | c) | What are the drawbacks of Predictive parsing? | CO1 | |  |
|  | d) | What is the classification of LR Parsers? | CO2 | |  |
|  | e) | Define an ambiguous grammar? | CO2 | |  |
|  | f) | What is syntax directed definition? | CO2 | |  |
|  | g) | What is syntax tree? | CO3 | |  |
|  | h) | What is semantic action? | CO3 | |  |
|  | i) | List the contents in Symbol table? | CO4 | |  |
|  | j) | What is backpatching? | CO4 | |  |
| **Unit - I** | | | | | |
| 2. | a) | How to design a Lexical Analyzer to identify reserved words and identifiers? | CO1 | **5M** | |
|  | b) | Explain how input buffering helps Lexical analyzer in compilation process? | CO1 | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. |  | Construct predictive parsing table for the grammar S 🡪 A A 🡪 aB/Ad B 🡪 bBC/f C 🡪 cg and check the acceptance of the string ‘abfcg’ | CO1 | **10M** | |
| **Unit – II** | | | | | |
| 4. |  | Prepare a canonical parsing table for the grammar S 🡪 CC C 🡪 cC C 🡪 d | CO2 | **10M** | |
|  |  | **(OR)** |  |  | |
| 5. |  | Construct SLR parsing table for the grammar S 🡪 AS/b A 🡪 SA/a | CO2 | **10M** | |
| **Unit – III** | | | | | |
| 6. | a) | Explain three address codes and mention its types. How would you implement the three address statements? Explain with suitable examples. | CO3 | **5M** | |
|  | b) | Translate the expression (a+b)\*(c+d)+(a+b+c) into quadruple, triple and indirect triple. | CO3 | **5M** | |
|  |  | **(OR)** |  |  | |
| 7. | a) | Explain in detail about the issues in the design of a code generator | CO3 | **5M** | |
|  | b) | Briefly discuss about simple code generation algorithm | CO3 | **5M** | |
| **Unit - IV** | | | | | |
| 8. | a) | Write about implementation of stack allocation scheme | CO4 | **5M** | |
|  | b) | What is an activation record? Discuss its syntax | CO4 | **5M** | |
|  |  | **(OR)** |  |  | |
| 9. | a) | Define symbol table. Explain about the data structures used for symbol table | CO4 | **7M** | |
|  | b) | Explain in detail about implementation of Block structured Languages? | CO4 | **3M** | |

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