H.T.No. | | | | | | | | | | |

Code No: CT3520 **SRGEC-R20**

II B.Tech II Semester Supplementary Examinations, January 2023

COMPILER DESIGN

(Artificial Intelligence and Data Science)

Time: 3 Hours **Max. Marks: 70**

Note: Answer one question from each unit.
All questions carry equal marks.

5 × 14 = 70M

UNIT-I

1. Identify the lexemes that makeup the token in the following program segment. Indicate the corresponding token and pattern. (14M)

```
void swap (int i, int j)
{
int t ;
t = i ;
i = j ;
i = t ;
}
```

(OR)

2. a) Explain language processing system. (8M)
   b) Construct transition diagram for relational operators and comments in C. (6M)

UNIT-II

3. Classify various bottom-up parsing techniques with neat sketch. (14M)

(OR)

4. Generate CLR Parsing table for grammar and parse the string id+(id*id). (14M)

   E →E + T | T

   T→T * F | F

   F→€ | id

UNIT-III

5. a) Explain different schemes of storing name attribute in symbol table. (8M)
   b) Analyze the advantages and disadvantages of heap storage allocation strategy. (6M)

(OR)

6. a) Construct SDD for declaration statement. (7M)
   b) What is a symbol table? Explain about the contents of symbol table. (7M)

UNIT-IV

7. Explain various three- address code representation in compilers with suitable example. (14M)

(OR)

8. Explain any four machine independent code optimization techniques with suitable examples for each. (14M)

UNIT-V

9. Generate target code from sequence of three address statements using simple code generator algorithm with an example. (14M)

(OR)

10. Construct a DAG for the following basic block:

    d:=b*c

    e:=a+b

    b:=b*c

    a:=e-d

    Then generate the code for above constructed DAG. (14M)

*****