

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS-2022

B.Tech-VI Semester (CS)

COURSE CODE (CREDITS):18B11CI612(3)

MAX. MARKS: 35

COURSE NAME: Compiler Design

MAX. TIME: 2 Hours

COURSE INSTRUCTORS: Dr. Rajni Mohana/Dr.Yugal Kumar/Dr.Himanshu Jindal/Dr.Kapil Sharma

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

(Q1) Generate the 3-Address code of following procedure

[Marks 5]

```
Int dotproduct( int n, int x[], int y[] )
{
    If (n==10)
        Return 0;
    Else
    {
        Int result = x[n] * y[n];
        Return (result += dotproduct(n+1, x, y));
    }
}
```

(Q2) Construct the SLR table for the grammar: $S \rightarrow aSbS \mid a$

[Marks 5]

(Q3) Consider the following expression and construct a DAG for it

[Marks 5]

$(((+ + a + a) + (a + a)) + ((a + + + a) + (a + a)))$

(Q4) What is LALR parser? Construct the set of LR(1) items for this grammar:

[Marks 5]

$S \rightarrow CC$
 $C \rightarrow aC$
 $C \rightarrow d$

(Q5) Consider the following program code:

[Marks 4+4]

```
Prod=0;
I=1;
Do{
    Prod=prod+a[i]*b[i];
}
```

```
I=i+1;  
}while (i<=10);
```

- a. Partition in into blocks
- b. Construct the flow graph

(Q6) (a) Is shift / shift conflict also possible in LR(0)? Justify your answer with proper reason. [Marks 2]

(b) Describe input buffering scheme in lexical analyzer. [Marks 2]

(c) What is Recursive Descent parsing? List the problems faced in designing such a parser.

[Marks 2]

(d) What are annotated parse trees? Give examples.

[Marks 1]

CS Examinations