

2124

B. E. (Information Technology)
Seventh Semester
PCIT-702: Compiler Design

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- What are the two parts of compilation? Explain briefly.
- Define handle pruning.
- Give the fields of an activation record.
- What is annotated parse tree?
- What is DAG? List out the advantages of using DAG.

(5x2)

UNIT - I

- Discuss the various phases of compiler and trace it with the program statement $(a=b+c*60)$. (10)
- Design ϵ -NFA for the regular expression $abb(a|b)^*$ and convert it into DFA. (10)
- Construct a predictive parsing table for the following grammar and show whether the string $(a, (a, (a, a)))$ will be accepted or not.

$$S \rightarrow (L) | a$$

$$L \rightarrow L, S | S$$

(10)

UNIT - II

- Explain synthesized and inherited attribute translation.
 - What is symbol table? Discuss the data structures used for symbol table. (2x5)

P.T.O.

(2)

VI. Consider the following program segment :

```
prod =0;
```

```
i=1;
```

```
Do {
```

```
  prod = prod + a[i] * b[i];
```

```
  i = i+1;
```

```
  } while (i<=10);
```

- a) Convert the code into three address code and partition it into blocks.
- b) Construct the flow graph.

(7,3)

VII. Discuss the issues in code generation with example. Also, write the algorithm for simple code generator.

(10)

x-x-x