Reg. No. :

Question Paper Code: 36802

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Sixth Semester

Information Technology

01UIT602–COMPILER DESIGN

(Regulation 2013)

Duration: Threehours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Interpret the two parts of a compilation and List the phases that constitute it.

2. Distinguish Compiler with interpreter.

3. Define handle pruning.

4. When is a grammar said to be LL(1)?

5. Write the methods of representing a syntax tree?

6. Define back patching.

7. Compare and contrast register and address descriptors.

8. Define stack allocation.

9. Recall code optimization.

10. Give the issues to be considered while applying the techniques for code optimization.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe in detail about the various phases of a compiler and show how the statement
   *A: = B – C * 40* is translated in various stages. (16)

Or

(b) Discuss in detail the various phases of a compiler for translating a source
   statement to object code. (16)

12. (a) Create the predictive parser for the following grammar:

   $S \rightarrow (L) \mid a$

   $L \rightarrow L,S \mid S$

   Show the moves of the parser for the sentence *(a,(a,a))*. (16)

Or

(b) Construct a SLR parsing table for the following grammar and parse the string *baab*.

   S->AS|b

   A->SA|a. (16)

13. (a) Explain about the different type of three address statements. (16)

Or

(b) Examine how backpatching can be used to generate code for Boolean expressions
   and flow of control statements. (16)

14. (a) (i) Explain the issues in design of a code generator. (8)

   (ii) Discuss run time storage management of a code generator. (8)

Or

(b) (i) Write detailed notes on basic blocks and flow graphs. (8)

   (ii) How would you construct a DAG for a basic block? Explain with an example. (8)

15. (a) Why do we need code optimization? Explain the principal sources of optimization. (16)

Or

(b) Explain the Principle Sources of Optimization in detail with an example. (16)

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