Reg. No. : | | | | | | | | | | |

Question Paper Code:46201

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Computer Science and Engineering

14UCS601–PRINCIPLES OF COMPILER DESIGN

(Regulation 2014)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Compiler can check

   (a) Logical Error (b) Syntax Error

   (c) Both logical and syntax Error (d) Not logical and syntax Error

2. The lexical analyzer takes_____as input and produces a stream of_____as output

   (a) Source program, tokens (b) Token, source program

   (c) Either A and B (d) None of the above

3. YACC resolves conflicts by of type

   (a) Shift-Shift (b) Shift Reduce

   (c) RMS current decreases (d) A and B

4. The process of assigning load addresses to the various parts of the program and reflect the assigned addresses is called

(a) Assembly (b) Parsing (c) Relocation (d) Symbol resolution

5. A grammar that produces more than one parse tree for some sentence is called as

(a) Ambiguous (b) Unambiguous (c) Regular (d) All the above

6. Which one of the following statement is false for the SLR (1) and LALR (1) parsing tables for a context free grammar?

(a) The reduce entries in both the tables may be different
(b) The error entries in both the tables may be different
(c) The go to part of both tables may be different
(d) The shift entries in both the tables may be identical

7. In a bottom-up evaluation of a syntax directed definitions, inherited attributes can

(a) always be evaluated
(b) be evaluated only if the definition
(c) be evaluated only if the definition has
(d) never be evaluated synthesized

8. In a bottom-up evaluation of a syntax directed definitions, inherited attributes can

(a) Always be evaluated
(b) Be evaluated only if the definition
(c) be evaluated only if the definition has synthesized
(d) Never be evaluated

9. Object code form of code generation is represent by

(a) Absolute Code (b) Re locatable machine code
(c) Assembler Code (d) All the above

10. What is the minimum number of registers needed in the instruction set architecture of the processor to compile this code segment without any spill to memory?

(a) 3 (b) 4 (c) 5 (d) 6

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail the process of compilation. Illustrate the output of each phase of compilation for the input position=initial+rate *10 (8)

12. Obtain the minimized state DFA for the regular expression (a/b)*abb using subset construction method. (8)

13. Find the LALR for the given grammar and parse the sentence (a + b) * c (8)

$$E \rightarrow E + T \mid T ,$$

$$T \rightarrow T * F \mid F ,$$

$$F \rightarrow (E) / id.$$

14. Explain the Specification of simple type checker for statements, expressions and functions. (8)

15. Draw the DAG for the following three address code.

d = b * c e = a + b b = b * c a = e - d. (8)