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

Question Paper Code: 31261

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Sixth Semester

Computer Science and Engineering

01UCS601 - PRINCIPLES OF COMPILER DESIGN

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State any two reasons as to why phases of compiler should be grouped.
2. Distinguish between compiler and interpreter.
3. Write a regular definition to represent date in the following format: JAN-5th 2014.
4. What is the use of an error handler?
5. Write a brief note on YACC.
6. Mention the role of the parser.
7. What are the limitations of using static allocation?
8. Explain dynamic storage allocation.
9. List the applications of DAG.
10. What is peephole optimization?

PART - B (5 x 16 = 80 Marks)

11. (a) With a neat sketch, discuss the phases of a compiler. (16)

Or

(b) Why is it necessary to study the theory behind the design of compiler? Discuss in detail the cousins of compilers. (16)

12. (a) Convert the regular expression *(a|b)*ab*#* to DFA directly. (16)

Or

(b) Construct a DFA directly from the regular expression *(a|b)*abb#*. (16)

13. (a) Construct the parsing table for the grammar

S-> iEtSS' | a
S' -> eS | €
E -> b

and design a syntax analyzer for a sample language. (16)

Or

(b) Consider the following grammar and construct a SLR parsing table for the same

E-> E+T
*T->T*F*
T->F
F->(E)
F->id (16)

14. (a) (i) Give the syntax directed definition for if-else statement. (8)

(ii) Write short notes on activation tree. (8)

Or

(b) With supporting examples, describe the run time storage management. (16)

15. (a) (i) Elaborate the issues involved in design of a code generator. (8)

(ii) Explain looping and flow graphs. (8)

Or

(b) (i) Draw the block diagram of organization of code optimizer. (8)

(ii) Give a brief note on principal sources of optimization. (8)

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