

TCS-602

315

Printed Pages : 3

Paper Code & Roll No. to be filled in your Answer Book

Roll No.

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B.Tech. (VI - Sem.)

Even Semester Examination - 2016

COMPILER DESIGN*[Time : 3 Hours]**[Maximum Marks : 100]*

Note: Attempt **all** questions, each question carries **equal** marks.

Q1. Attempt **any four** parts of the following: (5×4=20)

- (a) What is compiler? Explain the various function of compiler.
- (b) Discuss the BNF notation in detail.
- (c) Write context free grammar for numeral.
- (d) What is the role of lexical analyzer? What does the regular expression $(0^*1 / 1^*)^*$ denote?
- (e) What do you mean by a formal grammar, explain with suitable example?
- (f) Discuss the rules for finding the syntactic specification of programming languages.

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(1)

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Q2. Attempt **any four** parts of the following: (5×4=20)

- (a) Discuss the various parsing techniques.
- (b) Write an algorithm to compute postfix notation of a given equation.
- (c) What do you understand by pass? Discuss merits and demerits of multi pass and single pass compiler.
- (d) Discuss the role of compiler writing tools. Describe various compiler writing tools.
- (e) Differentiate Lexical phase errors with syntactic phase errors in brief.
- (f) How boot strapping of a compiler to more than one machine is done?

Q3. Attempt **any two** parts of the following: (10×2=20)

- (a) Explain YACC and algebraic law in detail.
- (b) Explain the capabilities of the CFG with suitable example. What do you mean by an ambiguous grammar, give an example?
- (c) What do you understand by preliminary scanning? Describe the ways how lexical analyzer is grouped to make a pass.

Q4. Attempt **any two** parts of the following: (10×2=20)

- (a) Why its difficult to simulate NFA? Discuss a method for constructing an NFA from a regular expression.
- (b) Discuss the role of syntax directed translation scheme.
- (c) What do you understand by ambiguity in grammar? How the grammar is made unambiguous using precedence order and associatively among arithmetic operations?

Q5. Attempt **any two** parts of the following: (10×2=20)

- (a) Explain various storage allocation strategies.
- (b) What do you mean by code optimization? Explain the role of global data flow analysis in compilation techniques.
- (c) Write the short notes on the following:
 - (i) Directed Acyclic graph
 - (ii) Induction variable elimination

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