[ET]

Enrol. No. :-_____

END SEMESTER EXAMINATION : APRIL/ MAY, 2018

COMPILER CONSTRUCTION

(Only for Repeaters)

Time :3 Hrs

Maximum Marks :70

Note: Attempt questions from all sections as directed.

Section - A **: *Attempt any five questions out of six. Each question carries 06 marks.*** **[30 Marks]**

Q1. What do you mean by an ambiguous grammar? Check whether the following grammar is ambiguous or not. If ambiguous, disambiguate the grammar.

$E \rightarrow E + E \mid E - E \mid EE \mid E * E \mid a/b$

Q2. (a) What do you mean by cross-compiler? Explain Bootstrapping with examples. (3)

(b) Eliminate left recursion from the following grammar (3)

A->Ba | b

B-> Bc | Ad | ϵ

Q3. Explain in detail what are the different errors seen by each phase of the complier. Explain with examples. (6)

Q4. For given set of instruction. A) Find out the Leaders. (3)
B) Design the control flow diagram. (3)

(1) a := 0
(2) b := b+1
(3) c := c+b
(4) a := b*2
(5) if a<N goto L1
(6) return c

Q5. Explain the phases of Compiler and their output for given expression.
A := B + (C*10) / (D+8) – E ; [where B=8, C=4, D=2, E=8]

Q6. Define Quadruple, Triple and Indirect Triple and represent them for given expression:
a = (b+c) * d / (b-c)

***Section – B**: Attempt any two questions out of three. Each question carries 10 marks.* [20 Marks]

Q7. Consider the following grammar

S -> AS | b

A -> SA | a

a) Construct the SLR table for this grammar and show all the moves for the parsing of input string abab using this table.

b) Construct the canonical parsing table for this grammar.

Q8. Consider the following grammar for:

S -> a | ^ | (T)

T -> T,S | S

a) Show the steps of a shift reduce parser corresponding to string (((a, a, ^, (a)), a) (5)

b) Compute LEADING and TRAILING for the grammar. (2)

c) Compute the operator precedence relations for this grammar. (3)

Q9. a) Construct a minimum state DFA for ba (aba | bab)* ab (6)

b) Write regular expression for identifier and keywords in C++. Also draw FSA. (4)