H Roll No. .....

TCS–601/TIT–601

B. TECH. (CS/IT) (SIXTH SEMESTER) MID SEMESTER EXAMINATION, 2018

COMPILER DESIGN

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) This question paper contains *two* Sections.

(ii) Both Sections are compulsory.

Section—A

1. Fill in the blanks/True-False : (1×5=5 Marks)
   (a) Linear links ..... and ..... then converts into executable machine code.
   (b) Input for Code Generator is ..... .
   (c) Regular expression for float constant is ..... .
   (d) LR(1) used in CLR parsing. (True/False)
   (e) Operator precedence parsing is example of Top-Down parsing. (True/False)
2. Attempt any *five* parts : (3×5=15 Marks)
   (a) Explain Symbol table manager and error handler.

(b) Compute First of non-terminals in :
S –> ABa A –> b | ε B – AcB | ε

(c) What is the advantage of two pass Compiler over one pass Compiler ?

(d) Define Operator Grammar.

(e) Design combine-DFA for all relational operator.

(f) Explain Left Recursion with example.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

(a) Explain each phase of Compiler with the help of diagram.

(b) Convert the following line of code into assembly code showing all phases of compiler :

a = b + c * d + e

(c) Construct DFA for the following line of code :

while (n > 0)
{ a++ ;
n – ; }

4. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

(a) Write down rules for constructing SLR Table.

(b) Explain Shift-reduce parser with the help of example.

(c) Construct predictive parsing table for the following grammar (remove left recursion/left factor if required) :

S –> SS + | SS * | a

5. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)

(a) Construct the LR(0) set of items for the following grammar :

X –> YY Y –> aY Y –> b

(b) Explain the different Compiler Construct tools.

(c) Describe Cross Compiler and Bootstrapping with the help of example.