Roll No. | | | | | | | | H

TCS–601/TIT–601

B. Tech. (CS & IT) (Sixth Semester)
Mid Semester EXAMINATION, 2017
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) Assembler converts assembly code into .....
   (b) Input for syntax analyzer is .....
   (c) Regular expression for identifier is .....
   (d) LR (0) used in CLR parsing. (True/False)
   (e) Predictive parser is example of top-down parsing. (True/False)
2. Attempt any *five* parts : (3×5=15 Marks)
   (a) Differentiate among Tokens, Patterns and Lexemes.

(b) Compute first of non-terminals in S->XYx X->y/ε y->XzY/ε

(c) What is the advantage of intermediate code ?

(d) Define handle.

(e) Design DFA for identifier, integer value and float value.

(f) Give the example of left factoring.

Section—B

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

(a) Explain analysis and synthesis model of compiler with the help of diagram.

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

p = q – r * t + u

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

```
if (n>0)
  p++;
else
  q++;
```

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

(a) Write down rules for computing first and follow with the help of example.

(b) Define left recursion and remove left recursion from the following grammar :

S–>Sab | Sba | a | b | ε

(c) Construct predictive parsing table for the following grammar then parse the string +*aaa: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 :

S->BB B->aB B->b

(b) Write down input buffering method with the help of example.

(c) Write down rules for constructing SLR table.