PVP 14

Code: IT4T4

II B.Tech - II Semester – Regular Examinations – May 2016

AUTOMATA AND COMPILER DESIGN
(INFORMATION TECHNOLOGY)

Duration: 3 hours Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1)

a) Write the tuples of DFA.
b) If L_1={11,100} and L_2={a, ba} then what is their concatenation L_1L_2 ?
c) Write the regular expression for set of all strings whose 3rd symbol from left end is 1 over Σ={0,1}.
d) Define each letter in LR(1).
e) What is ambiguous grammar?
f) What is synthesized attribute?
g) What is syntax directed definition?
h) What is type conversion?
i) What are the entries in Symbol table?
j) What is constant folding?
k) What is register allocation and register assignment?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2)

a) Design DFA which accepts the strings that have number of a's divisible by three over Σ={a,b}. 6 M

b) Explain the phases of compiler and write the output of each phase for the C code a=b*c-d*e. 10 M

3) Construct LL(1) parsing table for the following grammar

E→E+T / T

T→T*F / F

F→(E) / id

and using that table verify the acceptance of the string id+id*id. 16 M

4)

a) Explain about various intermediate code representations. 10 M

b) What is inherited attribute? Explain syntax directed definition with inherited attributes with an example. 6 M

5)

a) Explain about symbol table management. 7 M

b) Explain about storage allocation strategies. 9 M

6)

a) Explain about peephole optimization. 8 M

b) What is DAG? Explain how to construct DAG for basic blocks with an example. 8 M