

Please write your Roll No. immediately

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First Term Examination (September 2009)

Paper Code: ETCS 405
Time : 1-1/2 Hrs.

Subject: Compiler Construction
Max Marks : 30

Note: Attempt any three questions. Question no. 1 is compulsory.

Q1. (a) Define the following: (6)

- (i) Interpreter
- (ii) Assembler
- (iii) Preprocessor
- (iv) Cross Compiler
- (v) Regular Definitions
- (vi) Left Factoring

(b) Differentiate between phases and passes of Compiler. (2)

(c) Draw the Non-Deterministic Finite Automata for the expression: (2)
 $(a+b)^*b(a+b)$

Q2. (a) If $N = \{S,A,B\}$ and $T = \{a,b\}$ then, determine whether the grammar $G = (N,T,P,S)$ is:

- (i) Type 0 grammar but not a Type 1 grammar
- (ii) Type 1 grammar but not a Type 2 grammar
- (iii) Type 2 grammar but not a Type 3 grammar (5)

Where the set of productions P is:

- (a) $S \rightarrow aAB, A \rightarrow Bb, B \rightarrow c$
- (b) $S \rightarrow ABa, AB \rightarrow a$
- (c) $S \rightarrow AB, B \rightarrow aAb, aAb \rightarrow b$
- (d) $S \rightarrow bA, A \rightarrow B, B \rightarrow a$
- (e) $S \rightarrow aA, aA \rightarrow B, B \rightarrow aA, A \rightarrow b$

(b) Minimize the state of DFA for the given Transition table: (3)

States	a	b
A	B	E
B	C	F
C	C	F
D	C	D
E	E	E
F	C	D

P.T.O.