Department of Computer Science
(University of Delhi)

Roll No.....

MCA 3rd Semester

IInd Minor Test (October 2016)

Subject Name: Automata Theory ***Subject Code: MCA-304***

Max Marks: 15 ***Time: 1:00 Hrs***

Ques1 Design DFA to accept strings of 0's and 1's which when interpreted in reverse as binary number would not be a multiple of 3. **(3 marks)**

Ques2 Give regular expression for the string w over {a,b} belonging to the following language
$L = \{a^n b^m \mid n+m \text{ is even}\}$ **(2 marks)**

Ques3 State pumping lemma and prove $L=\{wcw^R \mid w \text{ is a string of } \{a,b\}^* \text{ and } |w|>=1\}$ is not regular **(3 marks)**

Ques4 DEtermine the type of grammar. Name the corresponding automata **(1.5 marks)**

S->aaA|λ
A->bB|AD
B->c
D->d

Ques5 What is right linear grammar?Give an example **(1 marks)**

Ques6 Construct DFA that accepts the language generated by grammar **(2.5 marks)**

S->abA
A->baB
B->aA|bb

Ques7 Minimize the given DFA. In the given DFA {a} is the initial state and {d,c,e} are final states. **(3 marks)**

	0	1
→ a	b	c
b	a	d
* c	e	f
* d	e	f
* e	e	f
* f	f	f

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