Registration No :

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MCA
MCC204

2nd Semester Back Examination 2017-18
THEORY OF COMPUTATION
BRANCH : MCA
Time : 3 Hours
Max Marks : 70
Q.CODE : C936
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Q1	**Answer the following questions :**	**(2 x 10)**
a)	Design a DFA for L=φ.	
b)	Explain the component of DFA.	
c)	Write the formal definition of a PDA.	
d)	What is the application of pumping lemma?	
e)	Define Ambiguity in context-free grammar.	
f)	Is the language accepted by NFA accepted by TM.	
g)	Write two example of NP-Complete problem.	
h)	Is every NFA has equivalent DFA?	
i)	Define Turing Machine.	
j)	Defineparse tree.	

Q2	Construct the NFA for the RE (ab+b)*ab then to DFA.	**(10)**
Q3	Prove that L = {a^n!n is a perfect square} not a regular language.	**(10)**
Q4	Convert the grammar {S→0S1|A,A→1A0|S|Ɛ}to PDA	**(10)**
Q5	Construct a PDA to accept the language WW^R.	**(10)**
Q6	Design a Turing Machine that compute addition.	**(10)**
Q7	Design a DFA to accept the language : L={w!w has both an even number of 0's}	**(10)**

Q8	**Answer any TWO :**	**(5 x 2)**
a)	Recursive Language	
b)	Post Correspondent Problem	
c)	Context Free Grammer.	