

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

IT-713 (GS)**B.E. VII Semester**

Examination, December 2017

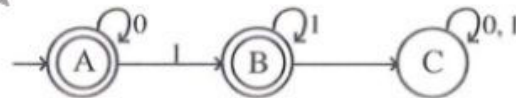
Grading System (GS)**Automata and Compiler Design**

Time : Three Hours

Maximum Marks : 70

- Note: i) Attempt any five questions.
ii) All questions carry equal marks.

- Given $\epsilon = \{a, b\}$, construct a DFA that can recognize the language. $L = \{b^m ab^n \mid m, n > 0\}$
 - Construct an NFA equivalent to the following regular expression.
 $10+(0+1)^*0^4$
- Find the regular expression for the strings accepted by the DFA shown in fig.



- Define the following terms:
 - Alphabets
 - Strings
 - Language
- Consider a grammar $G=(V, T, P, S)$, where $V=\{S\}$, $T=\{a,b\}$
 $P: S \rightarrow aSb$
 $S \rightarrow ab$
 Find out the language generated by the given grammar G.

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- Construct the LMD and RMD and the parse tree for the yield $a+a+a$ using grammar.
 $S \rightarrow S+S \mid S-S \mid S*S \mid (S)a$
- Explain Lexical analysis. Discuss the role of Lexical analyzer in compiler design.
 - Eliminate the left recursion for the following grammar.
 $S \rightarrow (L) \mid S$
 $L \rightarrow L, S \mid S$
- Construct the canonical LR parse table for the following grammar.
 $S \rightarrow E$
 $E \rightarrow T+T \mid F$
 $T \rightarrow (a) \mid (E)$
- Translate the expression $a=b*-c+b*-(c)$ in to syntax Tree quadruples triples.
 - Explain syntax directed translation mechanism.
- Explain following term.
 - Lexical phase errors
 - Symbol table management
 - Allocation schemes
- Write a short notes (any three)
 - Loop optimization
 - Peep hole optimization
 - Dynamic storage allocation
 - DAG

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