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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

(Make UP Examination April-2018)

B.Tech. 6TH Semester

COURSE CODE: 10B11CI612 MAX. MARKS: 25

COURSE NAME: COMPILER DESGIN

COURSE CREDITS: 4 MAX. TIME: 1.5 Hrs

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q.1 [CO5] Write short note on: (1.5x4)

i) Inherited translation
ii) Synthesized translation
iii) S-attributed definition
iv) L- attributed definition

Q.2 [CO 4] Consider the following grammar: (2x3)

$E \rightarrow E + T \mid T$
$T \rightarrow TF \mid F$
$F \rightarrow F^* \mid a \mid b$

a. Construct the collection of LR (0) items for this grammar.
b. Construct the SLR parsing table for this grammar.
c. Show the moves of LR parser on the input string a*+a*.

Q.3 [CO 4] Consider the following grammar: (2x4)

$S \rightarrow Aa \mid bAc \mid dc \mid bda$
$A \rightarrow d$

a. Construct the collection of LR (1) items for this grammar.
b. Construct the parsing table using CLR (1) algorithm.
c. Construct the parsing table using LALR (1) algorithm.
d. Prove that the above grammar is LALR (1) but not SLR (1).

Q.4 [CO 3] Answer the following statements with proper justifications: (2+1+2)

a. Why LR parsing is more attractive as compared to LL parsing?
b. If the grammar is ambiguous then there exist exactly one handle for each right sentential form.
c. A grammar containing left recursion cannot be LL (1), therefore a grammar containing right recursion cannot be LR (1).