

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2023

B.Tech-VI Semester (CS/IT)

COURSE CODE (CREDITS): 18B11CI612 (3)

MAX. MARKS: 25

COURSE NAME: Compiler Design

COURSE INSTRUCTORS: Yugal Kumar, Himanshu Jindal,
Prateek Thakral, Rajni Mohana, Kushal Kanwar

MAX. TIME: 2 Hour

Note: All questions are compulsory. Marks are indicated against each question in brackets.

- Q.1 [CO3] Consider the following grammars. Is it suitable for SLR parsing? Justify with proper reasoning. (5)
- $$\begin{aligned} S &\rightarrow eBbA|eA \\ A &\rightarrow a|\epsilon \\ B &\rightarrow a|aD \\ D &\rightarrow b \end{aligned}$$
- Q.2 [CO3] Prove that the following grammar is suitable for LALR parsing. If not, specify the reason for the same. (5)
- $$\begin{aligned} S &\rightarrow L=R|R \\ L &\rightarrow *R|id \\ R &\rightarrow L \end{aligned}$$
- Q.3[CO3] Consider the following unambiguous grammar (5)
- $$E \rightarrow E+E | E * E |(E) | id$$
- How we make this grammar suitable for the SLR parsing?
- Q.4 [CO3] Consider the following left and right recursive grammar (5)
- $$E \rightarrow abE | EcE | d | e$$
- Is it appropriate for the CLR parsing? Justify your answer with proper evidence.
- Q.5[CO2] Can we design the recursive descent parser for the following grammar? (5)
- $$\begin{aligned} S &\rightarrow iCtSE | a \\ E &\rightarrow eS | \epsilon \\ C &\rightarrow b \end{aligned}$$