

**B.Tech. – VIEP – COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

00664 June, 2017

**BICS-016 : SYSTEM PROGRAMMING AND
COMPILER DESIGN**

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **seven** questions. All questions carry equal marks.*

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1. What are the functions of an assembler ? What are the various phases of an assembler ? Explain the role of each phase. 10
 2. Explain in detail about macros with an example of SIC/XE. 10
 3. (a) Differentiate between loader and linker. 5
(b) Describe in detail about software tools. 5
 4. Consider the grammar :
$$A \rightarrow \text{idt } A A'/b$$
$$A' \rightarrow e^A/\epsilon$$
$$d \rightarrow f$$

Construct predictive parsing table for the above grammar. 10

5. Clarify the difference between LR, SLR and LALR parsing tables. Mention the importance of LR, SLR and LALR parsing tables. 10
6. (a) Explain Bootstrapping in a compiler. 5
(b) Differentiate between operator precedence parsing and top down parsing. 5
7. Define triples. How are they different from quadruples ? Convert the following expression into three address code and triples : 10
$$S = (a + b) / (c - d) * (e + f)$$
8. Describe in detail about symbol table generation with an example. 10
9. (a) Explain the concept of DAG. 5
(b) Describe code optimization. 5
10. Write short notes on the following :
(a) Ambiguous Grammar 5
(b) Problems in Semantic Errors 5
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