

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

Term-End Examination

December, 2014

00695

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

Time : 3 hours

Maximum Marks : 70

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

1. (a) How many types of pass translations are there ? Explain them. 5
- (b) Explain the structure of Pass-1 assembler. 5
2. (a) What is macro expansion ? What are the steps present in macro expansion ? 5
- (b) Write short notes on nested macro calls and macro facilities. 5
3. Draw the design of a macro-preprocessor and explain data structures in it, with an example. 10
4. (a) State and explain relocation algorithm. 5
- (b) State and explain program linking algorithm. 5

5. (a) How many steps present in debug monitors, provide the facilities for dynamic debugging? 5
- (b) What are the steps involved in dynamic debugging of a program? 5
6. Define compiler. Explain the phases of a compiler with a neat diagram. 10
7. (a) What are the primary operations in shift reduced parser? Give some examples. 5
- (b) Write down the conflicts during shift reduced parsing. Give some examples. 5
8. (a) What are the different steps in compiling process? Briefly explain. 5
- (b) What is the behaviour of the LR-parser? Write the LR parsing algorithm. 5
9. (a) What is the procedure present in eliminating left recursion from syntax directed translation? 5
- (b) State and explain the various types of statements : while and case with example grammar. 5
10. Describe the various register allocation optimization techniques with examples. 10
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