

Roll No.

MCA–15/M. Sc. (IT)–15

System Software

Master of Computer Applications/

Master of Science in Information Technology

(MCA–11/16, M. Sc. (IT)–12/16)

Fourth Semester, Examination, 2017

Time : 3 Hours

Max. Marks : 60

Note : This paper is of **sixty (60)** marks containing **three (03)** sections A, B and C. Learners are required to attempt the questions contained in these sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section ‘A’ contains four (04) long answer type questions of fifteen (15) marks each. Learners are required to answer *two* (02) questions only.

1. Give an overview of the phases with respect to the compilation process.
2. Explain the procedure to design an assembler.
3. Discuss dynamic memory allocation and access in a compilation process.
4. What is System Software ? Discuss in detail.

Section-B**(Short Answer Type Questions)**

Note : Section 'B' contains eight (08) short answer type questions of five (05) marks each. Learners are required to answer *four* (04) questions only.

1. What is a loader ? Define.
2. Explain the following terms :
 - (a) Macros and Macroprocessor
 - (b) Context Free Grammar
3. What is LEX ? Explain the LEX specification format.
4. Explain the analysis and synthesis phases of compiler with the help of example.
5. Define an Interpreter. What are the differences between a Compiler and an Interpreter ?
6. What is dynamic debugging ? Explain in detail.
7. What is meant by 'Code Optimization' ?
8. Define parsing. What is the role of a parse tree ?

Section-C**(Objective Type Questions)**

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

1. Select the most appropriate option in the following questions from the given choices.
 - (i) Pick the machine independent phase of the compiler :
 - (a) Syntax analysis

- (b) Intermediate code generation
 - (c) Lexical analysis
 - (d) All of the above
- (ii) Input of LEX is :
- (a) Set to regular expression
 - (b) Statement
 - (c) Numeric data
 - (d) ASCII data
- (iii) An assembler is :
- (a) Programming Language dependent
 - (b) Syntax dependent
 - (c) Machine dependent
 - (d) None of the above
- (iv) A LEX compiler generates :
- (a) Lex object code
 - (b) Transition tables
 - (c) C Tokens
 - (d) None of the above
- (v) Compiler has phases :
- (a) 7
 - (b) 6
 - (c) 8
 - (d) None of the above
- (vi) Type checking done normally during :
- (a) Lexical analysis
 - (b) Syntax analysis
 - (c) Syntax direct translation
 - (d) Code generation

- (vii) YACC is available as a command on the :
- (a) MINIX
 - (b) UNIX
 - (c) DOS
 - (d) None of the above
- (viii) An example of intermediate language is :
- (a) SNOBOL
 - (b) PASCAL
 - (c) COBOL
 - (d) UNCOL
- (ix) Which of the following system software resides always in main memory ?
- (a) Text editor
 - (b) Assembler
 - (c) Linker
 - (d) Loader
- (x) Bottom up parsing involves :
- (a) Shift reduce
 - (b) Handle pruning
 - (c) Operator Check
 - (d) Both (a) and (b)