

MCA,SEM 3RD –2014
SYSTEM PROGRAMMING
Paper Code (MCA-305A)
Paper Id. [B1161]

Time allowed: 3 Hours

Max. Marks: 100

Note: Attempt One question each from Section A, B, C, and D. Section E is compulsory.

Section-A

1. Describe pass 1 and pass 2 of an assembler with diagrams and explain it in detail. (20)
2. a) What is meant by Macro? Explain macro-processor and conditional macro expansion scheme with example.
 b) What are addressing modes in assembly language? Explain briefly. (10,10)

Section-B

3. What do you mean by loader? Explain the working of a compile and go loader and a general loader. (20)
4. a) Differentiate between linking loader and linkage editor.
 b) Explain screen and structure editors.
 c) What is the role of a text editor and what qualities make a good text editor? (7,7,6)

Section-C

5. a) Explain the different phases of a compiler with the help of a neat diagram.
 b) What are the features of a good compiler?
 c) Define non-deterministic finite automata. How does it differ from deterministic finite automata. (7,7,6)
6. a) What are the advantages of working with tools while developing a compiler module?
 b) What is code optimization? What are its advantages? (10,10)

Section-D

7. a) What is an Operating System? Mention at least six heads under which, the various functions of an operating system can be classified, and explain their role.
 b) Give examples of various types of operating systems and explain briefly. (15,5)
8. Write a detailed note on the following:
 a) Booting techniques
 b) Mobile operating systems
 c) Plug and Play systems. (7,7,6)

Section-E

9.
 - i. What is single pass assembly?
 - ii. What is the role of symbol tables in the design of an assembler?
 - iii. List data structures used in phase I & II of a compiler.
 - iv. Explain recursive macro expansion.
 - v. Define bootstrap loader.
 - vi. Write the advantage and disadvantage of multiprogramming operating system.
 - vii. What are the advantages of dynamic linking over other linking schemes?
 - viii. Explain briefly what is system programming.
 - ix. What are the three major areas in which the operating system divides its services?
 - x. Explain YACC. (10x2)