

**Department of Computer Science and Engineering
MEA Engineering College, Perinthalmanna**

CS303- System Software Question Bank

MODULE I

1. Define System software. Differentiate between system software and application software.
2. Describe SIC/XE machine architecture with all options.
3. Explain the data format, instruction format and addressing modes of SIC machine architecture.
4. Explain the data format, instruction format and addressing modes of SIC/XE machine architecture.

Refer both SIC & SIC/XE programming examples.

MODULE II

1. What is PC relative addressing?
2. Explain assembler directives with example.
3. Explain the different records used in object programs.
4. Differentiate between RESW and RESB.
5. What are the fundamental functions that any assembler must perform?
6. What is the need for SYMTAB in assembler?
7. What is the need for OPTAB in assembler?
8. What is the use of LOCCTR in assembler?
9. Explain different records used in object program.
10. What are the different types of jump statements in MASM?
11. What are the various data structures used in pass 1 of assembler? Explain.
12. What is forward reference? How is it handled in a one pass assembler?
13. Define modification record and give its format.
14. How the register to register instructions are translated in assembler?
15. Explain the use of following assembler directives.
a) BYTE b) EQU c) WORD d) ORG
16. What are the various data structures needed in pass 1 of the two pass assembler? Explain.

17. Explain program relocation and modification record with example.
18. Explain the various data structures used in the pass 1 and pass 2 algorithms of a two pass assembler.
19. Give the algorithms for pass1 and pass 2 of the two pass assembler.

MODULE III

1. What is control section? How does it differ from program blocks?
2. What is mean by literals?explain.
3. What is the difference between the assembler directive EXTREF and EXTDEF.
4. Explain the object records specific to control sections.
5. What are the machine independent features of SIC/XE assembler?
6. Illustrate with example how to handle programs that consist of multiple control sections.
7. Illustrate the MASM assembler.
8. Discuss need of memory relocation in assemblers. Sketch the structure of modification record used in assembler.
9. Explain program block with an example,a machine independent assembler feature.
10. Explain multi-pass assembler with example.

TRACE KTU

MODULE IV

1. What is a linkage editor? How does it differ from linking loader?
2. Explain linkage editor.
3. Explain dynamic linking.
4. What is program relocation? How is relocation performed by linker? Explain with example.
5. How are external references handled by automatic library search process in loaders?
6. What are relocation bits? How are they used?
7. What is the use of modification record?
8. Give the functions of the linking loader.
9. Write the advantage of dynamic linking.
10. What are the machine dependent loader features?Explain.
11. Write the algorithm for pass 2 of linking loader
12. Write the algorithm for pass 1 of linking loader
13. Explain with example how relocation bits are represented in Text record.
14. Explain with example machine dependent loader features.
15. Write an algorithm for absolute loader.

16. What are bootstrap loaders?

MODULE V

1. Define macro time variable?
2. Write notes on positional parameters in macroprocessors?
3. What are keyword parameters? How to invoke the macro which has keyword parameters?
4. What is macro definition and expansion?
5. Differentiate between macro and subroutine. [2,3]
6. Explain concatenation of macro-parameters.
7. Explain generation of unique labels.
8. Define macro. Discuss the various data structures used in the implementation of a one pass macro processor..
9. List the different tables used for macro processor. Explain their functions.
10. Explain the general purpose macro processor design option.
11. What are macro calls within a macro? (recursive macro)
12. Briefly explain the machine independent features of macro processor.
13. Explain how recursive macro expansion can be included in macroprocessor design?
14. Give the algorithm for a macro processor explaining the various data structures used.
15. For the following macro definition, expand the macro call statements called in sequence:

a. RDBUFF F1,BUFA,RLEN,04,1024

b. RDBUFF F2,BUFB,RLNG, ,

RDBUFF MACRO &INDEV, &BUFADR, &RECLTH, &EOR, &MAXLTH

IF (&EOR NE ' ')

&EORCR SET 1

ENDIF

CLEAR X

CLEAR A

IF (&EORCR EQ 1)

LDCH =X'&EOR'

RMO A,S

ENDIF

IF (&MAXLTH EQ ' ')

+LDT #&MAXLTH

ENDIF

\$LOOP TD =X'&INDEV'

JEQ \$LOOP

RD =X'&INDEV'

STCH &BUFADR,X

TIXR T

JLT \$LOOP

STX &RECLTH

MEND

16. Explain structure of text editor, with neat diagram
17. Give an overview of editing process
18. Explain functions and capabilities of interactive debugging systems
19. Explain different debugging methods

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