

Sri Sai Ram Engineering College
Department of information technology

IVth IT – System Software

2 mark questions

UNIT – 1

1. Define system software.

System software can be defined as a collection of programs that support the operation of a computer. It is a tool that aids to run application software on the computer.

2. Give some examples for system software.

Few Examples of system software are

- Operating system
- Compiler
- Assembler
- Loader
- Linker
- Text editor
- Debugger

3. State the differences between system software and application software.

An application software focuses on using a computer as a tool to solve any problem. So they are not concerned about the architecture of the machine on which they execute.

System programs are written to support the operation and use of the computer itself and so they are usually related to the architecture of the machine on which they are to run.

4. What is SIC?

SIC is simplifies instructional computer. It is a hypothetical machine designed to include minimum hardware features needed to stuy system programs.

5. Name the registers available in SIC architecture.

The following registers are present in the SIC architecture.

A	accumulator
X	Index Register
L	Linkage Editor
PC	Program Counter
SW	Status Word

6. Define condition code.

The instruction COMP compares two values and sets the condition code to reflect the result of comparison.

7. Name the addressing modes available in SIC/XE.

The SIC/XE supports the following addressing modes.

- Relative addressing
- Immediate addressing
- Indirect addressing
- Direct Addressing
- Indexed Addressing

8. Define effective address.

Effective address is the actual memory location from where the operand is retrieved for an instruction. It is also called as target address.

9. What is SVC?

The SIC/XE allows a call to the operating system through a special instruction, supervisor call instruction, also called as SVC.

10. What is the use of TIX?

The TIX instruction will increment the content of the X register by 1 and compares it with the value specified in the instruction.

Eg. TIX ELEVEN

Adds 1 to the index register and compare the result to 11.

11. What is the use of TD?

When TD is executed, the status of the device specified is tested and condition code is set to indicate the result. If the device is ready the condition code is set to “less than”, if not ready, the condition code is set to” equal”.

UNIT – II

1. Define an assembler.

Assembler is a system software that accepts an assembly language program as input and gives the equivalent machine code as output.

Eg MASM

2. Justify the need for two passes in an assembler.

Forward references in programs cannot be resolved in a single pass. So we need more than one pass through the source code.

3. What is the use of OPTAB?

OPTAB is op code table. It contains the mnemonic op code and its equivalent machine instructions. It is normally used as a lookup table by the assembler. It is a hash organized static table.

4. What is the use of SYMTAB?

SYMTAB is the symbol table. It contains all the labels defined in the program with their corresponding values. It is hash organized to be efficient for insertion and deletion.

5. What is the use of LOCCTR?

LOCCTR is a variable that contains the address of the current instruction that the assembler is processing. It is used to assign values to the labels during pass 1.

6. Define forward reference.

Forward reference is defined as referring a label before it defined.

Eg :2000 JMP loop

Loop hlt

7. What is TII?

TII is table of incomplete instructions. It is used to store the instructions that could be assembled during pass1 because of forward references

8. Define Literal.

Literal is a constant that is written as a part of the instruction. It avoids storing a constant in the memory and using a label for it in the instruction.

9. What is Literal Pool ?

The Storage area where all the literals in the program are collected and stored is called the literal pool. Normally literal pools are located at the end of the program after the END statement.

10. What is the use of LTORG Stmt?

The LTORG statement is used to create a literal pool. When this statement is encountered the assembler creates a literal pool and places all the literals that are used in the program so far. These literals are obviously not repeated after the end statement.

11. Explain symbol define statement.

EQU and ORG are the symbol defining statement.

EQU assigns value to a symbol. ORG is used to reset the LOCCTR. Its use is significant when we want to allocate a desired memory area for data items.

12. What is the need for modification record?

Modification record contains instruction to the loader. Modification record is inserted for components that are to be relocated during program loading.

13. What is relocation?

Relocation is the process of changing the address of the program to suit the availability of the memory during runtime. The process also involves finding and placing the correct address of the relative terms in the program.

14. What is indirect addressing?

Indirect addressing is a mode where the address in the instruction gives the location of the operand to be used in the instruction.

15. Distinguish immediate operand and literals.

Immediate operands are assembled as part of the machine instructions
Literals are stored elsewhere and their address is specified in the instruction.

16. How are duplicate literals eliminated?

When a literal is found it is checked with the names present in the literal table. If they match, the new literal is not updated else it is inserted in the table.

17. What is the use of LITTAB?

All the literals used in the program is inserted in a table called as the literal table. It also helps in eliminating duplicate literals.

18. State the limitations in use of EQU and ORG.

The values used to define symbols in EQU and ORG statements cannot have labels or symbols that have not been defined. i.e forward reference is not allowed in EQU and ORG.

19. What is the use of far ptr in MASM?

FAR PTR is used to indicate that the JMP statement has control transfer out of the current segment. The JMP is said to be a far jump.

20. Define assembler directives.

Assembler directives are instructions that are not translated but executed by an assembler. Eg RESW, REWB, EQU, ORG