

## Exp 2 (SPCC)

① Define the basic function of assembler

→ The compiler generates assembly line code and assemble ~~com~~ it to machine code. It takes the basic commands and operation from assembly codes and counts them ~~to~~ into binary code that can be recognized by a specific type of processor.

Some of the basic function are as follows:

- ① convert numeric operation codes to machine language equipments.
- ② convert symbolic ~~operation~~ operands to machine address.
- ③ Build machine instruction.
- ④ convert data constant to internal representation.
- ⑤ Write the object program and assembly listing ~~not~~ files.

2) What is the need of Symbol Table in assembler?

- 1) Symbol Table stores the labels / symbols of assembly code and also the location counter value.
- 2) The 2 pass assembler has to store the LC value in pass 1.
- 3) In 2<sup>nd</sup> pass the LC value of the tables are used to calculate the address of label.
- 4) Symbol table also has 2 additional columns.
- (i) length
  - (ii) Relocational absolute.

3) What is the need ~~need~~ of MOT in assembler.

soln → 1) MOT full form mnemonic opcode table

- (i) It is a fixed length table.
- (ii) It stores the m/c instructions, Binary opcode, length, Instruction format.
- (iv) for example.

P.T.O

m/c	instruction	Binary operand	length	format
	L	6A	4	001
	A	5A	4	001
	ST	7A	4	001

It is mostly used to update location counter

Q4. What is meant by one pass assembler?

Ans: ① A assembler which can generate machine code in only 1 pass is called one pass assembler.

② When it sees a undefined label it just put in symbol table with LC in blank.

③ During passing if not encounter the label definition + update it in symbol hence making it defined.