Chapter 2. Assemblers

Questions

1. Discuss two variants of intermediate code in assemblers.
2. Explain assembler directives START, END, ORIGIN, EQU, and LTORG with example for each.
3. Discuss the design of single pass assembler of Intel 8088 processor
4. Explain Pass-I of Two-Pass assembler along with data structure used.
5. Explain different types of assembly language statement.
6. List and explain advanced assembler directives with examples.
7. Write & explain algorithms used for two pass assembler in detail.
8. Discuss the problem of single pass assembly for Intel 8088 processor. How are they fixed up?
9. Explain symbol table, FRT and CRT of Single pass assembler in detail.
10. How the problem related to segment register table is resolved in Intel 8088?
11. Discuss the pass structure of assemblers. How is the problem of forward reference resolved in single pass & two pass translations?
12. Discuss pass-I of Two pass assembler. Write an assembly language program & display the content of different data structure after pass-I.
13. Discuss the problems of single pass assembly for Intel 8088. What provisions are made to handle these problems?
14. Discuss different intermediate code forms. Compare them based on memory requirement.
15. Explain the design of Single pass assembler of Intel 8088 with details of different tables generated.
16. List & illustrate phases of assembler.
17. What tables are generated after Pass-I of two pass assembler?
18. What data structure is used top design single pass assembler?
19. Comment on the inputs & outputs of pass-II of two pass assembler.
20. Generate intermediate code forms for pass-I of two pass assembler.
21. Explain the tables generated by two pass assembler.
22. Explain different phases of a two pass assembler.

23. Explain the analysis of an assembler.
24. Explain assembler? Why assembler required two passes? Is it advantages or disadvantages over one parse assembler?
25. Explain, with database of each passes of 2-pass assembler.
26. Differentiate assembler, compiler and interpreter.
27. State the reasons for the assembler to be multipass program.
28. Explain forward reference problem in assembler.
29. Given the following source program

```
        START   100
A       DS      3
L1      MOVER   AREG, B
        ADD     AREG, C
        MOVEM   AREG, D
D       EQU     A+1
L2      PRINT   D
        ORIGIN  A-1
C       DC      '5'
        ORIGIN  L2+1
        STOP
B       DC      '19'
        END     L1
```

a. Show the content of symbol table at the end of pass-I.
b. Explain the significance of EQU & ORIGIN statements in program. Explain how they are processed by assembler.
c. Show the intermediate code generated for the program (Variant-I).
d. Show the intermediate code generated for the program (Variant-II).
e. Show the target program generated for the program.