

Total No. of printed pages = 4

Co-402/SP/4th Sem/Comp/2017/M

SYSTEM PROGRAMMING

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Write the basic features of assembly language. 3
- (b) What are the various types of assembly language? Give an example of each. 3
- (c) Explain addressing mode in brief. 8
2. (a) Define recursive macros. Give an example. 2
- (b) Distinguish between subroutine call and macro call. 4

[Turn over

- (c) Define macro with example. 3
- (d) Explain the concept of conditional assembly in brief. 5
3. (a) What are the functions of analysis and synthesis phase of an assembler ? 5
- (b) Write the advantages of one pass assembler. 2
- (c) Explain the design of a two pass assembler in brief. 5
- (d) What are the criteria for selection of an appropriate intermediate code form ? 2
4. (a) Explain the concept of program relocation. 5
- (b) Write the meaning of following assembler direction : $2 \times 3 = 6$
- (i) Origin
- (ii) EQU
- (iii) LTORG

(c) Write the data structure used by pass I of the assembler. Also mention the field name.

3

5. (a) Define loader. Write the functions of loader.

5

(b) Explain absolute loader in brief.

4

(c) Differentiate between static linking and dynamic linking.

3

(d) Write the tables that are associated with direct linking scheme. What are the purposes of each table ?

2

6. (a) What is bootstrapping ?

1

(b) Write the differences between phases and passes.

2

(c) Explain the code optimization in brief.

5

(d) Write about lexical analysis and syntax analysis of compiler.

3+3=6

7. Write short notes on any four : $3\frac{1}{2} \times 4 = 14$

- (i) Linkage editor
- (ii) Stack
- (iii) Procedure
- (iv) Intermediate code form
- (v) Instruction set
- (vi) Code generation.