TCS–501

B. TECH. (CSE) (FIFTH SEMESTER)
MID SEMESTER EXAMINATION, 2022

SYSTEM SOFTWARE

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Define system software and its types with example. "System software is differ from application software." Justify your answer.

10 Marks (CO1)

OR

(b) How legal instrument govern the usage and redistribution of software ? Identify their types that support your answer.

10 Marks (CO1)

P. T. O.

2. (a) Differentiate system control program and system support program. What are the various methods for system support program ?   10 Marks (CO1)

OR

(b) Write the arithmetic instruction for SIC that produces (ALPHA + INCR–1) in BETA and the value (GAMMA + INCR 1) in DELTA.   10 Marks (CO1)

3. (a) Discuss the SIC Registers and status word in detail.   10 Marks (CO1)

OR

(b) Consider the following with example :

```
PROG    START        1000
1000        LDX(14)      ZERO
1003        LDCH(30)     STR,X
1010 STR1   Byte         C'TEST'
1014 ZERO   Word         0
```

Design the SIC instruction format for LDX(14) and LDCH(30). Write the final hexadecimal address for LDX(14) and LDCH(30) format.   10 Marks (CO1)

4. (a) Discuss the various instruction sets used in SIC. Explain with example, where the linkage register value can be used as program counter value. Write all the instructions with proper explanation.

10 Marks (CO1, CO2)

OR

(b) What are the various assembler directives ? How the translation of source program into object code ? How are these functions related to various passes ?

10 Marks (CO1, CO2)

5. (a) Discuss algorithm and data structures of SIC assembler in detail with example.

10 Marks (CO2)

OR

(b) What is program relocation ? How can we solve such problem ?   10 Marks (CO2)