Total number of printed pages:2 **D/3rd/DCSE302**

2021

SYSTEM PROGRAMMING

Full Marks: 100

Time: Three hours

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

*Answer **any five** questions.*

1. a) Define System and Application Software. 5
   b) List various types of System Software. 5
   c) Define Assembler. 5
   d) Define Linker. 5

2. a) Explain with diagrammatic illustration the Von Neumann architecture. 10
   b) Giving a neat state diagram, explain various states of Instruction Cycle. 10

3. For a given expression X = (A/B)+(C*D) write
   a) Three address instructions 5
   b) Two address instructions 5
   c) One address instructions 5
   d) Zero address instructions 5

4. a) Discuss different types of programming languages with their advantages and disadvantages. 10

b) Write an instruction format of an assembly language. 4

c) Discuss why do we need an assembler. 6

5. a) Discuss the working principle of a two pass assembler and various steps of translation. 6

b) Write an assembly program for expression Z=A*B/C+D 4

c) Write variant I intermediate representation of obtained program of Question 5b. 5

d Write machine code of the obtained variant I in Question 5.c. 5

6. Write short notes on any two of the following 5x4=20

a) Various phases of a Compiler

b) Operating System and its types

c) Device drivers

d) Error Reporting

7. a) State and explain Translation Hierarchy. What is Loading? What are the different types of loaders? 4+3+5=12

b) Write a shell program to add two numbers present in memory. 8