

Total No. of printed pages = 3

19/3rd Sem/DCSE302

2021

### SYSTEM PROGRAMMING

Full Marks – 100

Time – Three hours

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

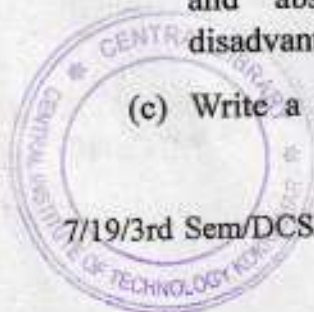
Answer any *five* questions.

1. (a) What is system software ? Mention the tasks performed by a system program. 2+2=4
- (b) What are the limitations of an assembly language ? 2
- (c) What is linking ? 2
- (d) Write the difference between :
  - (i) macro and procedure.
  - (ii) compiler and interpreter. 3+3=6
- (d) Explain leftmost and rightmost derivation of a string with suitable examples. 6
2. (a) What is macro ? Explain macro expansion with assembly code. 2+8=10

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- (b) Write a short note on nested macro. 4
- (c) What is a recursive macro. Give an example. 2+4=6
3. (a) List out the phases of a compiler with the help of a neat diagram. Briefly explain them. 14
- (b) Define token and lexeme. Give examples. 4
- (c) Count the number of tokens : 2
- ```
int max(int i);
```
4. (a) Write the design specifications of an assembler. Explain the tasks performed by the passes of a two pass assembler. 14
- (b) Explain the imperative, declarative and assembler directive statements with suitable examples. 6
5. (a) What is a loader ? What are the functions of a loader ? 2+3=5
- (b) Discuss the function of compile-and-Go and absolute loaders. What are their disadvantages ? 8+4=12
- (c) Write a short note on bootstrap loader. 3



6. Write short notes on the following :  $5 \times 4 = 20$

- (a) Macro definition and parameters
- (b) Symbol table
- (c) Code optimization in compiler design
- (d) Stacks.

