

B.Tech. (Information Technology) Third Semester (C.B.C.S.)  
**System Programming**

P. Pages : 2

Time : Three Hours



PSM/KW/23/2585

Max. Marks : 70

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Due credit will be given to neatness and adequate dimensions.
  8. Assume suitable data whenever necessary.
  9. Illustrate your answers whenever necessary with the help of neat sketches.

1. ~~a)~~ Explain evolution of the component of a programming system. 5
- ~~b)~~ Draw and explain in detail general machine structure. 9

OR

2. a) Explain in detail Language Processing Activities. 5
- b) What is the purpose of system software. 4
- c) Explain program execution. 5
3. a) Explain in detail algorithm for Pass I of an assembler design. Which pseudo-ops are not processed in Pass I of assembler? Why? 9
- b) Why does assembler require more than one pass over input program? Explain your answer with suitable example? 5

OR

4. a) What is the difference between. 5
- XYZ DC F'5'
- XYZ EQU 5
- What is the significance of LTORG pseudo-op?
- b) What is the difference in functioning of the BALR and USING instructions? What happens to each at assembly time and execution time? 5
- c) Define the assembler. And list the types of assemblers. 4
5. a) What are four basic tasks that performed by the macro processor? 5
- b) Explain MDT and MNT with format. 5
- c) Explain macro call within macro with suitable example. 4

OR

6. Explain in detail:
- a) Implementation of 1-Pass Macro Processor. 7
  - b) Implementation of 2-Pass Macro Processor. 7
7. a) Describe the function of each of the following cards. 7  
RLD, ESD, TXT and END cards.
- b) Enlist different types of loader schemes and explain any two with suitable diagram. 7

OR

8. a) What is the purpose of the ID number on the ESD cards? 7  
Why it is not needed for locally defined symbols?
- b) Write the concept of Binder, Dynamic loading and Dynamic linking. 7
9. a) Explain various data structure used in Compilation process. 5
- b) What do you mean by Memory allocation in Compilation? 5
- c) What is cross compiler? Where it is used? 4

OR

10. Explain in detail. 14
- a) Java Virtual Machine.
  - b) Debugger & its Benefits.
  - c) Code Optimization.

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