



UG – 421

24  
VI Semester B.C.A. Examination, September/October 2022  
(CBCS) (F + R) (2016 – 17 and Onwards)  
COMPUTER SCIENCE  
BCA – 602 : System Programming

Time : 3 Hours

Max. Marks : 100

**Instruction :** Answer **all** the Sections.

SECTION – A

I. Answer **any ten** questions, **each** carries **two** marks. (2×10=20)

- 1) Define system software and application software.
- 2) List the components of system software.
- 3) What is program counter ?
- 4) Write the syntax of USING and DROP.
- 5) What is sorting ? Give example.
- 6) Write format of MOT table.
- 7) Give two difference between macros and subroutine.
- 8) Define macros and give its syntax.
- 9) What are the functions of loader ?
- 10) What is dynamic loading ?
- 11) What is a token ? Give example.
- 12) Define local and global optimization.

SECTION – B

II. Answer **any five** questions, **each** carries **five** marks. (5×5=25)

- 13) Explain the general machine structure of IBM 360 machine with a neat diagram.
- 14) Explain overview flowchart for pass1 of an assembler.
- 15) Explain macro instruction with arguments with an example.
- 16) Explain compile and go loader with a diagram.

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- 17) Explain machine dependent optimization of a compiler.
- 18) Explain micro flowchart for ADD instruction.
- 19) Explain four types of cards used in direct linking loader.
- 20) Sort the following elements using address calculation sort.  
19, 13, 11, 5, 26, 1, 16, 9, 27, 2.

## SECTION – C

III. Answer **any three** questions, **each** carries **fifteen** marks. (3×15=45)

- 21) a) Explain different instruction formats of IBM 360/370 machine. 8  
b) Explain any five pseudo-op with an example. 7
- 22) a) Explain in detail pass 2 algorithm of an assembler. 8  
b) Explain binary search with an example. 7
- 23) a) Explain implementation of a macro processor. 8  
b) Explain the database formats of MDT, MNT and ALA of a macro processor. 7
- 24) a) Explain the design of an absolute loader with a neat diagram. 8  
b) Give the specification of databases used in pass 1 and pass 2 of direct linking loader with a neat diagram. 7
- 25) a) Explain the structure of a compiler with a neat diagram. 10  
b) Explain syntax phase of a compiler. 5

## SECTION – D

IV. Answer **any one** question, **each** carries **ten** marks. (1×10=10)

- 26) a) Give the purpose of pass 1 and pass 2 of an assembler. 5  
b) Draw the block diagram of general loading scheme and explain. 5
  - 27) a) Explain macro definition, macro call and macro expansion with example. 5  
b) Explain open subroutine and closed subroutine with an example. 5
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