



**CB – 481**

**VI Semester B.C.A. Examination, August/September 2023  
(CBCS) (F + R) (2016 – 17 and Onwards)  
COMPUTER SCIENCE  
BCA – 602 : System Programming**

Time : 3 Hours

Max. Marks : 100

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

**SECTION – A**

Answer **any 10** questions. **Each** question carries **two** marks. **(10×2=20)**

1. What is the difference between compiler and interpreter ?
2. What are the functions of a loader ?
3. List any two advantages of assembly language.
4. What is PSW ?
5. Mention the different types of sorting techniques.
6. What is a macro ? Write down its syntax.
7. What is a symbol table ? Give its format.
8. Define AIF and AGO.
9. Explain EXTRN pseudo-op.
10. Define relocation factor.
11. Mention any 4 components of SP.
12. Mention different phases of compiler.

**SECTION – B**

Answer **any five** questions. **Each** question carries **five** marks. **(5×5=25)**

13. Explain the general machine structure with a neat diagram.
14. Explain bucket sort with an example.
15. Explain pass 2 of assembler with a neat flowchart.

**P.T.O.**



16. Explain macro definition with arguments with an example.
17. Explain general loader with a neat diagram.
18. Explain absolute loader with a neat diagram.
19. Explain the databases used in lexical analysis phase of a compiler.
20. Explain intermediate phase with an example.

### SECTION – C

Answer **any three** questions. **Each** question carries **fifteen** marks.

**(3×15=45)**

21. a) Draw the detailed PASS-1 flowchart of an assembler. 7  
b) Explain various types of instruction formats used in IBM 360. 8
22. a) Perform shell sort for the following numbers : 10  
45, 23, 53, 43, 18, 24, 8, 95, 101  
b) Mention the databases of pass 1 and pass 2 of an assembler. 5
23. a) Explain macro instructions defining macros with an example. 7  
b) Explain conditional macro expansion. 8
24. a) Explain the overlay structure for linking. 7  
b) Explain direct linking loaders. 8
25. a) Explain the structure of a compiler with a neat diagram. 8  
b) Explain the semantic phase of compiler. 7

### SECTION – D

Answer **any one** question. Question carries **ten** marks.

**(1×10=10)**

26. a) Explain any five pseudo ops in assembly language program. 5  
b) Explain long way no looping. 5
27. Write short notes on :  
a) Pass 2 of a macroprocessor. 5  
b) Dynamic loading. 5