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SG – 632

VI Semester B.C.A. Examination, September/October 2021
(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

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

- 1) Define compile time and load time.
- 2) What are the functions of a loader ?
- 3) Explain BCT and LTOrg pseudo-ops.
- 4) What is symbol table ?
- 5) Mention any two disadvantages of radix sort.
- 6) Write the four basic task that can be performed by macro-instruction processor.
- 7) What is ALA ?
- 8) What are overlays ?
- 9) Mention two types of cards used in direct linking loader.
- 10) Define relocation factor.
- 11) List three basic tasks of lexical phase.
- 12) What are tokens ? Give an example.

SECTION – B

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

- 13) Explain any five registers of IBM 360/370 machine.
- 14) Explain with a flowchart the pass 1 overview of an assembler.
- 15) Explain shell sort with an example.
- 16) Explain conditional macro expansion.
- 17) Explain compile-and-go loader with a diagram.
- 18) Explain relocatable, non-relocatable and self relocatable programs.
- 19) Explain the general model of a compiler.
- 20) Write a note on machine independent optimization.

P.T.O.



SECTION – C

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

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| 21) a) Explain the general machine structure IBM 360/370 with a neat diagram. | 8 |
| b) Draw the micro flow chart for ADD instruction. | 7 |
| 22) a) Explain database used in pass 1 and pass 2 of assembler. | 8 |
| b) Illustrate binary search with an example. | 7 |
| 23) a) Explain the design of absolute loader with an example. | 8 |
| b) Explain relocating loaders. | 7 |
| 24) a) Explain the different phases of a compiler. | 10 |
| b) Write a note on macro instruction arguments. | 5 |
| 25) Write short notes on : | |
| a) Dynamic loading. | 5 |
| b) Assembler directives. | 5 |
| c) EXTRN and ENTRY statements. | 5 |

SECTION – D

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

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| 26) a) Explain any 5 pseudo ops used in assembly language program. | 5 |
| b) Explain macro instructions defining macros with an example. Explain time sharing OS. | 5 |
| 27) Define direct linking loader. What are the four different types of cards produced by the direct linking loader. Discuss. | 10 |
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