VI Semester B.C.A. Examination, May/June 2018
(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) What is system software ?
2) What is location counter ? What is its purpose ?
3) List any two advantages of assembly language.
4) What is Declaration Statement ? Give example.
5) Mention any two disadvantages of Radix Sort.
6) What is Macro call ?
7) Define Macro definition table.
8) Write the four basic task that can be performed by macro-instruction processor.
9) What are the functions of loader ?
10) Define Relocation factor.
11) What is intermediate form ?
12) What is a token ? Give example.

SECTION – B

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

13) Explain the general machine structures with neat diagram.
14) What is sorting ? Explain briefly about Bubble sort.
15) Explain databases used in Pass 1 and Pass 2 assemblers.
16) Explain the features of Macro facility in detail.
17) Explain macro instructions defining macros.
18) Explain compile-and-go loader with a neat diagram.
19) Define binder. What are the classes of binders ? Explain.
20) What are the functions of analysis and synthesis phases of compiler ?

P.T.O.

SECTION – C

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

21) a) Explain various instruction formats used in IBM 360.   8

    b) Explain the use of literals in assembly language programs using example.   7

22) a) Draw the detailed pass 2 flowchart of an assembler.   8

    b) What is an assembler directive ? Explain any five assembler directives
    with an example.   7

23) a) Give the database specifications for pass 1 and pass 2 of macro processor.   8

    b) Explain the four basic tasks of macroprocessor.   7

24) a) Explain design of absolute loader with a neat diagram.   8

    b) Explain the overlay structures for linking.   7

25) a) Explain structure of compiler with a diagram.   8

    b) Explain identifier table for the phases of compiler.   7

SECTION – D

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

26) a) Differentiate between Pseudo-op and machine-op with example.   5

    b) Draw the micro-flow chart for ADD instruction.   5

27) a) Explain Relocatable, non-relocatable and self relocatable programs.   5

    b) Explain the use of EXTERN and ENTRY statements.   5

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Instruction : *Answer all Sections.*

SECTION – A

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

1) Define compiler, assembler.

2) What are the functions of a Loader ?

3) Explain PSW.

4) What is Instruction Interpreter ?

5) Write the format of POT.

6) What is a symbol table ? Give its format.

7) Differentiate between a macro and subroutine.

8) What is an argument list array ?

9) What are overlays ?

10) What is dynamic loading ?

11) What are the three classes of uniform symbols ?

12) Define local and global optimization.

SECTION – B

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

13) Explain open subroutine and closed subroutine with an example.

14) Explain different instruction formats of IBM 360/370 machine.

15) Explain address modification using instruction as data.

16) Explain shell sort with an example.

17) Explain pass-2 overview of an assembler with flow-chart.

18) Explain macro definitions with an example.

19) Describe four types of cards used in direct linking loader.

20) Explain intermediate phase with an example.

SECTION – C

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

21) a) Explain the general machine structure of IBM 360/370 with a neat diagram. 7

    b) Draw the detailed PASS-1 flow-chart of an assembler. 8

22) a) Explain databases used in PASS-1 and PASS-2 of assembler. 8

    b) Explain different data formats used in IBM 360/370 with an example. 7

23) a) Explain simple one pass macro processor. 10

    b) Explain conditional macro expansion. 5

24) a) Explain design of absolute loader with a neat diagram. 8

    b) Explain direct-linking loaders. 7

25) a) Explain the passes of compiler with neat diagram. 10

    b) Discuss briefly about lexical phase of compiler. 5

SECTION – D

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

26) With a neat diagram explain the structure of compiler. 10

27) Write short note on :

    a) Relocating loaders. 5

    b) Draw the micro flow-chart of ADD instruction. 5