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. (10x2=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. (5x5=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?
SECTION – C

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

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. \(1 \times 10 = 10\)

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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(2016-17 and Onwards) (CBCS)
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 : 

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. 

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. \((3 \times 15 = 45)\)

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. \((1 \times 10 = 10)\)

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. \(5\)