VI Semester B.C.A. Examination, May 2016
(Y2K8 Scheme) (F + R)
Computer Science
BCA – 602 – SYSTEM PROGRAMMING
(100 marks – 2013-14 and Onwards
90 marks – Prior to 2013-14

Time : 3 Hours
Max. Marks : 90/100

Instructions: 1) Answer all questions.
2) Section D is applicable for students from 2013-14 & Onwards.

SECTION – A

I. Answer any 10 questions. Each question carries two marks. (10x2=20)

1) List components of a system software.
2) Differentiate between processor and I/O channel.
3) Explain PSW.
4) Explain the advantages of using a base register.
5) What is LTORG?
6) List all the variable tables and fixed tables used by an assembler.
7) What is ALA? Explain its format.
8) Define AIF and AGO.
9) List the functions of a loader.
10) Mention the four types of cards used in a direct linking loader.
11) What is intermediate form?
12) List the three tasks of lexical phase.

P.T.O.
II. Answer any five questions. Each question carries five marks.  

13) Explain different data formats used in IBM 360 with an example.  
14) Explain Long-way-no-looping.  
15) Draw an overview flowchart for Pass I of an assembler.  
16) Explain radix sort with a suitable example.  
17) Explain macro definition with arguments with an example.  
18) Explain compile-and-go loader with a diagram.  
19) Explain the databases used in lexical analysis phase of a compiler.  
20) Explain machine dependent optimisation.  

SECTION – C  

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

21) a) Draw the general machine structure of IBM 360 and explain.  
   b) Explain various instruction formats used in IBM 360.  
22) a) Draw the detailed Pass 2 flowchart of an assembler.  
   b) Explain databases used by Pass I and Pass II of an assembler.  
23) a) Explain the terms macro definition, macro call and macro expansion with an example.  
   b) Explain with a flowchart pass 2 of a macroprocessor.
24) a) Explain the design of an absolute loader.
    b) Explain the databases used by Pass I and Pass II of a direct linking loader.

25) a) Explain structure of a compiler with a diagram.
    b) Explain syntax phase of a compiler.

**SECTION – D**

Answer **any one** question. Question carries **ten** marks. \((1 \times 10 = 10)\)

26) a) Sort the following numbers using bubble sort technique:
    55, 53, 45, 48, 39.
    b) Explain any 5 pseudo ops. used in an assembly language program.

27) a) Explain dynamic loading.
    b) List the databases used by Pass I and Pass II of a macroprocessor.