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.   (10×2=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.

SECTION – B

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

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.   (3×15=45)

21) a) Draw the general machine structure of IBM 360 and explain.   8

    b) Explain various instruction formats used in IBM 360.   7

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

    b) Explain databases used by Pass I and Pass II of an assembler.   7

23) a) Explain the terms macro definition, macro call and macro expansion
       with an example.   7

    b) Explain with a flowchart pass 2 of a macroprocessor.   8

24) a) Explain the design of an absolute loader. 7

b) Explain the databases used by Pass I and Pass II of a direct linking loader. 8

25) a) Explain structure of a compiler with a diagram. 10

b) Explain syntax phase of a compiler. 5

SECTION – D

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

26) a) Sort the following numbers using bubble sort technique :

55, 53, 45, 48, 39. 5

b) Explain any 5 pseudo ops. used in an assembly language program. 5

27) a) Explain dynamic loading. 5

b) List the databases used by Pass I and Pass II of a macroprocessor. 5