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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.

P.T.O.



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