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VI Semester B.C.A. Examination, May 2017
(Y2K8 Scheme)

COMPUTER SCIENCE

BCA – 602 : System Programming
[100 – Marks – 2013 – 14 & 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** and onwards.

SECTION – A

I. Answer **any 10** questions. **Each** question carries **two** marks. (10×2=20)

- 1) Define an assembler.
- 2) What is intermediate form ?
- 3) What are the components of a programming system ?
- 4) What are overlays ?
- 5) What is meant by dynamic loading ?
- 6) Define open and closed subroutines.
- 7) Define AIF and AGO.
- 8) What is the difference between CR and CLR instruction ?
- 9) Explain PSW.
- 10) Explain EXTRN and ENTRY statements.
- 11) Define fixed table. Give an example.
- 12) What is the use of a macro ?

SECTION – B

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

- 13) Explain the various registers of IBM 360/370 machine.
- 14) Draw the block diagram of general loading scheme and explain.

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- 15) Explain code generation.
- 16) Explain compile and go loader scheme with a neat diagram.
- 17) Explain binary search table processing with example.
- 18) Explain dynamic linking.
- 19) Explain the four basic tasks of macro processor.
- 20) Explain pass 2 overview of an assembler with a flow chart.

SECTION – C

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

- 21) a) What are the data formats supported by IBM 360/370 architecture ? **8**
- b) Draw the micro-flow chart for ADD instruction. **7**
- 22) a) Draw the detailed pass 1 flow chart of an assembler. **7**
- b) What are the steps followed in general design procedure of an assembler ? **8**
- 23) a) Write the design of absolute loader. **8**
- b) Explain relocating loaders. **7**
- 24) a) Explain structure of a compiler with a diagram. **10**
- b) Explain syntax phase of a compiler. **5**
- 25) a) Give the database specifications for pass 1 and pass 2 of macro processor. **8**
- b) Explain how recursive operations are performed using stack in macro calls within macros. **7**

SECTION – D

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

- 26) a) Differentiate between pseudo-op and machine-op with example. **5**
- b) Define macro. State its advantages. **5**
- 27) a) Explain briefly about lexical phase of compiler. **5**
- b) Explain long – way – no – looping. **5**