15162

3 Hours / 100 Marks   Seat No.

Instructions : (1) **All** questions are **compulsory**.
(2) Answer **each** next main question on a **new** page.
(3) Assume suitable data, if **necessary**.
(4) Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.

Marks

1. a) Attempt **any three** :   **12**

   i) Draw and describe "Compile and go" loaders.

   ii) What is system software ? State the goals of system software.

   iii) Describe linear search algorithm with suitable example.

   iv) Differentiate between machine independent and machine dependent optimization.

   b) Attempt **any one** :   **6**

   i) Describe the Evolution of system software and operating system.

   ii) Mention the features of a macro facility.

2. Attempt **any two** :   **16**

   i) Explain pass I of assembler.

   ii) Sort the following numbers using Radix exchange sort. Show all the passes

   102, 501, 704, 222, 112, 555

   710, 113, 200, 211, 222, 111

   iii) Draw and explain the general model of compiler.

3. Attempt **any four** :   **16**

   i) Define and describe assemblers and compilers.

   ii) Describe Binary search algorithm with suitable example.

   iii) Describe the lexical phase of compiler.

   iv) Describe about dynamic binders.

   v) Compare top down parser and bottom up parser.

Marks

4. a) Attempt **any three** :   **12**

    i) Describe the format of database of direct linking loaders.

    ii) Describe the Interpretation phase algorithm of compiler.

    iii) Describe the passes of a compiler.

    iv) Give the advantages and disadvantages of top down parser.

  b) Attempt **any one** :   **6**

    i) Describe the two pass algorithm of macro.

    ii) Describe the role of a lexical and syntax analyzer.

5. Attempt **any two** :   **16**

    i) Draw and describe the design of absolute loaders.

    ii) Describe the optimization phase of a compiler.

    iii) Describe Hashing with suitable example.

6. Attempt **any four** :   **16**

    i) Describe Macro call within macros with suitable example.

    ii) Describe the data structure of assembler.

    iii) Explain about Relocating loaders.

    iv) Describe the syntax phase of compiler.

    v) How subroutine linkages are applied in loaders ?