17517

16172

3 Hours / 100 Marks   Seat No.

Instructions : (1) *All* questions are *compulsory*.
(2) Answer *each* next main question on a *new* page.
(3) *Illustrate your answers with neat sketches* **wherever** *necessary.*
(4) *Figures to the* **right** *indicate* **full** *marks.*
(5) *Assume suitable data, if* **necessary**.
(6) *Mobile Phone, Pager and any other Electronic Communication devices are* **not** *permissible in Examination Hall.*
(7) **Preferably**, *write the answers in* **sequential** *order.*

Marks

1. a) Attempt **any three** :   **(4×3=12)**

   1) State and explain the functions of loader.

   2) What is an assembler ? What are its functions ?

   3) Explain the design steps of assembler.

   4) How will you recognize basic elements in compiler ?

   b) Attempt **any one** :   **(6×1=6)**

   1) What is macro ? Enlist advantages of macro.

   2) Enlist and explain the features of macro processor.

2. Attempt **any two** :   **(8×2=16)**

   1) Explain the term : Look for modularity.

   2) Explain different data structures used by pass-II assembler.

   3) Draw the basic phases of compiler and explain each phase function.

3. Attempt **any four** :   **(4×4=16)**

   1) What are the four components of system software ?

   2) Apply radix sort on following numbers :

      170, 45, 75, 90, 2, 24, 802, 66.

   3) Give the examples of arithmetic and non arithmetic statements which can be use in compiler operation.

   4) Explain absolute loader scheme.

   5) Explain the meaning of top down and bottom up parser.

Marks

4. a) Attempt **any three** : (4×3=12)
   1) What is the algorithm for direct linking loader ?
   2) Explain functions of lexical analyzers.
   3) Explain assembly phase of compiler in detail.
   4) Explain the concept of top down parser.

   b) Attempt **any one** : (6×1=6)
   1) Explain the database used by Pass-1 of two pass macro processor.
   2) Compare advantages and disadvantages at top down and bottom up parser.

5. Attempt **any two** : (8×2=16)
   1) Which disadvantages of compile-and-go loader are removed in general loader scheme ? Explain.
   2) Explain machine independent and machine dependent compiler optimization.
   3) Apply interchange sort on following numbers :
      41, 23, 35, 10, 65, 94, 38, 7.

6. Answer **any four** of the following : (4×4=16)
   1) What are the advantages and disadvantages of combining macro processor with the pass-1 of an assembler ?
   2) Explain binary search with suitable example.
   3) How subroutine linkages are applied in loaders ?
   4) Explain storage allocation concept in compiler.
   5) Explain the terms :
      a) Binder and
      b) Module loader.

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