



17517

21415

3 Hours/100 Marks

Seat No. 

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- Instructions :** (1) **All questions are compulsory.**  
(2) **Illustrate your answers with neat sketches wherever necessary.**  
(3) **Figures to the right indicate full marks.**  
(4) **Assume suitable data, if necessary.**
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**MARKS**

1. a) Attempt **any three** : **(4×3=12)**
- 1) Explain overlay structure used in dynamic loading scheme.
  - 2) List components of system software and explain any two of them.
  - 3) Explain the working of Bucket sort.
  - 4) List and give syntax of database tables used in lexical analysis phase of compiler.
- b) Attempt **any one** : **(6×1=6)**
- 1) Explain evolution of system software.
  - 2) What is Macro Language ? Explain conditional macro with an example.
2. Attempt **any two** : **(8×2=16)**
- 1) Explain different data structures used by Phase – II assembler.
  - 2) Explain Binary Search with suitable example.
  - 3) Explain code optimization phase of compiler.
3. Attempt **any four** : **(4×4=16)**
- 1) Explain operating system as “ Manager’ of system”.
  - 2) Explain general design of the assembler.
  - 3) Explain with flowchart of over view of passes of compiler.
  - 4) Explain databases used in direct linking loader system software.
  - 5) Convert following expression into parse free using top down parsing  
 $c = r * (s - f) + 2 * (s - f - 10)$ .

P.T.O.

**MARKS**

4. a) Attempt **any three** : **(3×4=12)**
- 1) Explain binders in detail.
  - 2) Explain in detail machine dependant optimization.
  - 3) Explain compile time compute optimization with example.
  - 4) Explain the concept of bottom up parser.
- b) Attempt **any one** : **(6×1=6)**
- 1) State and explain four basic task of macro processor.
  - 2) Explain the difference between top down and bottom up parser.
5. Attempt **any two** : **(8×2=16)**
- 1) Explain Dynamic Binders.
  - 2) Explain four purposes of storage assignment phase of compiler.
  - 3) Explain Radix Sort with example.
6. Attempt **any four** : **(4×4=16)**
- 1) State and explain task of macro processor.
  - 2) Explain use of following instructions :
    - 1) USING                      2) START
    - 3) DC                              4) DS
  - 3) State functions of relocating loader.
  - 4) Describe uniform symbol table and explain process of tokenising with example.
  - 5) What is loader ? How it works ? Explain with diagram.
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