17517

11718

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****.*

Marks

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

1) Define the following terms : **4**
   i) Overlays
   ii) Subroutine linkages.
2) What is operating system ? Enlist the features of operating system as a system software. **4**
3) State and explain Binary search method with example. **4**
4) Draw the output of syntax analysis phase for the string 'd = a + b * c' in the form of syntax tree. **4**

b) Attempt **any one** : **(1×6=6)**

1) Describe the foundation of system programming. **6**
2) Draw flowchart of pass-I of two pass macroprocessor. **6**

2. Attempt **any two** : **(2×8=16)**

1) Explain Address calculation sort with suitable example. **8**
2) Explain format of databases in Assembler. **8**
3) Explain with flowchart overview of passes of compiler. **8**

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

1) List and explain four component of system software. **4**
2) Compare shell sort and Radix Exchange sort on the basis of space and time complexity. **4**
3) Explain in detail machine dependent optimization. **4**
4) Explain four function performed by loader. **4**
5) Draw the parse tree for the string 'acddf' using top down parsing approach. **4**

P.T.O.

Marks

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

1) Explain "compile and Go" loader scheme. **4**

2) Explain any four optimization technique uses by compiler. **4**

3) Discuss memory allocation scheme used in compiler. **4**

4) Explain predictive parsing with example. **4**

b) Attempt **any one** : **(1×6=6)**

1) Explain four basic task of macroprocessor. **6**

2) Explain following parsing technique in detail. **6**

i) Top-down parsing

ii) Bottom up parsing.

5. Attempt **any two** : **(2×8=16)**

1) Explain design of direct linking loader. **8**

2) Draw and explain phases of compiler in detail. **8**

3) Explain general design procedure of Assembler. **8**

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

1) Explain implementation of Macro call within Macro. **4**

2) Sort the following element in descending order using Bucket sort. **4**

45, 21, 12, 36, 97

3) Explain in detail absolute loader. **4**

4) List and give syntax of database table use in lexical analysis phase of compiler. **4**

5) Explain the format of databases of loader. **4**
