

17517

21819

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.

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| 1. (A) Attempt any THREE : | 12 |
| (a) Explain absolute loader scheme with example. | |
| (b) Explain foundation of system programming with diagram. | |
| (c) Explain following instructions with example : | |
| (i) DC | |
| (ii) DS | |
| (d) Explain data structures used in lexical analysis phase of compiler. | |
| (B) Attempt any ONE : | 6 |
| (a) Explain general machine structure with diagram. | |
| (b) Explain advance Macro facilities. | |
| 2. Attempt any TWO : | 16 |
| (a) Draw and explain the flow-chart for pass-II assembler. | |
| (b) Sort the following integers in the ascending order using bucket sort : | |
| 321, 213, 123, 145, 123, 213, 123, 917 | |
| (c) State and explain four optimization techniques used by compiler. | |

- 3. Attempt any FOUR :** **16**
- (a) Explain evolution of system programming in brief.
 - (b) Explain role of location counter of pass 1 of an assembler.
 - (c) Explain syntax analysis phase of compiler.
 - (d) Explain compile and GO loader scheme.
 - (e) Explain the concept of bottom up parser with example.
- 4. (A) Attempt any THREE :** **12**
- (a) State advantages and disadvantages of BSS loader.
 - (b) Describe the main function of lexical analysis phase of compiler.
 - (c) Describe the function of interpretation phase of compiler.
 - (d) Differentiate between top down parser and bottom up parser.
- (B) Attempt any ONE :** **6**
- (a) Explain the database used by pass-1 of two pass macroprocessor.
 - (b) Explain prediction, matching and backtracking in brief.
- 5. Attempt any TWO :** **16**
- (a) Explain ESD, TXT, RLD and END cards used in direct linking loader.
 - (b) Draw the block diagram of phases of compiler.
 - (c) Explain different data structure used in Pass-I of an assembler.
- 6. Attempt any FOUR :** **16**
- (a) State and explain four basic task of Macroprocessor.
 - (b) Compare linear search and Binary search.
 - (c) Explain Binders in details.
 - (d) Explain four purposes of storage assignment phase of compiler.
 - (e) Explain general loading scheme with example.
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