

Bachelor of Computer Science and Engineering Supplementary Examination- 2017
(3rd year 1st Semester)

Subject: System Programming

Time: Three hours

Full marks: 100

Answer any 5 questions from the rest

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| 1. | a. | What is the difference between sub-routine and macro? | 3 |
| | b. | What are the characteristics of MASM assembler? | 5 |
| | c. | Describe the advantages and disadvantages of one-pass, two-pass and multi pass assembler. | 6 |
| | d. | What do you mean by conditional macro expansion? Explain with proper example. | 6 |
| 2. | a. | What is the architectural difference between SIC/XE and 8086 machine architecture | 5 |
| | b. | Is relocation bit mandatory to design an assembler? Explain your answer with proper justification. | 5 |
| | c. | Write an assembly language programming to convert hexadecimal number (more than two digit) into its ASCII equivalent. The output will show ASCII value of every digit of the input hexadecimal numbers. | 10 |
| 3. | a. | Describe the component of machine dependent and machine independent assembler. | 8 |
| | b. | How do you use those components to design two-pass assembler? Explain with proper algorithm. | 12 |
| 4. | a. | Describe the different machine dependent and machine independent features of macro processor. | 6 |
| | b. | What is the difference between nested and recursive macro call? | 4 |
| | c. | Describe the algorithm of two-pass macro processor? | 10 |

5. a. Describe the utilities of INT 09h and Keyboard buffer with proper diagram during taking an input from a keyboard. 10
- b. Write an assembly language programming to count the number of occurrences of a given character within a given string. 10
6. a. What is bootstrap loader? How it is different from traditional Loader? 2+3
- b. Describe the algorithms of absolute loader with proper example. 8
- c. "Linking loader" or "loader" which one would you prefer and when? 7