

**M.Tech. IN ADVANCED INFORMATION
TECHNOLOGY - NETWORKING AND
TELECOMMUNICATION (MTECHTC)**

Term-End Examination

June, 2015

00013

MINI-020 : PROGRAMMING METHODOLOGIES

Time : 3 hours

Maximum Marks : 100

- Note :** (i) *Section I is compulsory.*
(ii) *In Section II, solve any five questions.*
(iii) *Assume suitable data wherever required.*
(iv) *Draw suitable sketches wherever required.*
(v) *All programs are to be written in C-language.*

SECTION I

1. (a) **Compulsory question :**

Write a 'C' program to read the content of a file "A.txt". Convert the ASCII content to binary and store it in another file "B.txt". Now spread the content of "B.txt" using the passcode "AH".

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Note : Spreading will involve XORing 1 bit from "B.txt" with all the bits of passcode, "AH" i.e. $1 \wedge 11110000 = 00001111$.

- (b) Write a program in C-language to count the length of a string by applying pointer arithmetic.

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SECTION II

Answer any **five** questions from below :

2. Write a 'C' program to accept two alphabets and pass them to the function via pointers which checks for the types of these alphabets. If both the alphabets are vowels, then the function returns their previous alphabets. If both the alphabets are consonants, then the function should return their successor alphabets. 14

3. Write a 'C' program which accepts a string "milky galaxy is milky milky galaxy" and print the string by replacing the word "milky" with "doodh". 14

4. Write a 'C' program to issue a Rental license based on the following conditions : 14
Sex : Male and Unmarried, minimum Age 20.
Sex : Male and Married, Age no bar.
Sex : Female and Unmarried, minimum Age 25.
Sex : Female and Married, Age no bar.

5. Write a 'C' program which contains students' record using array and display the above record in sorting order applying any sorting methods. 14

6. Write a program to accept the information of a book such as number, author, publisher and price and also display it by sorting them in alphabetical order of authors' name. 14

7. Write a 'C' program using 2 recursive functions to print the first N elements of Fibonacci series and also to find the sum of 1st N numbers. 14
 8. Write a 'C' program that creates a linked list of 10 nodes, a node added at the beginning and delete a node at the middle of the list. 14
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