

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA Integrated - SEMESTER-II • EXAMINATION – SUMMER • 2014****Subject Code: 4420602****Date: 20-06-2014****Subject Name: Advanced C Programming****(Fundamentals of Programming – II)****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Answer the following :
- i. Explain dangling pointer and Memory leak. **03**
 - ii. Differentiate between structure, union and enum. **04**
- (b)** Write down various opening modes of file and their usage. **07**
- Q.2 (a)** Write a user define function to calculate Electricity bill for given number of units. For first 100 units the rate would be Rs 1/unit, for next 100 units Rs. 2/unit and remaining units Rs. 5/unit. Create a structure having data member customer name, address and no of unit .Display electricity bill of five customers. **07**
- (b)** What is a pre processor directive? Explain any five pre processor with its usage. **07**
- OR**
- (b)** What is dynamic memory allocation? Explain malloc, calloc, realloc and free functions. **07**
- Q.3 (a)** Write an algorithm to convert infix expression into postfix expression. **07**
- (b)** Write down various representation of Graph with the help of suitable example. **07**
- OR**
- Q.3 (a)** Differentiate between simple queue and circular queue. Write down the various operations and applications of queue. **07**
- (b)** Construct a Binary Tree of following post order and in order traversal. **07**
 In order : D B E A F C G
 Post Order: D E B F G C A
 Write down the pre order traversal of constructed tree.
- Q.4 (a)** Compare various types of linked lists in detail. **07**
- (b)** Write a program to perform following operations on singly linked list
- i. Add node at end of list **03**
 - ii. Delete node **03**
 - iii. Search node **01**
- OR**
- Q.4 (a)** Differentiate between array and linked list. Write down the various applications of linked list in brief. **07**
- (b)** Write short note on command line arguments and its usage and also write a program to make a DOS command “type” which shows the contents of given file. **07**
- Q.5 (a)** Differentiate between
- i. int *p[3] and int (*p)[3] **02**
 - ii. *p++ and (*p)++ **02**
 - iii. Array name and pointer variable **03**
- (b)** Write a program to print the file contents in reverse order and differentiate between text file and binary file. **07**

OR

Q.5 (a) Write down the output of following code snippet

(i) `void main()
{
 int a[]={1,2,3,4,5};
 int *p=a,*q=a[4];
 printf("%d",q-p);
}`

03

(ii) `#define swap(a,b) t=a;a=b;b=t;
void main()
{
 static int a=10,b=20,t;
 if(a>b)
 swap(a,b);
 printf("%d , %d , %d",a,b,t);
}`

04

(b) Write short note on following:

- i. pointer to function
- ii. #pragma
- iii. Wild pointer

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