

**LA-109**

April-2014

**F.Y. M.Sc. (CA & IT) Sem.-II****(Integrated)****Advance C Programming****Time : 3 Hours]****[Max. Marks : 100**1. Answer the following : (Any 4) **20**

- (1) Explain with example, different ways of assigning values to structure members.
- (2) Explain different categories of functions with appropriate example.
- (3) Why should we close the files explicitly, which we open in a program ?
- (4) What does it mean by dynamic memory allocation ? What are the advantages of dynamic memory allocation ? Explain *calloc* function with its syntax and usage.
- (5) Write a note on *bitfields*.

2. What will be the output of the following: **20**(1) `int function(int x)` **6**

```
    {
        if(x)
            return (function(--x) + x);
        else
            return 0;
    }
main()
{
    int x = 5;
    printf("%d",function(x));
}
```

(2) `int main( )` **6**

```
{
    char *ptr = "Geeta Shah";
    (*ptr)++;
    printf("%s\n", ptr);
    ptr++;
    printf("%s\n", ptr);
    return 0;
}
```

- (3) `main()` **4**
- ```

{
    char *str1 = "Good Morning";
    char str2[15] = "Good Morning";
    printf("%d %d %d", sizeof(str1), sizeof(str2));
}

```
- (4) Given the following declarations : **4**
- ```

Int a = 5, b = 5;
Int *p = &a, *q = &b;

```
- What is the value of each of the following expressions ?
- `(*p)++`
  - `--(*q)`
  - `*p + (*q)--`
  - `++(*q)-*p`
3. (A) Explain the following : **6**
- What is pointer ? How is it initialized ?
  - Explain meaning and purpose of Tag name in structure definition.
- (B) Write only C functions for the following : **14**
- Recursive function to count number of nodes in a linked list.
  - Function which accepts an array of integers and counts and return total number of zeros in the array.
4. Write C programs for the following: (Any 2) **20**
- (A) Create a structure with the fields like – roll no, name and total marks.  
Write an interactive menu driven program to
- Add a record
  - Display record for the selected roll no
  - Display record for the selected name
  - Display record with the highest total marks
- (B) A file contains integers. Read those numbers from the file and copy only positive even numbers to the other file.
- (C) Create a linked list and delete a node for the given key value.
5. (A) Write a short note on the following : (Any 2) **12**
- I/P and O/P functions in file handling
  - Recursion
  - Preprocessor Directives
- (B) Differentiate between the following : (Any 2) **8**
- Actual arguments and Formal Arguments.
  - Structure and Union
  - Array and linked list