

AU-6276

M.Sc. (First Semester) Esamination, 2014

ADVANCED PROGRAMMING In 'C' LANGUAGE

Paper : M.Sc.(CS)-103

Section-A

1.

- (I) Array is homogeneous data type.

C programming language provides a data structure called **the array**, which can store a fixed-size sequential collection of elements of the same type. An array is used to store a collection of data, but it is often more useful to think of an array as a collection of variables of the same type.

Instead of declaring individual variables, such as number0, number1, ..., and number99, you declare one array variable such as numbers and use numbers[0], numbers[1], and ..., numbers[99] to represent individual variables. A specific element in an array is accessed by an index.

example:- `int a[10][10];`

- (II) The C library function **int getc(FILE *stream)** gets the next character (an unsigned char) from the specified stream and advances the position indicator for the stream.

The C library function **int putc(int char, FILE *stream)** writes a character (an unsigned char) specified by the argument **char** to the specified stream and advances the position indicator for the stream.

- (III) `strlen()` function is use to find length of string .
(IV) `Calloc` function is use to request memory space at run time for storing structure, array(derived data type).

`Calloc` allocates multiple block of storage.

`ptr= (case_type*) calloc (n, element_size);`

- (V) An external file containing functions or macro definitions can be included as a part of a program so that we need to rewrite those functions or macro definitions. This is achieved by the Preprocessor directive

```
#include "filename" // search the file first in current directory and then in standard directories.
```

```
#include<filename> // search the file only in standard directories.
```

- (VI) clrscr function clears the screen and move the cursor to upper left hand corner of screen.

This function available in conio.h header file.

- (VII) // is use for one line comment

and /* */ is use for comment one than one line.

- (VIII) The output of 1101|1001 is 1101.

- (IX) Size of double variable is 8 byte.

- (X) post increment operator is ++ , the variable is first the expression is evaluated using the new value of the variable and the then incremented .

example:- x++;

Section-B

- 2 You should explain loops with syntax and example .

- I for loop
- II do.....while loop
- III while loop

- 3 You should write a following library functions and explain .You should also create user define library functions.

1 strlen()

2 strrev()

3strcat()

4 strlwr()

5 strupr()

6 strcpy()

7 strcmp()

4 You should write a program for array of structure and array within structure and explain this program.

(Refer:- page no. 327,329 Book name :- Programming in ANSI C fifth Edition)

5 You should write a program for passing function using pointer and explain in brief.

(Refer:- page no. 373 Book name :- Programming in ANSI C fifth Edition)

6 You should write the following preprocessor and explain in brief.

#define

#undef

#include

#ifdef

#endif

#ifndef

#if

#else

and you should also write program using this preprocessor

(Refer:- page no. 444 Book name :- Programming in ANSI C fifth Edition)

7 You should write program for finding length of string and explain the program.

For Example:-

```
#include<stdio.h>

#include<conio.h>

#include<string.h>

void main()

{

int a,i;

char name[10];

clrscr();

printf("give any name:");

gets(name);

a=strlen(name);

printf("length of string using library function: %d",a);

for(i=1;name[i]!='\0';i++);

printf("length of string without using library function: %d",i);

getch();

}
```

8 You should write a program and explain this program in brief.

```
#include<stdio.h>

#include<conio.h>

void swap(int*,int*);

void main()

{

int x=10,y=20;

clrscr();

swap(&x,&y);

printf("x is %d \n y is %d",x,y);

getch();

}

void swap(int *x,int *y)

{

int temp;

temp=*x;

*x=*y;

*y=temp;

printf("in function\n");

printf("x is %d \n y is %d\n",*x,*y);

}
```