COMPUTER ASSIGNMENT-3

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DEPARTMENT-COMPUTER SCIENCE AND TECHNOLOGY

SECTION-GX

1. What is macro in C? Explain with a complete example.

   A. A macro is a fragment or a block of code that is given a name. A macro is defined in C by using a #define pre-processor directive. Example: #define pi 3.1415. Here, when we use 'pi' in our code anywhere, it is replaced by 3.1415.

```
#include<stdio.h>
#define pi 3.1415
int main()
{
  float radius, area;
  printf("Enter the radius->");
  scanf("%f",&radius);
  area = pi*radius*radius;
  printf("Area = %.2f",area);
  return 0;
}
```

2. What is the utility of it?

   A. Macros can be used to make tasks less repetitive by representing a complete sequence of keystrokes, commands, and other types of input. In computer programming, macros are a tool that allows developers to re-use code. It also enables us to declare constants in our code. This prevents the errors that occurs due accidental change of variable values.

3. Give an example of use of a macro that looks like a function call.

A. We can define macros that work in a similar manner like a function call. This is known as function-like macros.
Example:-
#define circleArea (r) (3.14*(r)* (r))
[Everytime the program encounters circleArea (argument) it is replaced by (3.14*argument*argument)]

```
#include<stdio.h>
#define circleArea(r) (3.14*(r)* (r))
int main()
{
  float radius, area;
  printf("Enter the radius->");
  scanf("%f",&radius);
  area = circleArea (radius);
  printf("Area = %.2f",area);
  return 0;
}
```

4. What are the differences between macro and function?

MACRO	FUNCTION
Macro is pre-processed.	Function is compiled.
No type checking is done in macro.	Type checking is done in function.
Speed of execution using macro is faster.	Speed of execution using function is relatively slower.
Before compilation macro name is replaced by macro value.	During function call, transfer of control takes place.
Macros are useful when small code is repeated many times.	Functions are useful when large code is to be written.
Before Compilation, macro name is replaced by macro value.	During function call, transfer of control takes place.