Sample Paper - IV
Subject – Computer Science

Time: 3Hours
Maximum Marks: 70

Note. (i) All questions are compulsory.
Q.No.1.

a.Differentiate between primary memory and secondary memory.. Give examples
of each type of memory.   2

A)The memory inside the CPU is primary memory (main memory) and the memory
outside it is known as secondary(auxiliary) memory.
Primary Memory: RAM (Random Access Memory) and ROM (Read only
Memory) comes under primary memory. RAM is volatile memory and ROM is
non volatile memory. All the data and programs must be stored in RAM for
execution. But the content of RAM is not permanent.
Eg: RAM, ROM.
Secondary Memory: Since primary memory has a limited storage capacity and is
not permanent, secondary storage devices are used to store large amount of data
permanently. There are various types of secondary devices available these days.
Eg: Hard disks, Floppy disks ----- Magnetic Media
CD ROMS, DVDs ----- Optical Media

b. What is the difference between semantics error and syntax error? Give an example of each.
                                                                                                                      3
A) 1.Syntax Errors: Syntax errors occur when rules of a programming language are misused.
Syntax refers to formal rules governing the construction of valid statements in a language.
Eg: int a,b //Did not keep ; (semicolon) at the end of statement.
2.Semantics Error: Semantic errors occur when statements are not meaningful.
Semantics refers to the set of rules which give the meaning of a statement.
Eg: X * Y = Z;
(Siva plays Guitar is Syntactically and Semantically correct but
Guitar plays Siva is Syntactically correct but Semantically incorrect).

c. What do you meant by a lexical unit? Give an example.   2

A) Token: The smallest individual unit in a program is known as a token (**Lexical Unit**).
There are 5 types of tokens.
(i) Keywords (ii) Identifiers (iii) Literals (iv) Punctuators (v) Operators
d. what is relation between Microprocessor and Microcomputer   2
Ans. Microcomputer is a computer that contain a Microprocessor
e. Briefly Distinguish between a general purpose and special purpose computer   2

Q.No.2

a. what is the shortcut menu ? what is its significance   2
b. what is the significance of Recycle Bin   2
c. Explain the concept of time sharing   2
d. What is meant by the term multiprogramming and multitasking   2.
e .Explain briefly the function performed by an operating system as processor manager. 2

Q.No.3

a. **4.**Differentiate between object oriented programming and procedural oriented
programming with the help of examples of each.   3

A. **Procedure Oriented Programming:**
A program in a procedural language is a list of instructions where each statement tells the computer
to do something. The focus is on the processing. There is no much security for the data.
Object Oriented Programming:
The object oriented approach views a problem in terms of objects involved rather than
procedure for doing it. In object oriented programming, object represents an entity that can store data
and has its interface through functions

b.Distinguish between if and switch statement.   3

A)The if-else and switch both are selection statements and they both let you select
an alternative out of given many alternatives by testing an expression.
But there are some differences in their operations.
(i) The switch statement differs from the if statement in that switch can only test
for equality whereas if can evaluate a relational or logical expression. Ie multiple
conditions.
(ii) The switch statement selects its branches by testing the value of same variable
whereas the if else construction lets you use a series of expressions that may
involve unrelated variables and complex expressions.
(iii) The if-else can handle ranges whereas switch cannot.

c.Differentiate between call by value and call by reference with help of an example.   4

A)(i)In call by value, actual arguments will be copied into the formal perameters.
In call by reference, formal perameters are references to the actual arguments.
(ii)In call by value, if any modification is occurred to the formal perameter, that
change will not reflect back to the actual argument.
In call by reference, if any modification is occurred to the formal perameter
(reference to the actual argument), the actual argument value will be changed.
(iii) We should go for call by value when we don't want to modify the original value.
We should go for call by value when we want to modify the original value.
(iv) Example:
void Change(int a, int &b)
{ a= 2*a;
b=20;
}
Here a is called by "call by value" method and b is called by "call by reference"
So as the value of a is changed, actual argument for a will not be changed,
as the value of b is changed, actual argument for b will be changed

d.Write the names of the header files of the following functions.
i)getch() ii) isalpha() iii)strcpy() iv)sqrt()   2

A) (i) getch( ) - conio.h (ii)isalpha( ) – ctype.h
(iii)strcpy( ) - string.h (iv)sqrt( ) - math.h

Q.No.4
a. What will be the output of the following program?   3

```
int main()
{
   int i=0,x=0;
   for(i=1;i<10;i*=2)
   {
    x++;
    cout<<x;
   }
   cout<<"\n"<<x;
}
```

b.Rewrite the following program after removing the syntactical error(s) if any.
Underline each correction.   3

```
#include<iostream.h>
int main
{
   struct movie
    {
      char movie_name[20];
      char movie_type;
      int ticket_cost=100;
    }movie;

   gets(movie_name);
   gets(movie_type);
}
```

A)
```
#include<iostream.h>
#include<stdio.h>
void main( )
{
  struct movie
 {
  char movie_name[20];
  char movie_type;
  int ticket_cost;
 }Movie;
Movie.ticket_cost=100;
gets(Movie.movie_name);
cin>>Movie.movie_type;
}
```

c. **Define the terms Polymorphism & Inheritance.**   **2**

d.Write the output of the following program.   3

```
#include <iostream.h>
void main()
{
    int x = 5;
    if(x++ = = 5)
      cout<<"five"<<endl;
    else
```

```
        if(++x = = 6)
          cout<<"Six"<<endl;
}
```

e)
What will be the output of the following segment?   4

```
struct number
{
   int no1, no2;
};

void display(number n)
{
   cout<<"Number1="<<n.no1++<<"Number2="<<- -n.no2<<endl;
}
void main( )
{
   number n1={10,100}, n2, n3;
   n3 = n1;
   n1.no1 + = 5;
   n2 = n3;
   n2.no1 - = 5;
   n2.no2 * = 2;
   n3.no1 + = 1;
   display(n1);
   display(n2);
   display(n3);
}
```

f. convert $(4A8c)_{16}$ into binary number   2

Q.No.5

a. Write a program to find the factorial of any given number   3
b. Assuming suitable data types give necessary declaration for an array of 20 voter records each record of which consists of four data values viz. id_no,name, address, age, make use of above declaration to write program segment that print id_no and name for all those whose age exceeds 60.   5
c. Write a program to add two matrices of same order MXN.   4
d. Write a program to find either given no is prime or not   3
e. Write a function to find simple interest   3