



FINAL EXAMINATION-2022

Course Title: Computer Programming

Course Code: CSE-1103

1st Year, 1st Semester, Session: 2020-21

Time: 3 hours

Marks: 60

Answer any Five (5) Questions from the followings.

1. a) Explain the C's Place in the world of programming languages. 5
- b) When you call a library function, the C compiler "remembers" its name. Later, the linker combines the code you wrote with the object code already found in the standard library. Distinguish between the Library and Linking. 3
- c) There are two general methods by which a program can be executed. It can be compiled, or it can be interpreted. Differentiate between compilers and interpreters. 4
2. a) Differentiate between local and global variables with suitable example. 4
- b) Analyze the output of the following code segment. 4

```
#include <stdio.h>
#include <conio.h>

int i, j;
void main(void)
{
    i = 1;
    while (i <= 5)
    {
        for (j = 1; j <= 6; j++)
        {
            if (i == j)
                printf("X");
            else
                printf("Y");
        }
        i = i + 1;
    }
}
```

- c) What will be the output of printf function at func1 ()? 4

```
int count;
void func1(void);
void func2(void);

int main(void)
{
    count = 10;
    func1();
    return 0;
}

void func1(void)
{
    if (count > 5)
    {
        printf("%d", count);
    }
}
```

```
func2();
printf("count is %d", count);
}
```

```
void func2(void)
{
    int count;
    for(count=1; count<10; count++)
        putchar('.');
}
```

count is 10

3. a) Analyze the syntax error for each of the program line.

6

```
#include <conio.h>
int 1x, 2x, y1, y2;
float z;
char a[10], b[10];
main()
{
    scanf("%d%d%f", y1, z);
    scanf("%c%c%c", &a[1], a[2], &a[3]);
    b[2]=a[2];
    y2=b[2]+a[1]+y1;
    printf("%f%f%f%f%d", &y1, z, y2, z, a[3]);
}
```

- b) Differentiate with programming example(s) i) ++x vs x++ , ii) --y vs y-- .
- c) What will be output of these logical expression?
- i) 10>5 && !(10<9) || 3<=4
- ii) !0&&0 || 0
- iii) !0 || 0 || 0
- iv) !(0 && 0) || 0

4

2

4. a) What will be the output of the following code? Analyze this.

4

```
#include <stdio.h>
#include <conio.h>
void func1(int *p, int *q, int *r, int *s);
main() {
    int a, b, c, d, *x, *y;
    a=15, b=100; x=&d; y=&c; c=25; d=300;
    printf("Before calling %d%d%d%d", a, b, *x, *y);
    func1(&c, &d, &a, &b);
    printf("\nAfter calling %d%d%d%d", a, b, *x, *y);
    getch();
}
void func1(int *x1, int *x2, int *x3, int *x4)
{ *x1=100; *x2=200; *x3=300; *x4=400; }
```

- b) What is Arrays of Pointer? Illustrate with suitable example.
- c) Pointers are a mixed blessing. They give you tremendous power, but when a pointer is used incorrectly, or contains the wrong value, it can be a very difficult bug to find. Describe two (2) challenges to use pointer.

3

5

5. a) What will be the output of the following code? Analyze this.

5

```

#include <stdio.h>
int f1(int n);
int f2(void);

void main(void)
{
    int t;
    printf("Enter a number: ");
    scanf("%d", &t);

    t ? f1(t) + f2() : printf("zero
entered.");
    printf("\n");
}

void f1(int n)
{
    printf("%d ", n);
}

void f2(void)
{
    printf("'entered ");
}

```

Enter a number: n + entered

- b) An interesting trait of the *for* loop is that pieces of the loop definition need not be there. In fact, there need not be an expression present for any of the sections—the expressions are optional.

Analyze the following statement.

```
for (x=0; x != 123; ) scanf("%d", &x);
```

- c) Differentiate between While loop and Do-While loop. 3
6. a) What are the purposes of the *switch* statement? How does this statement differ from the other statements? 3
- b) The *break* statement has two uses. You can use it to terminate a case in the *switch* statement. Also, you can also use it to force immediate termination of a loop, bypassing the normal loop conditional test. 3
- Analyze, how it is used to force immediate termination of a loop.
- c) Recursion is the process of defining something in terms of itself, and is sometimes called circular definition. The main advantage to recursive functions is that you can use them to create clearer and simpler versions of several algorithms. 6

Using this technique, apply C programming for the factorial of value.

7. a) What will the output of the following code segment? 4

```

#include <stdio.h>
#include <conio.h>

int i,j;
main() {
    i=1;
    while (i<=5)
    {
        for (j=1; j<=6; j++)
        {
            if (i==j)
                printf("X");
            else
                printf("Y");
        }
        printf("\n");
        i++;
    }
}

```

```

X Y Y Y Y Y
X Y Y Y Y Y
X Y Y Y Y Y
X Y Y Y Y Y
X Y Y Y Y Y

```


b) List the syntax error (if any) of each line of the following code?

8

```
#include<conio.h>
int 1x,2x,y1,y2;
float z;
char a[10], b[10];
main()
{
scanf("%d%d%f",y1,z);
scanf("%c%c%c", &a[1], a[2], &a[3]);
b[2]=a[2];
y2=b[2]+a[1]+y1;
printf("%f%f%f%d%d", &y1,z,y2,z,a[3]);
}
```

8. a) What are the difference between passing an array to a function and passing a single-valued data item to a function? 3
- b) What are the advantages of using functions? 3
- c) What will be the output of the following code? If you think any values displayed may be garbage, mention it as garbage too. Explain how the variables take the values.

```
#include<stdio.h>
#include<conio.h>
void add_int(int n);
int x,p,q;
int main(){
int p; q=200; x=10;
printf("\nBefore calling x=%d p=%d q=%d", x,p,q);
add_int(x);
printf("\nAfter calling x=%d p=%d q=%d", x,p,q);
}
```
