

Class Test 2  
Set A  
Time :30 Minutes

|   |   |   |
|---|---|---|
| 1 | Write about different types of loop and differentiate among them  | 3 |
| 2 | <p>Explain the output of the following program</p> <pre>int main (void) {     int i;     for (i=32766; i&lt;=32768; i++)         printf ("%d", i); }</pre>  | 2 |
| 3 | Explain why break and continue statement is necessary in programming  | 2 |
| 4 | <p>Write the output of the following program</p> <pre>#include &lt;stdio.h&gt; int main() {     printf("break in for loop\n");     for (int i = 1; i &lt; 5; i++) {         if (i == 3) {             break;         }         else {             printf("%d ", i);         }     }     printf("\n break in while loop\n");     int i = 1;     while (i &lt; 20) {         if (i == 3)             break;         else             printf("%d ", i);         i++;     }     return 0; }</pre> |   |

Class Test 2  
Set B  
Time :30 Minutes

|   |   |   |
|---|---|---|
| 1 | Write the syntax of different types of loop and give example for each one   | 3 |
| 2 | <p>Explain the output of the following program</p> <pre>#include &lt;stdio.h&gt; int main() {     int i = 0;     while (1) {         printf("%d ", i);         i++;         if (i == 5) {             break;         }     }     return 0; }</pre>  | 2 |
| 3 | When we need to use break and continue statement give your opinion  | 2 |
| 4 | <p>Write the output of the following code</p> <pre>#include &lt;stdio.h&gt; int main() {     for (int i = 1; i &lt;= 6; ++i) {         for (int j = 1; j &lt;= i; ++j) {             if (i &lt;= 4) {                 printf("%d ", j);             }             else {                 break;             }         }         printf("\n");     }     return 0; }</pre> | 3 |

# University of Information Technology and Sciences (UITS)

Course Name: Structured Programming Language

Course Code: CSE 111 Class Test - 01 Set: A Time: 30 minutes Marks: 10

Student ID:

Student Name:

1 Which of the following are valid or invalid variable names and why?

- i. Basic-hra
- ii. Mindovermatter
- iii. FLOAT
- iv. #Variable

2 Find the error if any in the following C statements and write it in correct way:

- i. `int = 314,562 * 150;`
- ii. `3.14 * r * r * h = vol_of_cyl`
- iii. `si = principal * rateofinterest * numberofyears / 100`
- iv. `a = 5 - 3 = 4`

3 Write the output of the following code. If you get any error in the code then fix the error and find the output

```
a) #include <stdio.h>
int main()
{
    int a, b;
    a = -3 - -3;
    b = -3 - -(-3);
    Printf( "b = %d\ a = %d ", a, b );
    return 0;
}
```

```
b) include <studio.h>
int main( )
{
    int x = 30 & y = 40 ;
    if ( x == y )
        printf( "x is equal to y" );
    else ( x > y )
        printf( "x is greater than y" );
    else if ( x < y )
        printf( "x is less than y" )
    return 0;
}
```



# University of Information Technology and Sciences (UITS)

Course Name: Structured Programming Language

Course Code: CSE - 111 Class Test - 01 Set: B Time: 30 minutes Marks: 10

Student ID:

Student Name:

|   |  |   |
|---|--|---|
| 1 | Which of the following are valid or invalid variable names and why?<br><br>a) 'hello_123<br><br>b) total%<br><br>c) salary<br><br>d) \$hello   | 2 |
| 2 | Find the error if any in the following C statements and write it in correct way:<br>i. character = '25 April 10';<br><br>ii. area = 1/2 *base * height;<br><br>iii. volume = a <sup>3</sup><br><br>iv. slope = (y <sub>2</sub> - y <sub>1</sub> ) ÷ (x <sub>2</sub> - x <sub>1</sub> )   | 4 |
| 3 | Write the output of the following code. If you get any error in the code then fix the error and find the output<br>a) <pre>#include&lt;stdio.h&gt; int main() {     float a=5 &amp; b=2;     int c,d;     c = a%b;     d = a/2;     printf("%d &amp;&amp;%d", d c);      return 0; }</pre><br>b) <pre>include&lt;stdio.h&gt; int main() {     int a , b , c;     a = 4 , b = 3;     c = a &amp;&amp; b;     b = a  b  c;     a = a &amp; b  c;     print("%d" , a\n);     printf("d" , b\n)     pintf("%d" , c\n);     return 0; }</pre> | 4 |

# University of Information Technology and Sciences (UITS)

**Course Name:** Structured Programming Language

**Course Code:** CSE – 111 **Class Test – 01 Set: C Time:** 30 minutes **Marks:** 10

**Student ID:**

**Student Name:**

|   |  |   |
|---|--|---|
| 1 | <p>Which of the following are valid or invalid variable names and why?</p> <p>a) _lage</p> <p>b) Name_123</p> <p>c) total%</p> <p>d) \$hello</p>   | 2 |
| 2 | <p>Find the error if any in the following C statements and write it in correct way:</p> <p>a) float = 314.562 * 150 ;</p> <p>b) volume = 3.14 * r ^ 2 * h ;</p> <p>c) k = ( a * b , + c ) ( 2.5 * a + b )</p> <p>d) date = '2 Mar 04' ;</p>  | 4 |
| 3 | <p>Write the output of the following code. If you get any error in the code then fix the error and find the output</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>a) #include &lt;stdio.h&gt;</p> <pre>int main( ) {     int i = 10 j = 20 ;     if ( i = 5 ) &amp;&amp; if ( j = 10 ) ;     printf( "\nHave a nice day" )     return 0;     printf( "%d %d", i, j ); }</pre> </div> <div style="width: 45%;"> <p>b) #include &lt;studio.h&gt;</p> <pre>int main( ) {     int x = 30 &amp; y = 40 ;     if ( x == y )         printf( "x is equal to y" );     elseif ( x &gt; y )         printf( "x is greater than y" );     ifelse ( x &lt; y )         printf( "x is less than y" );     return 0; }</pre> </div> </div> | 4 |

# University of Information Technology and Sciences (UITS)

Course Name: Structured Programming Language

Course Code: CSE - 111 Class Test - 01 Set: D Time: 30 minutes Marks: 10

Student ID:

Student Name:

|   |  |   |
|---|--|---|
| 1 | Which of the following are valid or invalid variable names and why?<br><br>i. 'queue.<br><br>ii. over time<br><br>iii. Cha<br><br>iv. Plot # 3   | 2 |
| 2 | Find the error if any in the following C statements and write it in correct way:<br><br>i. name = 'Ajay' ;<br><br>ii. m_inst = rate of interest * amount in rs ;<br><br>iii. k = ( a b ) + c ) ( 2.5 a + b ) ;<br><br>iv. count = count + 1 ;  | 4 |
| 3 | Write the output of the following code. If you get any error in the code then fix the error and find the output<br><br>a) #include <stdio.h><br>int main( )<br>{<br>int i = 2 j = 3, k, l;<br>float a, b;<br>m = i / j * j;<br>n = j / i * i;<br>a = i / j * j;<br>b = j / i * i;<br>printf( "%d %d %f %f", k, l, a, b );<br>} | 4 |

b) include <stdio.h>  
int main( )  
{  
    int x = 2;  
    if( x -- )  
        printf( "1" );  
    elseif( x -- )  
        printf( "2" );  
    elseif( x -- )  
        printf( "3" );  
    else  
        printf( "None" );  
    printf( "%d" );  
    return 0;



# Structured Programming Language Laboratory

Final Lab Test

Set B

Time: 40 minutes

Marks 30

|   |  |    |
|---|--|----|
| 1 | Write a function that takes the user's order as input (book title, quantity, and price) and calculates the total cost including tax (10% of the total amount) and shipping charge 50tk BDT | 10 |
| 2 | Write a program in C to count the total number of vowels or consonants in a string.  | 10 |
| 3 | Viva   | 10 |

# Structured Programming Language Laboratory

Final Lab Test

Set A

Time: 40 minutes

Marks 30

|   |   |    |
|---|---|----|
| 1 | <p>You need to read 2 user-defined input integers - n and m. Print all numbers from 1 to n and 1 to m on separate lines using user-defined inputs. Check the sample output below</p> <p>Input: Please enter a value for n: 5<br/>Please enter a value for m: 7</p> <p>Output</p> <pre>1 2 3 4 5 1 2 3 4 5 6 7</pre> | 10 |
| 2 | Write a program in C to count the total number of alphabets, digits, and special characters in a string.  | 10 |
| 3 | Viva  | 10 |

Class Test 3  
Time 25 minutes  
Marks 10      Set D

|   |   |   |
|---|---|---|
| 1 | Write the syntax of an array and define an array that takes 5 values as input and search a value that is given by the user. | 4 |
| 2 | Design a function that calculates the sum from 1 to n.  | 4 |
| 3 | Write about call by value and call by reference   | 2 |

Class Test 3  
Time 25 minutes  
Marks 10      Set B

|   |  |   |
|---|--|---|
| 1 | Write the syntax of an array and define an array that takes 5 values as input and prints the maximum value among them                      | 4 |
| 2 | Define a user-defined function and design a function that takes 3 values from its caller function and returns the minimum value as output. | 4 |
| 3 | Write the advantage of using function  | 2 |

Class Test 3  
Time 25 minutes  
Marks 10      Set A

|   |  |   |
|---|--|---|
| 1 | Write the syntax of an array and define an array that takes 5 values as input and prints the values with its index number.                 | 4 |
| 2 | Define a user-defined function and design a function that takes 3 values from its caller function and returns the maximum value as output. | 4 |
| 3 | Write the advantage of using array   | 2 |

Class Test 3  
Time 25 minutes  
Marks 10      Set c

|   |   |   |
|---|---|---|
| 1 | Write the syntax of an array and define an array that takes 5 values as input and prints the lowest number among them | 4 |
| 2 | Design an user defined function that find the sum of even number from 1 to n  | 4 |
| 3 | Write about the multiple return type of user defined function and   | 2 |

1. if-else in user-defined function
2. passing array as argument  
(passing the first index will pass the rest)



**(Answer all questions)**

1. a) Find the output of the following program and Explain the unary operators. [04]
- ```
{  
int x, a;    //Here a =the last digit of your ID.  
x= a-- + a++ + --a;  
printf("%d",a);  
printf("%d",x);  
}
```
- b) Is there any difference between the following two statements? If any, explain. [02]
- Statement 1:  $a = a + b$   
Statement 2:  $a += b$
- ✓) Develop a C program that takes two inputs (x and n) from the user, calculates  $x^n$  and stores the result in variable P. [04]
2. a) Suppose  $X=4$  and  $Y=7$ , describe the working procedures of the operators '&&' and '&' used in the following statements and find the result of the operations. [04]
- $A = X \&\& Y$   
 $B = X \& Y$
- ✓) Analyze the following program and find the errors with correction. [04]
- ```
#include<stdio.h>  
int main  
{  
Int num;  
printf("Enter a number: ")  
scanf("%d",num);  
if (num%2 = 0)  
{  
printf("%d is even number.\n",number);  
}  
else {  
printf (odd number);  
return 0;  
}  
}
```
- c) With an example briefly describe the ternary operator. [02]

# Structured Programming

## Lab Test

### Set – A

1. Take three integer input from the user- num1, num2 and choice. If the value of choice variable is 1, 2 or 3, then output addition, subtraction and multiplication of num1 and num2 respectively. Otherwise, print an "ERROR" message.
2. Suppose, we are dividing the students in different groups for annual sports. Group the students in two groups depending on their ID.
  - I. If student ID is ODD, keep them in group A.
  - If student ID is EVEN, keep them in group B.

Now write a code to take the student ID as input and output his/her group name. Total number of students is 25. Therefore, student ID is valid from 1 to 25. If any ID is found which is not in this range then show an "INVALID" message.

3. Write a C program to print out the following digit pattern using loop

```
55555
4444
333
22
1
```

0432910005101055

## Structured Programming Lab Test Set – B

1. Admission to a professional course is subject to the following conditions:

- i. Marks in mathematics  $\geq 60$
- ii. Marks in Physics  $\geq 50$
- iii. Marks in Chemistry  $\geq 40$
- iv. Total in all three subjects  $\geq 200$

Or

Total in mathematics and Physics  $\geq 150$

Given the marks in three subjects, write a C program to process the applications to list the eligible candidates.

2. In boxing the weight class of a boxer is decided as per following table. Write a program that receives weight as input and prints out the boxers weight class

| Boxer Class         | Weight in Rounds |
|---------------------|------------------|
| Flyweight           | $< 115$          |
| Bantam Weight       | 115-121          |
| Feather Weight      | 122 – 155        |
| Middle Heavy Weight | 154 – 189        |
| Heavy Weight        | $\geq 190$       |



Set - B

1. Write a program in C to print the factorial of a number by defining a function named Factorial.
2. Find the frequency of a given character from a string.  
For example: If the string is "We are the student of UITS"  
Here the frequency of u=1
3. Write a program in C that defines an array of size 10. Take 10 integers as input and save the quotients of every element if divided by 3 in another array.  
For example:  
If array1 = {3,9,30,27,0,15,63,24,90,12}  
Then array2 will be {1,3,10,9,0,5,2,8,30,4} ✓  
21

### Answer any one from 1 and 2

1. You are developing a program to print a multiplication table for a given number. The program should prompt the user to enter a number, and then it should print the multiplication table for that number from 1 to 5. At the end of the loop print the summation of all results.

Write a C program using a for loop to perform the following tasks:

Prompt the user to enter a number.

Read the number entered by the user.

Use a for loop to iterate from 1 to 5.

Within the loop, calculate the product of the entered number and the loop variable (1 to 5).

Print the multiplication table for the entered number.

Print the summation of all results.

2. You are designing a program for a bank that needs to generate account numbers for its customers. The account numbers should follow a specific pattern, starting from 1001 and incrementing by 5 for each new account.

Write a C program using a for loop to generate and print account numbers for the bank's customers. The program should generate account numbers for the first 10 customers.

Your program should output the account numbers in the following format:

Account number for customer 1: 1001  
Account number for customer 2: 1006  
Account number for customer 3: 1011

### Answer anyone from 3 and 4

3. You are developing a simple calculator program for a class project. The program should allow users to perform basic arithmetic operations such as addition, subtraction, multiplication, and division. You decide to implement the calculator using a switch statement.

Write a C program that implements a calculator using a switch statement. The program should prompt the user to enter two numbers and then ask the user to choose an operation (addition, subtraction, multiplication, or division). Based on the user's choice, the program should perform the corresponding operation and display the result.

Your program should include the following operations:

Addition (+)

Subtraction (-)

Multiplication (\*)

Division (/)



Answer any one from 1 and 2

4. You are developing a menu-driven program for a restaurant's ordering system. The program should display a menu of food items along with their corresponding prices. The user should be able to select items from the menu and add them to their order. After the user finishes selecting items, the program should calculate the total bill.

Write a C program that implements this restaurant ordering system using a switch statement to handle the menu options.



University of Information Technology and Sciences

Department of CSE

Structured Programming Language Lab [CSE0613112]

Lab Test

Set - A

1. Write a program in C to print the circumference and area of a circle of radius entered by the user by defining your own function.

2. Find the number of vowels, consonants, digits and white spaces from a string.  
For example: "UITS is the 1st IT based University"

Number of vowels=11

Number of consonants=17

Numbers of digits=1

Number of white spaces=6

3. Write a program in C that defines an array named array1 of size 10. Take 10 integers as input and save the multipliers of 10 of every element in another array named array2 and print it.  
For example:

If array1 = {2,5,3,7,0,6,11,4,9,1}

Then array2 will be {20,50,30,70,0,60,110,40,90,10}

Siam

34

55 batch