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## Laboratory Index

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University Roll No: UG1/02/BTCSEA/ML/2023/040

Course Name/Code: CSE11001

Sl. No	Date	Program Name	Signature
1	5/1/24	10 C programmes	
a		Write a C program to print university name.	
b		Write a C program to print any integer and float no.	
c		Write a C program to calculate add, sub, mul, div, mod of any 2 integer number.	
d		Write a C program to print average of 5 float number.	
e		Write a C programme to add of 2 numbers without (+) operator.	
f		Write a C program to calculate arithmetic program $(a+b)^2$ & $(a+b)^3$	
g		Write a C program to find power of any number.	
h		Write a C program to find square root of any number.	
i		Write a C programme to find sin, cos, tan of any number.	
j		Write a C program to find area of a triangle.	

10

V. good

SDM

16/1/24

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Sec - D

SIGNATURE



4. Write a C programme to print average of 5 float no.

Ans.

```
#include <stdio.h>
void main ( )
```

```
{
```

```
float a=2.54;
```

```
float b=3.54;
```

```
float c=4.54;
```

```
float d=5.54;
```

```
float e=6.54;
```

```
float f;
```

```
f=(a+b+c+d+e)/5;
```

```
printf("The Average value of 5 float no. is = %f", f);
```

```
getch ( );
```

```
}
```

output :- The Average value of 5 float no. is = 4.54000

Write a C programme to find addition of 2 numbers without using 'addition' operator.

Ans.

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

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

```
#include
```

```
void main ( )
```

```
{
```

```
int a=2;
```

```
int b=4;
```

```
int c;
```

→

```
return 0;
```

```
}
```

Output

Square root of 25 is : 5

Square root of - 100.0 is : 10.0

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Date :

Introduction to prog  
- CSE1001, C++

CS of programming  
D. Compilation Model  
ie of C program

tion & pointer  
/ union, structure

K, Queue.

→ 4x10 -- no option  
10 for attendance

S=10 {1 to 5} no option  
S=20 {6 to 10} 10(a) or

20 {11(a) or 11(b)} 10(b)  
{12(a) or 12(b)}

processor, Directories (A)  
ion declaration  
Variance



10. Write a C programme to calculate the area of a triangle.

Ans.

```
#include <stdio.h>
#include <math.h>
int main()
{
    int base = 15;
    int height = 5;
    int area = (base * height) / 2;
    printf("area of the triangle = %d", area);
    return 0;
    getch();
}
```

Output: area of the triangle = 37

V. good  
SD on  
16/1/24

3. Write a C programme to calculate addition, subtraction, multiplication, division, modulation of 2 integer numbers.

Ans :-

```
#include <stdio.h>
int main()
```

```
{
    int a=10;
    int b=5;
    int c,d,e,f,g;
```

```
    c = a+b;
```

```
    d = a-b;
```

```
    e = a/b;
```

```
    f = a*b;
```

```
    g = a%b;
```

```
    printf("Addition Subtraction, Division, Multiplication,
    Modulation of 2 integer no. is = %d %d %d %d %d %d
    respectively", c, d, e, f, g);
```

```
    return 0;
```

```
    getch();
```

```
}
```

Output :-

Addition, Subtraction, Division, Multiplication, Modulation of 2 integer no. is = 15, 5, 2, 50, 0 respectively.



```

}
printf("Even");
}
else
{
printf("Odd");
}
return 0;
}

```

Output

Enter a no. to check, odd  
or even 3  
Odd ~~Even~~.

Q13. Write a C program to find largest of three integers.  
a) Using only if statement.  
b) Using only if else statement.

Ans.

```

a) #include <stdio.h>
int main()
{

```

```

    int a, b, c;
    printf("Enter three integer: ");
    scanf("%d %d %d", &a, &b, &c);
    if (a > b && a > c)

```

```

    {
        printf("%d is largest of all", a);
    }

```

```

    if (b > a && b > c)

```

```

    {
        printf("%d is largest of all", b);
    }

```

```

    if (c > a && c > b)

```

②

MODULE-1  
(BASIC PROGRAM)

1. Write a C program to print addition of two numbers. (pre-defined) and write a C program to print addition of two numbers without storing it in a new variable. (pre-defined).

Ans.

```
① #include <stdio.h>
```

```
int main()
```

```
{
```

```
int a, b, c;
```

```
a = 20;
```

```
b = 30;
```

```
c = a + b;
```

```
printf("The Sum of %d and %d is %d\n", a, b, c);
```

```
return 0;
```

```
}
```

Output:-

The Sum of 20 and 30 is 50



Q6. WACP to calculate area of a circle, rectangle.

Ans. #include <stdio.h>

int main() {

printf("Enter the radius\n");

scanf("%f", &radius);

area = 3.142 \* radius \* radius

printf("Area of a circle = %f\n", area);

break;

case 2:

printf("Enter the breadth and length\n");

scanf("%f %f", &breadth, &length);

area = breadth \* length;

printf("Area of a Rectangle = %f\n", area);

default;

printf("Enter invalid code\n");

}

Output

Enter the radius

- 2

area = 12.56

Q7. WACP to calculate  $(a^2 - b^2)(a - b)^{13}(a + b)^{12}$  and  $(a - b)^{12}$

Ans. #include <stdio.h>

#include <math.h>

int main()

{

int a, b;

scanf("%d %d", &a, &b);

```

c = a - (-b);
printf("%d", c);
getch();
}

```

Output :- 6

6. Write a C programme to calculate arithmetic prog-  
-ramme  $(a+b)^2$  and  $(a+b)^3$

Ans.

```

#include <stdio.h>
#include <conio.h>
#include <math.h>
int main()
{
    int a=4;
    int b=6;
    int c = pow((a+b), 2);
    int d = pow((a+b), 3);
    printf("square of a+b = %d\n", c);
    printf("cube of a+b = %d", d);
    return 0;
    getch();
}

```

Output : Square of a+b = 100  
Cube of a+b = 1000



```

{
printf("Positive no.");
}
if (n < 0)
{
printf("Negative no.");
}
return 0;
}

```

Output

Enter a no. -2  
Positive no. / Negative no.

If-else

```

#include <stdio.h>
int main()
{
int n;
printf("Enter a no.");
scanf("%d", &n);
if (n > 0)
{
printf("Positive no.");
}
else
{
printf("Negative no.");
}
return 0;
}

```

Output

Enter a no: 3  
Positive no. / Negative no.

Q17. Write a C program to check whether a number is positive, Negative or zero or not.

Ans. #include <stdio.h>  
int main()  
{  
int a;  
printf("Enter a no:");

(9)

```

{
printf("B");
}
if (d <= 70 && d > 80)
{
printf("C");
}
else
{
printf("Fail");
}
return 0;
}

```

Output  
Enter marks of three subjects  
10 50 20  
~~A/B/C~~ Fail.

```

else - if
#include <stdio.h>
int main ()
{
int a, b, c, d;
printf("Enter marks of 3 subjects: ");
scanf("%d %d %d", &a, &b, &c);
d = (a + b + c) / 3;
if (d <= 100 && d > 80)

```

```

{
printf("A");
}
else if (d <= 80 && d > 70)
{
printf("B");
}
else if (d <= 70 && d > 60)
{
printf("C");
}

```

Output  
Enter marks of 3 subjects:  
90 90 95  
~~A/B/C~~ Fail

(B)



```

printf("A");
}
if (d <= 80 && d > 70)
{
printf("B");
}
if (d <= 70 && d > 60)
{
printf("C");
}
if (d <= 60 && d >= 0)
{
printf("Fail");
}
return 0;
}

```

if-else

```

#include <stdio.h>
int main ()
{

```

```

    int a, b, c, d;
    printf("Enter marks of three subjects:");
    scanf("%d %d %d", &a, &b, &c);
    d = (a + b + c) / 3;
    if (d <= 100 && d > 80)
    {
        printf("A");
    }
    if (d <= 80 && d > 70)

```

Output

Enter marks of three subjects:  
20 50 40

~~A/B/C~~ / Fail.  
 Fail

(5)

Q10  
Ans

```
}  
else  
{  
printf("Fail");  
}  
return 0;  
}  
nested-if  
#include <stdio.h>  
int main()  
{  
int a, b, c, d;  
printf("Enter three marks:");  
scanf("%d %d %d", &a, &b, &c);  
d = (a + b + c) / 3;  
if (d <= 100 && d > 80)  
{  
printf("A");  
}  
else {  
if (d <= 80 && d > 70) {  
printf("B");  
}  
else {  
if (d <= 70 && d > 60)  
{  
printf("C");  
}  
else {  
printf("Fail");  
}  
}  
}
```

Output  
Enter three marks:  
80 80 80  
~~A/B/C/Fail.~~  
B

(7)



1. Write a C program to convert a Celsius temperature to Fahrenheit temperature (pre-defined).

Ans. 

```
#include <stdio.h>
int main()
{
    float C = 37, f = 98.6, c1, f1;
    c1 = ((f - 32) * 5) / 9;
    f1 = (C * (9/5)) + 32;
    printf("Fahrenheit to Celsius: %f is ", c1);
    printf("Celsius to Fahrenheit: %f is ", f1);
    return 0;
}
```

Output :-

Fahrenheit to Celsius : 37

Celsius to Fahrenheit : 98.6

5. Write a C program to Calculate Square root of any integer and float number.

Ans. 

```
#include <stdio.h>
#include <math.h>
int main()
{
    int a = 25;
    float b = 100.0;
    printf("Square root of %d is : %d", a, sqrt(a));
    printf("Square root of %f is : %f", b, sqrt(b));
}
```

```

    printf("%d is largest of all", c);
}
if (a == b && b == c && a == c)
{
    printf("All three integers are equal.");
}
return 0;
}

```

Output  
Enter three integers - 2 3 6  
6 is largest of all.

Q6. #include <stdio.h>  
int main ()  
{  
 int a, b, c;  
 printf("Enter three integers:");  
 scanf("%d %d %d", &a, &b, &c);  
 if (a > b && a > c)  
 {  
 printf("%d is largest", a);  
 }  
 if (b > a && b > c)  
 {  
 printf("%d is largest", b);  
 }  
 if (c > a && c > b)  
 {  
 printf("%d is largest", c);  
 }  
}



```
return 0;
}
```

Q14. Write a C program to find given two variables are equal or not (user-defined).

Ans. #include <stdio.h>  
 int main()  
 {  
 int a, b;  
 printf("Enter two variables :");  
 scanf("%d %d", &a, &b);  
 if (a == b)  
 {  
 printf("Both are equal");  
 }  
 else  
 {  
 printf("Both are not equal");  
 }  
 return 0;  
 }

Output  
 Enter two variables:  
 5 5  
 Both are equal.

Q16. Write a C program to find the positive and negative numbers using if, if else (user-defined).

Ans. If.

```
#include <stdio.h>
int main()
{
  int n;
  printf("Enter a no:");
  scanf("%d", &n);
  if (n > 0)
```

(8)  
(11)

9. Write a C programme to calculate sin, cos, tan at any given Number.

Ans.

```
#include <stdio.h>
#include <math.h>
int main()
{
    int num a = 90;
    float b = sin(a);
    float c = cos(a);
    float d = tan(a);
    printf("sin of the number = %f\n", b);
    printf("cos of the number = %f\n", c);
    printf("tan of the number = %f", d);
    return 0;
    getch();
}
```

Output :- sin of the number = 0.893997  
cos of the number = -0.448074  
tan of the number = -1.995200



Q9. WAP to print 5 characters.

Ans. #include <stdio.h>

```
int main () {
    char ch = 'a', ch2 = 'b', ch3 = 'c', ch4 = 'd', ch5 = 'e';
    printf ("%c %c %c %c %c", ch, ch2, ch3, ch4, ch5);
    return 0;
}
```

Output

a b c d e

Q10. WAP to calculate addition, subtraction, multiplication and division of four float no.

Ans. #include <stdio.h>

```
int main () {
    float a, b, c, d;
    printf ("Enter the no: ");
    scanf ("%f %f %f %f", &a, &b, &c, &d);
    printf ("The sum is : %f\n", a+b+c+d);
    printf ("The diff is : %f\n", b-c);
    printf ("The product is : %f\n", a*b*c*d);
    printf ("The Quotient is : %f\n", a/d);
    return 0;
}
```

Output

Enter the no: 10.0 6.0 2.0 5.0  
The sum is : 23.0  
The diff is : 4.0  
The product is : 600.0  
The Quotient is : 2.0

1. Write a C programme to print Your University Name.

Ans.

```
#include <stdio.h>
int main()
{
    printf("ADAMAS UNIVERSITY");
    return 0;
    getch();
}
```

Output: ADAMAS UNIVERSITY

Write a C programme to show any integer and float number.

Ans.

```
#include <stdio.h>
int main()
```

```
{
    int a = 4;
```

```
    float b = 2.46;
```

```
    printf("integer number and float number is = %d and %f", a, b);
```

```
    return 0;
```

```
    getch();
}
```

Output: integer number and float number is = 4 and 2.4600



```

    }
    else
    {
        printf("All are equal");
    }
    return 0;
}

```

Output  
Enter three integers: 1 2 3  
3 is largest.

Q15. Write a C program to find the average of marks of three subjects and find the grade of the marks using only if, else if, nested if, if else.

Ans. If avg. is between 80 - 100, grade = A  
 " " " " 70 - 80, grade = B  
 " " " " 60 - 70, grade = C  
 Avg. less than 60 is fail.

Ans. It.

```

#include <stdio.h>
int main()
{
    int a, b, c, d;
    printf("Enter marks of three subjects: ");
    scanf("%d %d %d", &a, &b, &c);
    d = (a + b + c) / 3;
    if (d <= 100 && d > 80)
    {

```

(1)

7. Write a C programme to find power of any number.

Ans.

```
#include <stdio.h>
#include <math.h>
int main()
{
    int a = 20;
    int b = pow(a, 2);
    printf("power of a is = %d", b);
    return 0;
    getch();
}
```

Output: power of a is = 400

8. Write a C programme to calculate square root of a number.

Ans :-

```
#include <stdio.h>
#include <math.h>
int main()
{
    int a = 625;
    int b = sqrt(a);
    printf("square root of a is = %d", b);
    return 0;
    getch();
}
```

Output: square root of a is = 25



## MODULE - 2

Q11. Write a C program to find even and odd numbers only using if statement.

Ans. #include <stdio.h>

```
int main()
{
    int n;
    printf("Enter a no. to check odd or even");
    scanf("%d", &n);
    if (n % 2 == 0)
    {
        printf("Even");
    }
    if (n % 2 != 0)
    {
        printf("Odd");
    }
    return 0;
}
```

Output :-

Enter a no. to check odd or even 2

Even ~~Odd~~

Q12. Write a C program to find even and odd numbers using if-else statement.

Ans. #include <stdio.h>

```
int main()
```

```
{
    int n;
    printf("Enter a no. to check odd or even:");
    scanf("%d", &n);
    if (n % 2 == 0)
```

```

num1 = num2;
num2 = temp;
printf("After swapping variable 1 = %d, variable 2 = %d\n", num1, num2);
}
return 0;
}

```

Output :-

Enter value for variable - 1 : 2  
 Enter value for variable - 2 : 3  
 After swapping variable 1 = 3, variable 2 = 2

3. Write a C program to print average of five numbers. (pre-defined).

Ans. #include <stdio.h>  
 int main()  
 {  
 int a=5, b=10, c=15, d=20, e=25, f;  
 f=(a+b+c+d+e)/5;  
 printf("The average of 5 integers is %d", f);  
 return 0;  
 }

Output :-

The average of 5 integers is 15.



```

printf("(a^2 - b^2) = %d", pow(a,2) - pow(b,2));
printf("\n(a-b)^3 = %d", pow(a-b,3));
printf("\n(a+b)^2 = %d", pow(a+b,2));
printf("\n(a-b)^2 = %d", pow(a-b,2));
return 0;
}

```

Output

10 20  
 $(a^2 - b^2) = -800$   
 $(a-b)^3 = -1000$   
 $(a+b)^2 = 900$   
 $(a-b)^2 = 100$

Q8. WAP to calculate left shift, right shift and conditional operators.

Ans. #include <stdio.h>  
int main()  
{  
int a=10, b=3;  
// Left shift  
int left shift result = a << b;  
// Right shift  
int right shift = a >> b;  
// Conditional operator

```

int max = (a > b) ? a : b;
printf("Left shift result: %d\n", left shift result);
printf("Right shift result: %d\n", right shift result);
printf("Maximum of %d and %d is: %d\n", a, b, max);
return 0;
}

```

Output  
Left shift result: 80  
Right shift result: 1  
Maximum of 10 and 3 is: 10

11) #include <stdio.h>

int main()

{

int a, b;

a = 10;

b = 20;

printf("The Addition of %d and %d without another variable is %d", a+b);

return 0;

}

Output :-

The Addition of 10 and 20 without another variable is 30

2. Write a C program to swap two numbers using and without using third variable.

Ans. #include <stdio.h>

int main()

{

int num1, num2, temp;

~~for(int i=0; i<5; i++)~~

{

printf("Enter Value for variable 1: ");

scanf("%d", &num1);

printf("Enter Value for variable 2: ");

scanf("%d", &num2);

temp = num1;