Quiz-2

Question 1

Time: 00:00:10

Q1-below is a pseudo code

```
Set x = 1

Set n = 200

while(n>100):

    x=x-n

    n=n-5

    end while

Write x
```

What is the output of the above pseudocode?

- ○ -3049
- ○ -3048
- ○ -3047
- ○ -3059

◉ -3049

Ans :

```
x = 1

n = 200

while(n>100):

    x=x-n

    n=n-5

print(x)
```

In the above code, we have used the Python programming language. You can solve it using any programing language.

Here the value of x gets decremented until the number n is greater than 100

Question 2

Time: 00:00:03

Q2-Below is a pseudo-code

```
Set x = 0;

Set y = 1;

Set n = 0

print(0)

print(1)

while(n<10-2):

    Set z=x+y

    Swap x, y with  y, z

    Write z

    Increment of n by 1
```

In which series is the output

- ○ Fibonacci series
- ○ Tribonacci series
- ○ Triangular series
- ○ Arithmetic series

Ans: ◉ Fibonacci series

Question 3

Time: 00:00:28

Q 3-What will be the output of the following pseudocode?

```
Integer x,y,z

Set x=3

Set y=90

while(y is greater than 0);

    y=y/3

    x=x+6

    c=x+y

    while(c is greater than 30):

        if(c mod 3 is equals to 0):

            Write x

        else:

            Write y

        c=c/5

Write c
```

- 9, 33
- 9, 30
- 9, 36, 9
- 9 33 6

- [x] 9 33 6

Ans:

This pseudocode performs some simple mathematical operations until the value of y is greater than 0 and c is greater than 30 and prints the value of x, y and z.

below is the Python code for this pseudo code:

```
x=3

y=90

while(y>0):

    y=y//3

    x=x+6

    c=x+y

    while(c>30):

        if(c % 3 == 0):

            print(x)

        else:

            print (y)

        c=c//5

print(c)
```

Question 4

Time: 00:00:03

What will be the output of the following pseudocode?

```
int main()
{
   integer num;
   for(num equals to 80; num!=0; num++)
     Write num++
   getchar();
   return 0;
}
```

- None of the mentioned options
- Error
- 140
- Infinite loop

Ans:

This code will go to infinite loop as the value of n will never be 0 and condition num!= 0 will never be false

Question 5

Time: 00:00:24

Consider the following given algorithm and identify the task performed by this

```
int main()
{
   int n = 1;
   do
   {
      printf("%d", n);
      n--;
      if (n > 15)
        continue;
   } while (0);
   return 0;
}
```

- 15
- 1
- 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
- Run Time Error

Ans: 1

The value of n will get printed only once as the loop will read the while(false) statement after the one iteration

Question 6

Time: 00:00:03

What will be the output of the following pseudocode?

```
#include <stdio.h>

using namespace std;

int main()

{

    printf("%d", 'X' > 'x');

    return 0;

}
```

- O
- X
- x
- 1

Ans : O

Ascii value of X is not greater than x. So, the logical output will be false hence O will be printed.

Question 7

Time: 00:00:04

What will be the output of the following pseudocode?

```
#include <stdio.h>

using namespace std;

int main()

{

    for (int x = 10; x >= 0; x--) {

        int z = x & (x >> 1);

        if (z)

            printf("%d ", x);

    }

}
```

- 127
- 1098
- 763
- 963

763

& represents bitwise and
>> represents right shift
(x>>1) can be written as x/2

in the first iteration

x=10
z=10&5=0
hence if statement will not be executed

if you run all the iterations then you can find that

z=3 [at x=7]
z=2 [at x=6]
z=1 [at x=3]

hence if statement will run in these cases only

So, 7 6 3 will be printed

Question 8

Time: 00:00:03

What will be the output of the following pseudocode?

```
#include <stdio.h>

int main()

{

    int x = 10, y = 20, z = 30;

    z = x = y;

    printf("%d", z);

    return 0;

}
```

- 10
- 30
- Error
- 20

◉ 20

Ans:

Assigning the value of y to x and z

Question 9

Time: 00:00:

What will be the output of the following pseudocode?

```
#include <stdio.h>

int main()

{

    int x = 210;

    int y = 0;

    ;

    ;

    printf("%d", y);

    ;

    ;

    return 0;

}
```

○ 0

○ 210

○ Run Time Error

○ Compile Time Error

◉ 0

No error it will print 0 as the value of y as y is initialized to 0

Question 10

Time: 00:00:15

What will be the output of the following pseudocode for the given set of input?

```
#include <stdio.h>

void main()

{

    int a = 1.0, b = 2, c = 3.12;

    char d = 0.0;

    if (a, b, c, d)

    {

        printf("KHUDSOLVEKRO");

    }

}
```

- No output
- Error
- KHUDSOLVEKRO
- 1.0

No output

Here it statement will check the last parameter only which is d. As d=0 the print statement will not get executed.

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Pseudocode Question 3

1) pseudocode output:-

```
Set X=1
Set n=200
while (n>100):
    x:= x-n
    n= n-5
end while
write x
```

Solution:-

1) Init $x=1, n=200$

2) Loop $(n>100)$:

iter 1: $x = 1-200 = -199, n = 200-5 = 195$

iter 2: $x = -199-195 = -394, n = 195-5 = 190$

continue until $n<=100$:

loop run for $n = 200, 195, 190, \ldots 105$

Final value of x after all iters, -3049,

$n = 200, 195, \ldots$

$T_n = a+(n-1)d$

$S = n/2(a+l)$

$S_n = \frac{20}{2}(105+200)$

$= 10(305)$

2) Series identification:-

```
Set x=0
Set y=1
Set n=0
print(0)
print(1)
while(n<10-2)
    Set x=key
```

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Sum x, y with y, 2
write z
Increment x by 1

Analysis:- Code print 0, 1 & generate next terms by summing two x & y togeth. resembles Fibonacci series.

(3) pseudocode Output:-

```
integer x, y, z
set x = 3
set y = 90
while (y > 0):
    y = y/3
    x = x+6
    c = x+y
    while (c > 30):
        if (c mod 3 == 0):
            write x
        else:
            write y
        c = c/5
    write c
```

Solution:- • First loop (y > 0):
• y = 90/3 = 30, x = 3+6 = 9, c = 9+30 = 39

• Nested loop (c > 30):
• 39 mod 3 == 0 → print (x = 9)
• c = 39/5 = 7 (loop exist.)

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- print c=7

(3) Second iteration:

Y = 30/3 = 10, X = 9+6 = 15, c = 15+10 = 25

25 > 30 is false

print c = 25

Final output : 9, 7, 25

(4) Infinite loop

```
for (num=89; num!=8; num++)
    write num++;
```

Ans:- num starts at 89 & increments (num++). So it'll never equal 8, cause infinite loop

(5) Loop Behaviour

```
int n=1;
do{
    printf("%d", n);
    n--;
    if (n->15) continue;
}while (0);
```

Ans:- loop runs once (while(0)) if all after iteration, printing 1.

Ans:- Output → 1

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(6) Logical output

```
printf("%d", 'x' > 'x');
```

Analysis:- ('x' > 'x' is false (ASCII values are equal) so output is 0

(7) Bitwise Operation output

```
for(int x = 40; x >= 0; x -= 3){
    int z = x & (x >> 1);
    if (z) printf("%d", x);
}
```

Analysis:- print x where x & (x>>1) is non-zero.
Valid outputs 7, 6, 3.

(8) Assignment Output:-

```
int x = 10, y = 20, z = 30;
z = x = y;
printf("%d", z);
```

Analysis:- • x = y assigns 20 to x, then z = x assigns 20 to z.

(9) Variable Initialization:-

```
int x = 210;
int y = 0;
printf("%d", y);
```

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Analysis:- printf y=0

(10) Conditional output:-

```
if (a,b,c,d){
        printf ("DTUDSOLVERBO");
    }
```

Ans:- condition evaluate to d=0 (false), so no output.