Question 1: Convert Binary to Decimal/Convert Decimal to Binary

Decimal	Binary
0	0
1	1
2	10
3	11
4	100
7	111
8	1000
10	1010
16	10000
20	10100

Question 2: Convert (A2B)16 to an equivalent decimal number

Solution:

$(A2B)_{16} = (A * 16^2) + (2 * 16^1) + (B * 16^0)$

$= (A * 256) + (2 * 16) + (B * 1) =$

$(10 * 256) + 32 + 11 = 2560 + 43 = 2603 \text{(Decimal number)}$

Type text here

Question 3: Convert $(2603)_{10}$ to an equivalent binary number

2 | 2603

2 |1301 – 1

2 | 650 -- 1

2 | 325 -- 0

2 | 162 -- 1

2 | 81 -- 0

2 | 40 -- 1

2 | 20 -- 0

2 | 10 -- 0

2 | 5 -- 0

2 | 2 -- 1

2 | 1 – 0

2 | 0 – 1

The binary number is $(101000101011)_2$

Question 4: Convert E16 to an equivalent decimal number
Solution:

E * 16^0 = E * 1 = E = 14(Decimal number)

$$(14*16^2)+(1*16^1)+(6*16^0)$$
$$= 3584 + 16 + 6$$
$$= 3606$$

Question 5: Convert $(14)_{10}$ to an equivalent binary number

Solution:

2 |14

2 | 7 – 0

 2 | 3 -- 1

2 | 1 -- 1

2 | 0 -- 1

The binary number is $(1110)_2$

Question 6: Convert $(30)_{16}$ to an equivalent decimal number

Solution:

Given hexadecimal number is $(30)_{16} = (3 * 16^1) + (0 * 16^0)$

$$= 48 + 0 = 48(Decimal\ number)$$

Question 7: Convert $(48)_{10}$ to an equivalent binary number

2 | 48

 2 | 24 -- 0

2 | 12 -- 0

2 | 6 -- 0

2 | 3 – 0

2 | 1 -- 1

2 | 0 – 1

 The binary number is 110000_2

Short Question

1. What is Python?

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

2. Is python a case sensitive language?

Yes! Python is a case sensitive programming language

3. What is the purpose of ** operator?

** Exponent − Performs exponential (power) calculation on operators. 2**3 = 8

4. What is the purpose break statement in python?

break statement − Terminates the loop statement and transfers execution to the statement immediately following the loop.

5. Define Software

– System Software (Operating System): is designed to operate the computer's hardware and to provide and maintain a platform for running applications. It enables us to manage and control its activities. (Microsoft Windows, Apple Mac, Linux).

– Application Software: is designed to help the user perform one or more related specific tasks such as web browsers or word processors cannot run without an operating system.

6. Choose

1) Which of the following is correct about Python?
A - Python is a high-level, interpreted, interactive and object-oriented scripting language.

B - Python is designed to be highly readable.

C - It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

D - All of the above.

Solution D

2)Which of the following statement terminates the loop statement and transfers execution to the statement immediately following the loop?

A - break

B - continue

C - pass

D - None of the above.

Solution A

3) Which of the following statement causes the loop to skip the remainder of its body and immediately retest its condition prior to reiterating?

A - break

B - continue

C - pass

D - None of the above.

Solution B

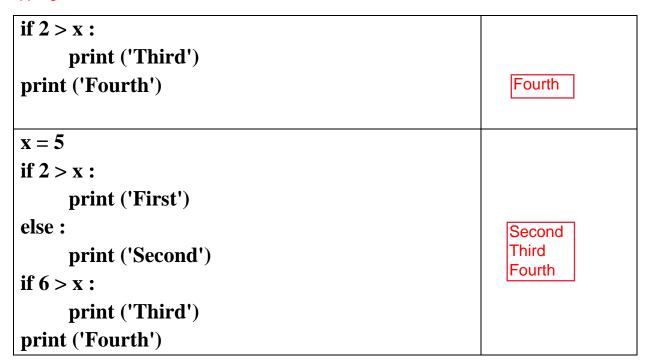**4) what is the output of the following code?**

print (4.0 + 5 * 6)

A- 34

B- 34.0

C- 36

D- 36.0

Solution 34.0

What is printed by the following code?

x = 5 y = x + 3 x = 14 y = 8 z = 10 x = x - 1 z = 10 x = x + z print("X="+x, "y="+y,"z="+z)	
print(14//4, 14%4, 14.0/4)	3 2 3.5
print(2*'No' + 3*'!') NoNo!!! print(2 * ('No' + 3*'!')) No!!!No!!!	
print('how\nis it\nnow') how is it now	
print('2' + '3') 23	

for i in range(3):   Hello again!
          print('Hello again!')   Hello again!
                        Hello again!	

for i in range(4):   0
       1
      print(i**2) 4
               9	

x = 3
 if 2 > x :
      print ('First')
 else :   Second
      print ('Second')
 if 2 > x :
      print ('Third')
      print ('Fourth')	

x = 3
 if 2 > x :
      print ('First')   Second
 else :
      print ('Second')	

X = 3

if 2 > x : **print ('Third')** **print ('Fourth')**	Fourth

x = 5
if 2 > x :
        print ('First')
else :
        print ('Second')
if 6 > x :
        print ('Third')
print ('Fourth')
	Second
	Third
	Fourth

Write the following Programs

1)Print the following

Twinkle, twinkle, little star,

How I wonder what you are!

2) calculate the net salary of an employee after deducting tax

Salary<=1000	No tax
Salary<2000	Tax=0.10
Salary<3000	Tax=0.30
Salary>3000	Tax=0.50

3) calculate the net salary of a sales man after adding Commission

Sales<=1000	No Commission
Sales<2000	Commission =0.10
Sales<3000	Commission =0.30
Sales>3000	Commission =0.50

4) Write a Python program which accepts the radius of a circle from the user and compute the area(area = 3.14*r2)

5) Write a Python program to find whether a given number (accept from the user) is even or odd

6)Write a program which can compute the factorial of a given numbers (e.g.5!=5*4*3*2*1)

7) Write a program which can sum numbers from 1 to 1000

8) Using a variable for length and a variable for width, create a program that will calculate the area of a rectangle, storing it in a variable and outputting the result

9)Write a Python program to create the multiplication table (from 1 to 10) of a number.
Sample output
Input a number: 5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50

10) Write a Python program that accepts three integers and computes the average
11) Write a Python program to convert all units of time into seconds.
12) Write a Python program to swap two variables

13) Write a Python program to print the number of prime numbers which are less than or equal to an given integer

14) Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700

15) **Write a Python program to construct the following pattern, using a nested for loop.**

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

16) **Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.**

17) **write a Python program to construct the following pattern, using One loop.**
```
1
22
333
4444
55555
666666
7777777
88888888
999999999
```

18) **Print the following pattern**
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

19)Print the following pattern

```
1
2 1
3 2 1
4 3 2 1
5 4 3 2 1
```