

Computers Technology and Programming with Python

Name:	
Section :	

2022 -2023

MCQ:

1. Which one of these is application software?

- a) Graphics card
- b) Word processing
- c) Central Processing Unit (CPU)
- d) Hard Disk

2. Which of these is the best description of a transistor?

- a) It takes input data, processes & stores it, and produces output.
- b) It outputs data by using many logic circuits.
- c) It outputs 0 or 1 based on input values and Boolean function
- d) It converts an electrical signal into a 0 or 1 based on the amount of voltage going through it.

3. The smallest unit of data in the computer is ...

- a) Byte
- b) Nibble
- c) MB
- d) bit

4. Which two of these are operating systems?

- a) Linux
- b) Mac OS
- c) Outlook

5. Which two of these are operating systems?

- a) Windows
- b) Netscape Navigator
- c) Linux

6. Which two of the following devices can be used to input data to a computer?



Light pen



Printer



Plotter

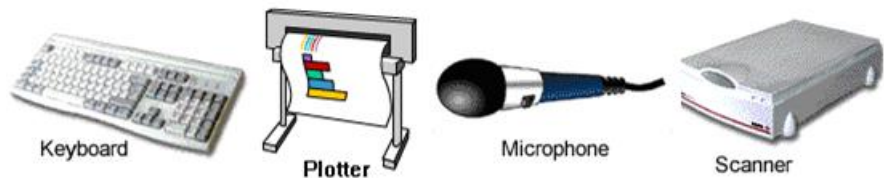


Mouse



Speaker

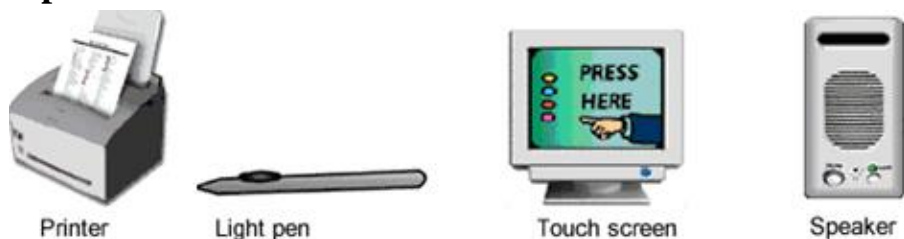
7. Which one of these devices can be used to output data from a computer?



8. Sort these units of data by increasing order of size.



9. Which one of these devices can be used both to input and output data?



10. The speed of a computer CPU can be measured in

- a) Megabytes - Gigabytes
- b) Megahertz - Gigahertz
- c) Megawatts - Giga Watts

11. A Gigabyte is approximately

- a) 100 kilobyte.
- b) 1,000 kilobyte.
- c) 1,000 megabyte

12. Which one of the statements correctly completes the following sentence? A computer's operating system:

- a) doesn't control devices that are connected to PC.
- b) is the hardware the computer uses to run software.
- c) enable all the other programs to run.

13. Which of the following enable a PC to run applications?

- a) Word Processing Software
- b) Operating System Software
- c) Database Software

14. Which one of the following best describes the Internet?

- a) An internal network, using e-mail and Web, within a single organization.
- b) A global network of many networks.
- c) A network that is shared between more than one organization.
- d) A world-wide collection of files connected by links.

15. Which one of these statements about the Internet is false?

- a) It enable computer with different operating systems to exchange data.
- b) It is not controlled by any single organization.
- c) You need a license to publish material on the internet.
- d) It allows computers to share data over large distances.

16. The Internet is the name that is given to:

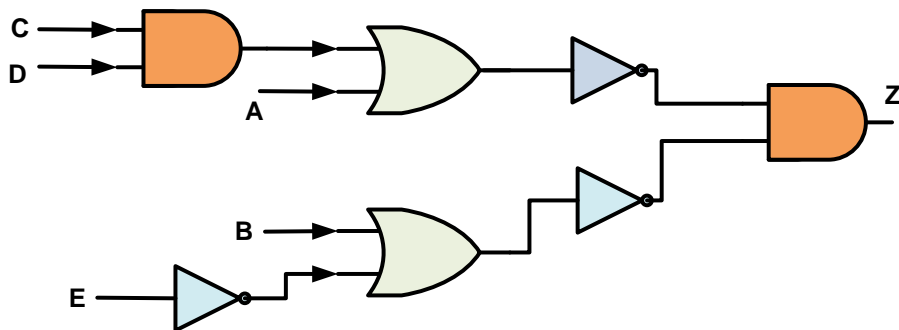
- a) The physical equipment used to connect computer systems all over the world.
- b) The entire linked document that are held on a global network of computer systems.
- c) Linked computers that form a vast global network.
- d) The dedicated telephone lines that permanently connect commercial networks on distant sites

Numbers & logic gates

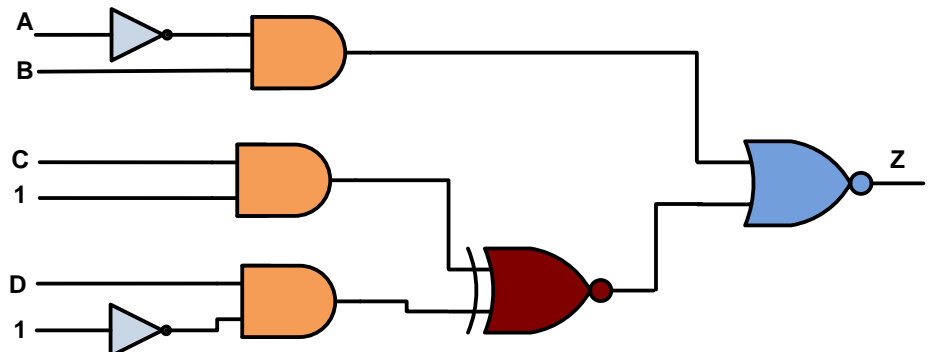
1. Converting 646 to binary and hexadecimal.
2. Given the number is 4CF, what is the binary equivalent?
3. Analyze truth table below, what type of logic gate is it?

A	B	C	X
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

4. Find Z when A=B=0, C=D=E=1, then verify using simulating tool



5. Find an expression for the output Z and determine its value when A=0, B=1, and C=0, then verify using simulating tool



Problem solving

1. What are the problem solving steps?
2. Define Algorithm
3. Determine Algorithm steps
4. Differentiate between compiler and Interpreter.
- 5- Write an Algorithm to convert temperature from Fahrenheit to Celsius

C : temperature in Celsius F : temperature Fahrenheit

- 6- Write an algorithm to find Area & Perimeter of Triangle (when three sides are given)

A : First Side of Triangle, B : Second Side of Triangle, C : Third Side of Triangle, AREA : Area of Triangle, PERIMETER : Perimeter of Triangle

- 7- Write an algorithm to find Area and Perimeter of Rectangle

L : Length of Rectangle, B : Breadth of Rectangle, AREA : Area of Rectangle, PERIMETER : Perimeter of Rectangle

- 8- Write an algorithm to find Area and Perimeter of Square

L: Side Length of Square, AREA: Area of Square, PERIMETER: Perimeter of Square

- 9- Write an algorithm to find the largest of two numbers

- 10- Write an algorithm to find the smallest of two numbers

Python codes

- 1. Write a python program for**

- a. Get the roots of a quadratic equation.
- b. Calculate the factorial of a number 7.

- 2- Write a python program** to calculate the sum of the first 30 positive integer

- 3- Write a python program** to find the solution of the function below:

$$y = \begin{cases} 4x + 5 & x < 3 \\ x^2 + 8 & \text{otherwise} \end{cases}$$

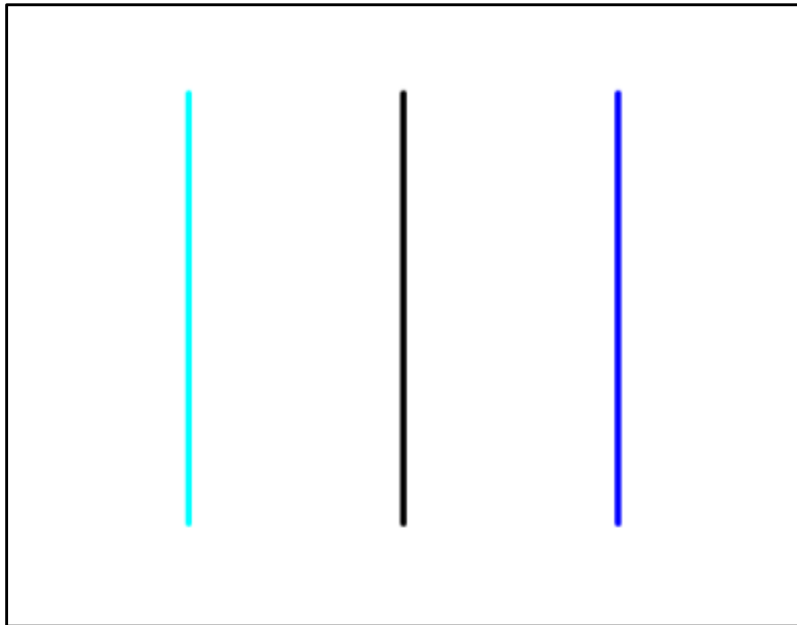
Print the output at x=5

4- **Write a program** to calculate and print the average of the numbers from 3 to 15.

5- **write a python program** to calculate the average of the score of 8 students. Hint: score are [35,20,30,40, 35,20,30,40]

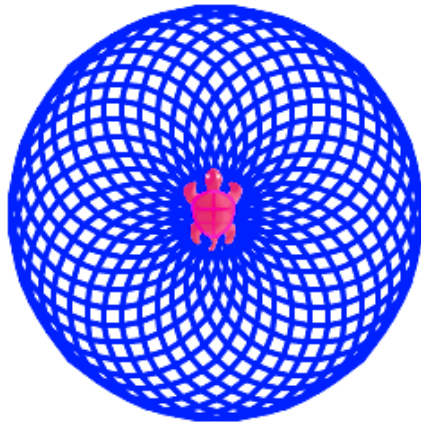
turtle exercises

1. Show how to draw the shape below using turtle python commands

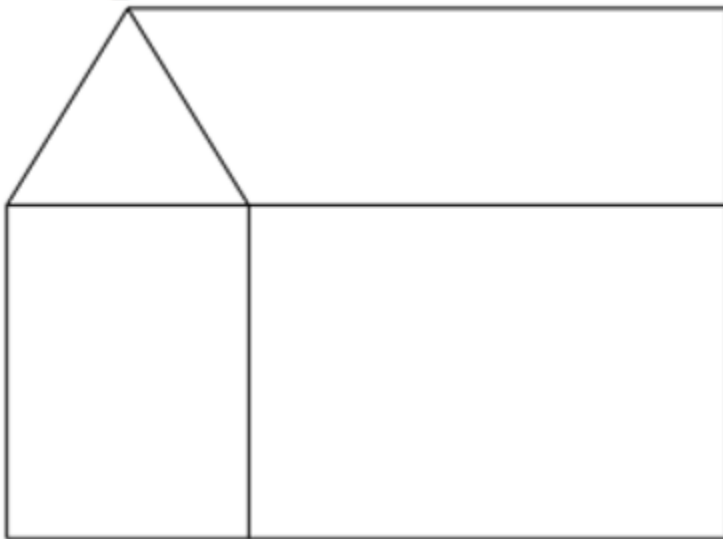


2. Draw the letter Z using turtle, try to draw the letter X and letter E using Turtle.

3. Show how to draw the shape below using turtle python commands

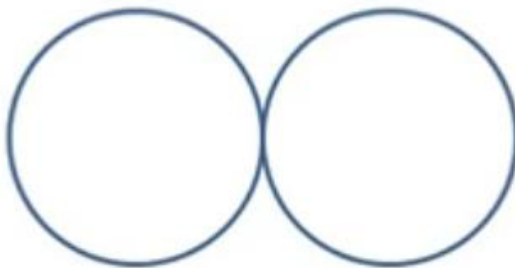


4. Draw the house in Figure below using turtle python



5. Show how to draw the shape below using turtle python commands

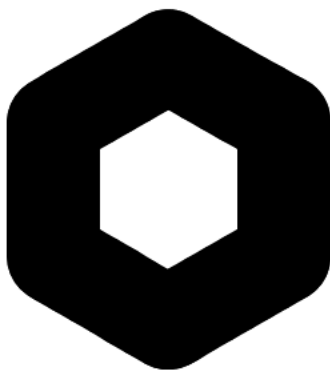
(1)



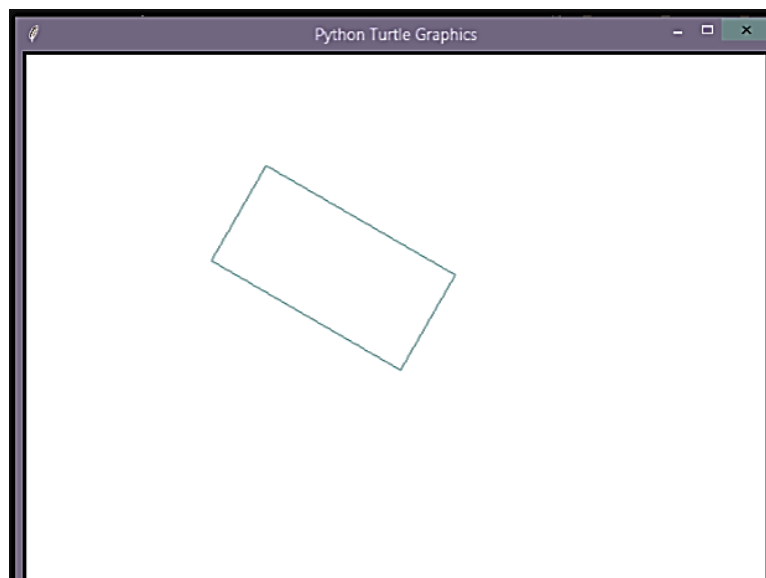
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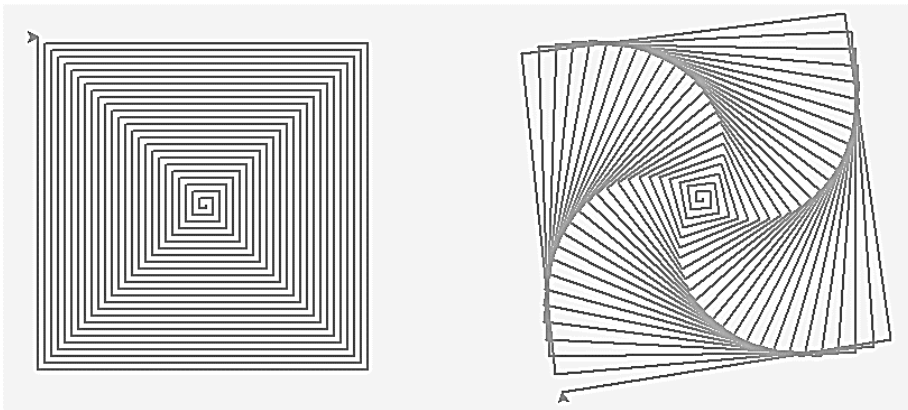
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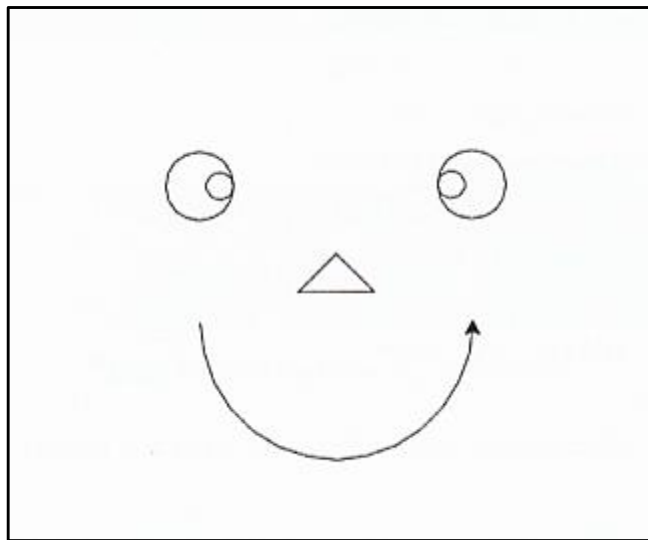
6. Write a program to draw a rectangle inclined to 30 degrees on the computer screen



7. The two spirals in this picture differ only by the turn angle.
Draw both.



8. Write a program to draw the figure below:



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Dr. Heba Gamal