1) Fill in the blanks of the text below. There are 9 blanks and each blank is worth one mark. This question is scored out of 8; a maximum of 9 will be awarded.

Computers store and use data with the binary numeric system. Numbers represented using the system have a base of two. For example, 1011 has a value of _____11_____ in decimal.

The CPU (_____Central Processing Unit_____) is the "heart" of the computer. It has several responsibilities, one of which is carrying out arithmetic operations on data stored in its _____registers_____ .

Machine language is the language of the CPU. It consists of four-byte commands. The first byte represents the _____opcode_____ and the remaining three represent the _____operand_____ .

When a computer is first started, the BIOS (Basic Input-Output System) is loaded from _____ROM_____ into RAM. The computer then looks at the MBR (Master Boot Record) for instructions on how to load the _____operating system_____.

Python is an _____interpreted_____ language, which means that each line of the program is read one at a time, translated into machine language and executed. In contrast, _____compiled_____ languages such as C++ are fully translated before execution; the machine code is usually saved in a file.

2) Examine the following small Python programs.   Determine the values of the variables or the output to the screen at the end of each program's execution. Use quotation marks around string values and decimals for floats. There are 9 variables or outputs and each is worth one mark. This question is scored out of 8; a maximum of 9 will be awarded.

```
x = 2**2 + 2**2
y = bin(x)
```

x: _____8_____

y: _____0b1000_____

```
a = 6 + 3 * 4
b = 18 / 9 - -1 * 2
c = (a - 1) % 5
```

a: _____18_____

b: _____4.0_____

c: _____2_____

```
print("Three primes are 2", \
      "3", sep=', ', \
      end=" & 5")
```

output:

_____Three primes are 2, 3 & 5_____

```
msg = "{0} is {0:.3f}"
msg = msg.format(5.4)
```

msg:

_____5.4 is 5.400_____

```
num = 3
sum = 8

def doSum(aNum):
    sum = aNum + num
    return sum

def main():
    global num
    num = doSum(sum)

main()
```

num: _____11_____

sum: _____8_____

3. a) In 1971 currency in the United Kingdom was "decimalized". Before that, each pound represented 20 shillings and each shilling represented 12 pence.

Write a function `printTotalPence(…)` that has two parameters: one for the number of pounds and one for the number of shillings. This function must calculate the total pence from these values and print it to the screen as follows:

```
The total pence is 540
```

This question is scored out of 4.

```
def printTotalPence(pounds, shillings):
    pence = (pounds * 20) + shillings
    pence = pence * 12
    print("The total pence is", pence)
```

b) Write a `main()` function that asks the user for a number of pounds and a number of shillings. Use these values to call the function `printTotalPence(…)`. Here is the sample output:

```
What is the number of pounds? 2
What is the number of shillings? 5

The total pence is 540
```

This question is scored out of 4.

```python
def main():
    pounds = int(input("What is the number of pounds? "))
    shillings = int(input("What is the number of shillings? "))
    print()
    printTotalPence(pounds, shillings)
```