Short answer questions

Question 1

In the space provided you are to specify the output of the following program.

```
print("t\t\\\n")
print('...')
```

<< Start answer space >>

<< End answer space >>

Question 2

In the space provided you are to specify the output of the following program.

```
num1 = 12345
num2 = 12345.6789
str1 = "Gangnam!"
print("num1=", num1)
print("num1=%d" %num1)
print("%6d-%7.2f%10s" %(num1,num2,str1))
```

<< Start answer space >>

<< End answer space >>

Question 3:

Evaluate the following logic expression being sure to show all the intermediate results.

    NOT ((True AND False) OR (NOT (True OR True)))

Question 4

Canada employs a 'progressive tax' system (primary source: http://www.cra-arc.gc.ca/tx/ndvdls/fq/txrts-eng.html). The following is a modification of the actual tax system. If $10,822 or less then you pay no income tax. Income over $10,822 up to and including 43,561 is taxed at 15%. For income more than $43,561, but not more than $87,123, the tax rate is 22%. For income more than $87,123, but not more than $135,054, the tax rate is 26%. For income is more than $135,054, the tax rate is 29%. For the purposes of this question a person will only be classified into one of the above tax brackets e.g., a person earning $100,000 pays a 26% tax rate. Modify the program below so that it calculates and displays: the amount of tax owed and income after taxes have been deducted.

```
grossIncome = 0
taxesOwed = 0
incomeAfterTaxes = 0

grossIncome = int(input("Enter your yearly income: "))
```

<< **Write your answer here** >>

<< **End of answer space** >>

```
incomeAfterTaxes = grossIncome - taxesOwed
print("Gross income $%d" %grossIncome)
print("<Less tax $%d>" %taxesOwed)
print("Income after taxes $%d" %incomeAfterTaxes)
```

Question 5

(From the University of Calgary calendar 2012 - 2013 Page 338). The prequisites for CPSC 331 are the following: "One of Computer Science 219, 233, 235 [JT: the calendar includes Computer Engineering 339 but for simplicity you can exclude it from this question] and one of Mathematics 217 or 273". Modify the following program so that the message "pre-requisites met" appears if the student has taken the appropriate course and the message and the message pre-requisites not met" otherwise. You can assume that the course information will come in as a string: Computer Science courses will be abbreviated as CPSC, math courses abbreviated as MATH. The format will be as follows <Course name> <Course number> e.g. CPSC 231

```
cpscCourseTaken = input("What Computer course have you taken: ")
mathCourseTaken = input("What Math course have you taken: ")
```

<< **Write your answer here** >>

<< **End of answer space** >>

Question 6

For this question refer to the following program. Assuming that the contents of variables 'n' and 'm' are unknown but positive, then explain how the final value stored in the variable 'a' is related to these two variables.

```
i = 1
j = 1
n = ???
m = ???
a = 0
while (i <= n):
   j = 1
   while (j <= m):
      a = a + 1
      j = j + 1
   i = i + 1
```

Multiple choice questions

1. The UNIX command _____ could be used to see the contents of a file.
   a. cd
   b. ls
   c. more
   d. see
   e. None of the above commands would allow you to view a file.

2. Which of the following lists correctly ranks these devices from *fastest to slowest* in terms of access time?
   a. Processor, Hard drive, RAM
   b. Processor, RAM, Hard drive
   c. Hard drive, Processor, RAM
   d. Hard drive, RAM, Processor
   e. RAM, Hard drive, Processor

3. Which of the following is an example of a solid state storage device?
   a. A hard drive
   b. A DVD-RW drive
   c. A USB flash drive
   d. More than one of the above answers is true
   e. None of the above

4. What would be reasonable CPU clock speed for a new computer that you would buy today?
   a. 1 Hz
   b. 4.0 Hz
   c. 233 MHz
   d. 3 GHz
   e. 1 THz

5. _____ is volatile in the storage of information (lasts so long as power is provided)
   a. Magnetic storage
   b. Optical storage
   c. RAM
   d. Solid state storage devices
   e. None of the above

6. If you have a file that you want to be never retrievable from your hard drive which of the following would suffice?
   a. Putting the file in the recycle bin.
   b. Using 'rm' to delete it.
   c. Putting the file in the recycle bin and then emptying it.
   d. Formatting the drive.
   e. Short of physically the drive there are no guarantees that file is irretrievable.

7. The _____ is the piece of hardware in which most of the other hardware is inserted into.
   a. CPU
   b. Hard drive
   c. Motherboard
   d. RAM
   e. Storage

8. What will be the output of the following program?
   name = input ("Type in your name: ")
   print("Name:", name)

   a. Name name
   b. Name: name
   c. Name: James Tam
   d. Name: James Bond
   e. None of the above selections correctly and completely characterize the output

9. Which operator is used for finding the remainder of a division operation?
   a. *
   b. %
   c. exp()
   d. exponent()
   e. None of the above

How many times will the loops in Question 10 & 11 execute
10.

```
i = 1
while (i <= 7):
    print(i)
    j = 11
```

   a. 9
   b. 10
   c. 11
   d. This loop will never execute
   e. This is an endless loop

11.

```
for i in range (0, 13, 3):
    print (i)
```

   a. 4
   b. 5
   c. 6
   d. 13
   e. 14