CS 1301 Mini-Exam 1 – Answer Sheet

Your Name:_____   **Your TA's Name:** _____ **(5pts)**

A. Please answer multiple choice questions 1 - 20 in the following spaces. Mark you answer by completely filling the circle to the right of the corresponding letter.

1.	A O	B O	C O	D O	E O	11.	A O	B O	C O	D O	E O
2.	A O	B O	C O	D O	E O	12.	A O	B O	C O	D O	E O
3.	A O	B O	C O	D O	E O	13.	A O	B O	C O	D O	E O
4.	A O	B O	C O	D O	E O	14.	A O	B O	C O	D O	E O
5.	A O	B O	C O	D O	E O	15.	A O	B O	C O	D O	E O
6.	A O	B O	C O	D O	E O	16.	A O	B O	C O	D O	E O
7.	A O	B O	C O	D O	E O	17.	A O	B O	C O	D O	E O
8.	A O	B O	C O	D O	E O	18.	A O	B O	C O	D O	E O
9.	A O	B O	C O	D O	E O	19.	A O	B O	C O	D O	E O
10.	A O	B O	C O	D O	E O	20.	A O	B O	C O	D O	E O

B. Please answer True/False questions 21-30 in the following spaces. Mark you answer by completely filling the circle under the corresponding answer.

	True	False			True	False
21.	O	O		26.	O	O
22.	O	O		27.	O	O
23.	O	O		28.	O	O
24.	O	O		29.	O	O
25.	O	O		30.	O	O

31.	32.

33. Python Expression Evaluation (14 points)

Pretend that you are the Python Interpreter (IDLE window). What do you print or return when each of the following statements are entered? What type is it?

Example: **(7+4) / 2**   *Result:*___**5**___   *Type:*___**int**___

Example: **"Hi" * 2**   *Result:*_**"HiHi"**_   *Type:*___**string**___

1. **(7.0 + 4) / 2**   *Result:*_____   *Type:*_____
2. **7 + 3 / 2**   *Result:*_____   *Type:*_____
3. **"Hi" + "Jay"**   *Result:*_____   *Type:*_____
4. **int(5.135)**   *Result:*_____   *Type:*_____
5. **7.0 > 5.0**   *Result:*_____   *Type:*_____
6. **7 + 3 / 2 > 8**   *Result:*_____   *Type:*_____

34. Write the number from the correct definition in the blank next to each term on the left: (14 points)

Terms	Definitions
___Print statement ___Program ___Runtime error ___Semantic error ___Syntax error ___Floating-point ___Integer ___Integer division ___Keyword ___Operator ___Variable ___Function ___function call ___Type conversion	1. A sequence of instructions that specifies to a computer actions and computations to be performed. 2. A reserved word that is used by the compiler to parse a program; you cannot use things like `if`, `def`, and `while` as variable names. 3. An error that does not occur until the program has started to execute but that prevents the program from continuing. 4. An operation that divides one integer by another and yields an integer. It yields only the whole number of times that the numerator is divisible by the denominator and discards any remainder. 5. A name that refers to a value. 6. A Python data type that holds positive and negative whole numbers. 7. A special symbol that represents a simple computation like addition, multiplication, or string concatenation. 8. A format for representing numbers with fractional parts. 9. An explicit statement that takes a value of one type and computes a corresponding value of another type. 10. A named sequence of statements that performs some useful operation. They may or may not take parameters and may or may not produce a result. 11. An error in a program that makes it impossible to parse (and therefore impossible to interpret). 12. An instruction that causes the Python interpreter to display a value on the screen. 13. A statement that executes a function. It consists of the name of the function followed by a list of arguments enclosed in parentheses. 14. An error in a program that makes it do something other than what the programmer intended.

A. Multiple choice questions – fill in the circle corresponding to the correct answer on the answer sheet (page 1). Be sure you double check that you have marked the answer corresponding to the correct number!

1. Which of the following function definitions is correct?

A.	B.	C.	D.

def myFunc():
    print "Hello!"
	define myFunc()
	    print "Hello!"
		def myFunc()
		    print "Hello!"
			define myFunc():
			    print "Hello!"

E. None of the above

2. The following code will print:

```
#assume myFunc is already defined from the previous question
print "Second!"
myFunc()
print "First!"
```

A.	B.	C.	D.
First! Hello! Second!	Hello! First! Second!	Second! Hello! First!	Second! First! Hello!

E. None of the above

3. Grace Hopper was:
   A. A Rear Admiral.
   B. Awarded the "man-of-the-year" award from DPMA in 1969.
   C. Instrumental in the development of COBOL.
   D. Credited for developing the first compiler.
   E. All of the above.

4. John Backus was:
   A. A Rear Admiral.
   B. Awarded the "man-of-the-year" award from DPMA in 1969.
   C. Instrumental in the development of FORTRAN.
   D. Credited for developing the first compiler.
   E. None of the above.

5. Spacewar, perhaps the worlds first computer game, was created in 1962:
   A. At CMU
   B. At MIT
   C. At Stanford

D. At Harvard

E. At both B & D in collaboration

6. Douglas Engelbart demonstrated the worlds first _____ in 1964 at Stanford.

A. Transistorized Computer

B. Mouse

C. Solid Sate Memory

D. Tape Drive

E. Transistor

7. The Intel 1103 (developed in 1970) was the worlds first commercially available:

A. Transistorized calculator

B. Robot

C. Micro-controller

D. Dynamic Memory chip

E. Personal Computer

8. The Intel 4004 (developed in 1971) was the worlds first commercially available:

A. Transistorized calculator

B. Robot

C. Microprocessor

D. Dynamic Memory chip

E. Personal Computer

9. Robert Metcalfe developed Ethernet at Xerox in 1973 which allowed multiple computers to talk to:

A. Each other

B. A compiler

C. A Laser Printer

D. A&B

E. A&C

10. The software that really kick-started the personal computer market was:

A. VisiCalc

B. Word Perfect

C. Microsoft DOS

D. Spacewars

E. Pong

11. Ada Lovelace is widely regarded as the first:
A. Computer Scientist
B. Programmer
C. Compiler
D. Discrete Mathematician
E. None of the above

12. The first operating freely programmable electro-mechanical computer was the:
   A. UNIVAC I
   B. Z1 Computer
   C. Harvard Mark I
   D. Colossus Mark I
   E. ENIAC 1

13. ENIAC 1 (Electronic Numerical Integrator and Computer) required an electrical supply of:
   A. 1 kWh
   B. 10 kWh
   C. 50 kWh
   D. 150 kWh
   E. 200 kWh
(Note: A typical American home uses an average of 1 kWh of power)

14. The toxic element mercury was used by the UNIVAC I in its:
   A. Memory delay lines
   B. Tape Drives
   C. Vacuum Tubes
   D. Console
   E. UNIVAC I did not use mercury.

15. Order the appearance of the following computers based upon the year they were first designed (earliest first):

1. UNIVAC I   2. Difference Engine   3. Z1   4. Apple Macintosh   5. PDP-1

   A. 1, 5, 3, 4, 2

B. 2, 3, 1, 5, 4
C. 2, 1, 3, 5, 4
D. 2, 3, 4, 5, 1
E. 3, 1, 5, 4, 2

Refer to the following code for questions 16-18:

```
print "Good Morning!"

def repPrint( text, num):
  print text * num

def area( radius ):
  a = 3.14159 * radius **2
  repPrint( a, 2)
  return( a )

a = 10
b = area( a )
repPrint("All Done!", 2)
```


16. After the code above is executed, the variable **b** will point to:
A. The int 314
B. The float 314.159
C. The int 10
D. The int 3
E. The float 3.14159

17. After the code above is executed, the variable **a** will point to:
A. The int 314
B. The float 314.159
C. The int 10
D. The int 3
E. The float 3.14159

18. When the code above is executed, it will print the following:

A.	B.	C.	D.
Good Morning!	Good Morning!	Good Morning!	Good Morning!

628.318 All Done!All Done!	314.159314.159 All Done!All Done!	3.14593.1459 All Done!All Done!	314.159314.169 All Done!All Done!

E. None of the above

19. The decimal number { 23 }$_{10}$ is what binary (base 2) number?
A. 11111   B. 10101   C. 10100   D. 10111   E. None of these.
20. The binary number { 1101110 }$_2$ is what decimal (base 10) number?
A. 101   B. 111   C.   102   D. 110   E. 112

B. True/False questions – fill in the circle corresponding to the correct answer on the answer sheet (page 1). Be sure you double check that you have marked the answer corresponding to the correct number!
21. The *Spirit* and *Opportunity* mars rovers were expected to last about 90 days.
22. A robot is a mechanism guided by automatic controls.
23. The first commercial robot company, Unimation was created in 1979.
24. You can name your robot using the nameRobot( ) function.
25. Python gets its name from *Monty Python's Flying Circus.*
26. If you want to make your robot wait, you can use the pause() function.
27. You can create and use your own modules simply by saving a file with a .py extension (such as moves.py) and then importing it with *from moves import *.*
28. In Python, you can use a semicolon (;) to separate two commands on the same line.
29. The speak() function will generate audible speech from a string.
30. Proprioception refers to external sensors.

C. Write Code!
31. Write a function named "area_of_box" (without the quotes) that takes three parameters (which must be named *length*, *width*, and *height*) specifying the dimensions of a box. Your function should calculate and return the volume of the box. Write your function in box 31 on the answer sheet (page 1).

32. Write a function named EvenOrOdd that takes one parameter which you can assume is a positive integer. Your function should return a 1 if the number is odd, or a zero if the number is even. Write your function in box 31 on the answer sheet (page 1). *Hint, you may want to use the modulo (%) operator.*