**ICS 3C – FINAL EXAM**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**TEACHER : Mr. Rankin**

**DATE : Monday June 24, 2019 LENGTH : 2 hours**

**PAGES : 9 TOTAL MARKS : 100**

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| --- |
| **This EXAM is OPEN BOOK. You may use your notes and a calculator. ABSOLUTELY NO OTHER ELECTRONIC DEVICES MAY BE USED.** |

**PART A – MULTIPLE CHOICE** – Circle THE BEST answer for each of the following: **<14 MARKS>**

1. A computer program:

A) is a collection of instructions that performs a specific task when executed by a computer

B) often referred to as “code”

C) is the same as software

D) all of the above

2. The decimal numbering system has:

A) two possibilities: 0 or 1 B) eight possibilities: 0 to 7 inclusive

C) ten possibilities: 0 to 9 inclusive D) none of the above

3. A computer virus is software that:

A) enables a user to obtain covert information about another's computer activities by transmitting

data covertly from their hard drive

B) is capable of copying itself and typically has a detrimental effect, such as corrupting the system

or destroying data

C) is designed to breach the security of a computer system while seemingly performing some

simple function

D) displays or downloads advertising material (often unwanted) when a user is online

4. A Trojan horse is:

A) is designed to breach the security of a computer system while seemingly performing some

simple function

B) displays or downloads advertising material (often unwanted) when a user is online

C) enables a user to obtain covert information about another's computer activities by transmitting

data covertly from their hard drive

D) is capable of copying itself and typically has a detrimental effect, such as corrupting the

system or destroying data.

5. “Cookies”:

A) provide a way for a website to recognize you and keep track of your preferences

B) are created by a website that is stored in the user's computer either temporarily for that

session only or permanently on the hard disk

C) usually help speed up web browsing

D) all of the above

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6. A touch-screen is an example of:

A) an input device B) an output device

C) a primary-storage device D) a device that is used for both input and output

7. A computer “hacker” is:

A) another name for a ”programmer” B) a tool used to open the case that holds the CPU

C) someone who smokes too much D) none of the above

8. A system designed to prevent unauthorized access to or from a private network is:

A) a disk defragmenter B) a firewall C) malware D) recovery software

9. A standalone computer program that replicates itself in order to spread to other computers is called a:

A) virus B) worm C) hacker D) cookie

10. A Boolean value:

A) is a specific type of integer B) is either True or False

C) does not exist D) causes a logic error

11. In Python, to determine if a value is not equal to another value, you would use the comparison

operator:

A) **==** B) **<=** C) **!=** D) **>=**

Use the following program to answer questions 12 to 14:

|  |
| --- |
| **def main():**  **k = input(“Enter a number: ”)**  **k = int(k)**  **if k > 100:**  **k = 110**  **else:**  **k = k + 10**  **k = 200**  **print(k)**  **main()** |

12. If the user entered 100 when prompted to do so, the program would:

A) print the value 100

B) stop execution with a runtime error since the equation **k = k + 10** does not make sense

C) print the value 110

D) print the value 200

13. If the user entered -1 when prompted to do so, the program would:

A) print the value 100

B) stop execution with a runtime error since k cannot be a negative value

C) print the value 110

D) print the value 200

14. If the user entered 1000 when prompted to do so, the program would:

A) print the value 100

B) stop execution with a runtime error since k cannot be a value that large

C) print the value 110

D) print the value 200

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**PART B – Matching** – put the letter of the term in the blank that best matches the description

**<16 MARKS>**

|  |  |
| --- | --- |
| **Description**  \_\_\_\_\_\_ where the CPU, video card, RAM are “plugged into”  \_\_\_\_\_\_ some common output devices  \_\_\_\_\_\_ a group of computers that can communicate with each  other and can share data, resources and devices  \_\_\_\_\_\_ fast memory that is only present when the computer is  running  \_\_\_\_\_\_ will stop the execution of the program – usually a typo, a  spelling mistake etc.  \_\_\_\_\_\_ where you save files, data, programs etc. to use later  \_\_\_\_\_\_ the physical components of a computer  \_\_\_\_\_\_ some common secondary storage devices  \_\_\_\_\_\_ the “brain” of the computer  \_\_\_\_\_\_ the study of using computers to solve problems.  \_\_\_\_\_\_ two major elements that make up a computer  \_\_\_\_\_\_ will not stop the execution of the program, but will cause  incorrect or unexpected results  \_\_\_\_\_\_ a set of instructions that enable the computer to  accomplish a task  \_\_\_\_\_\_ a group of wires that connect various computer  Components  \_\_\_\_\_\_ some common input devices  \_\_\_\_\_\_ displays or downloads advertising material (often  unwanted) when a user is online | **Term**  A. logic error  B. motherboard  C. network  D. hardware and software  E. Central Processing Unit  F. bus  G. monitor, printer, speaker  H. adware  I. software  J. Computer Science  K. keyboard, mouse, microphone  L. syntax error  M. secondary storage  N. hardware  O. random access memory  P. USB stick, hard drive, SD card |

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**PART C – TRUE or FALSE** – circle the correct response **<16 MARKS>**

|  |  |
| --- | --- |
| 1. A “comment” in Python is used to print out a string.  2. In Python, a variable can store an integer, a decimal number, or a string, and  then be used to store a completely different data type in the same program.  3. The variable name: **2ndlast** is a valid Python variable name  4. An “if” structure is used to make decisions regarding which block(s) of code will  be executed in Python.  5. A “for” loop is used to repeat a block of code in Python zero or more times.  6. A “while” loop is used to repeat a block of code in Python zero or more times.  7. In a Python program in an “if…else…” block, either the “if” block or the “else”  block will be executed, but not both.  8. **Internal** documentation refers to things like a user’s manual that tells the user  how to operate the software.  9. You should use the same password for most of your applications, so that it is  more likely that you will remember it.  10. The body of a loop structure in Python is always executed at least once.    11. The input statement:  **d = input(“Type [C] to [C]ontinue or [E] to [E]xit:”)** is not  as user-friendly as: **d = input(“Type Continue or Exit:”)**  12. In a Python List, you can only have one data type per list.  13. In Python, a programmer can design their own functions.  14. In Python, keyboard input is **always** initially a string.  15. If **a = “fat”** and **b = “cat**” then the statement **c = a + b** would  produce an error message.  16. When comparing string values, **“A”** is not equal to **“a”**. | **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE**  **TRUE FALSE** |

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**PART D – PROGRAMMING FUNCTIONS AND METHODS** – fill in the box to indicate what would be

outputted to the screen as a result of each “print” statement. **<15 MARKS>**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **def main():**  **n = 15**  **r = 3.14**  **w = “on here right now???”**  **st = “What is going”**  **a = [5,8,1,3,7,2,4,8]**  **a2 = [3,7,7,3,9,0,1,6,7,8,2]**  **x = [“cat”,”dog”,”rat”,”fish”]**  **y = [“Sue”,”Ted”,”Bob”,”Jan”,”Rex”]**  **y.sort()**  **z = st + “ ” + w**  **print(n) ## -------­­­-----------🡪**  **print(“n”) ## ------------------🡪**  **print(r) ## ------------------🡪**  **print(len(st))## ------------------🡪**  **print(st[1]) ## ------------------🡪**  **print(a[5]) ## ------------------🡪**  **print(w[8:]) ## ------------------🡪**  **print(st[:5]) ## ------------------🡪**  **print(len(a)) ## ------------------🡪**  **print(y) ## ------------------🡪**  **print(z) ## ------------------🡪**  **print(x[3]) ## ---------------­­­---🡪**  **print(len(w)) ## ------------------🡪**  **print(w) ## ------------------🡪**  **print(n + r) ## ------------------🡪**  **main()** | Put the values that would be printed in each  box:   |  | | --- | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |

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**PART E – PROGRAMMING TERMINOLOGY** – place the following terms in the correct blanks.

**<8 MARKS>**

**TERMS:** string, accumulator, parameters, list,

loop control variable, function, counter, arguments

**def getavg(m): ## getavg is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**t = 0 ## t is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**i = 0**

**c = 0 ## c is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**while i < 4:**

**t = t + m[c]**

**c = c + 1**

**i = i + 1**

**a = t / c**

**return(a)**

**##---------------------------------------------------------------------------**

**def printstats(name,marks,semavg): ## name, marks and semavg are all**

**print(name, "Marks -> ") ##**

**## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**for x in range(len(marks)):**

**print(marks[x],end = " ") ## x is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**print("Semester Average: ",semavg)**

**print("OVERALL RESULT.....")**

**if semavg >= 80:**

**print("Honour Roll")**

**elif semavg >= 50:**

**print("Passed")**

**else:**

**print("Failed")**

**##---------------------------------------------------------------------------**

**def main():**

**s = "Carl" ## s stores a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**y = [88,62,75,82] ## y stores a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**avg = getavg(y)**

**printstats(s,y,avg) ## s, y and avg are all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**main()**

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**PART F – PROGRAMMING TRACING** – Trace through the following program. Record the values

stored in RAM and determine and state the output

generated. **<11 MARKS>**

|  |  |
| --- | --- |
| **def myfct(a,b):**    **c = a + b**  **return(c)**  **#---------------------**  **def main():**  **k = 10**  **m = 2**    **for i in range(3):**  **if k > 10:**  **m = m + 1**  **else:**  **m = m + 3**    **k = k + 5**  **print(m)**  **val = myfct(k,m)**  **print(val)**    **main()** | **RAM** |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | k | m | i | a | b | c | val | |  |  |  |  |  |  |  | |
| **SCREEN OUTPUT** |
|  |

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**PART G – PROGRAMMING**

You work for a small fast food establishment, and you have been asked to write a PAYROLL PROGRAM. You must write a complete PYTHON program to: **<20 MARKS>**

* prompt the user to input an employee name from the keyboard, or enter the letter “Q” to QUIT the program
* the user must enter one of 3 job titles – the possible job titles and the pay for each are as follows:

|  |  |
| --- | --- |
| **Job Title** | **Hourly Rate of Pay** |
| Counter Server | $15.25 |
| Drive Through Attendant | $14.85 |
| Boss | $27.75 |

* the user must enter the number of hours the employee worked
* the program must calculate and output the employee name, job title and net pay
* the program must keep processing more employees until the user decides to quit

For example, If Rex Ryan is a Counter Server who worked 25 hours, the PAYROLL output should look something like:

PAYROLL INFORMATION

====================

EMPLOYEE NAME: Rex Ryan

JOB: Counter Server

NET PAY: $381.25

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