Select the letter of the most appropriate answer and completely shade in the corresponding region on the anser sheet.
If no answer seems appropriate then completely shade in region $E$ on the answer sheet.
Python 3.10.0 was used to generate code in the questions.

1) The instruction set for a microprocessor is unique and is typically understood only by the microprocessors of the same brand.
A) True
B) False
2) The CPU understands instructions written in a binary machine language.
A) True
B) False
3) A bit that is turned off is represented by the value -1.
A) True
B) False
4) The main reason to use secondary storage is to hold data for long periods of time, even when the power supply to the computer is turned off.
A) True
B) False
5) RAM is a volatile memory used for temporary storage while a program is running.
A) True
B) False
6) Programs are commonly referred to as
A) software
B) utility programs
C) application software
D) system software
7) Where does a computer store a program and the data that the program is working with while the program is running?
A) in secondary storage
B) in main memory
C) in the CPU
D) in the microprocessor
8) What type of volatile memory is usually used only for temporary storage while running a program?
A) ROM
B) TMM
C) TVM
D) RAM
9) Which language is referred to as a low-level language?
A) Python
B) $\mathrm{C}+$
C) Java
D) Assembly language
10) The disk drive is a secondary storage device that stores data by $\qquad$ encoding it onto a spinning circular disk.
A) electrically
B) digitally
C) magnetically
D) optically
11) $A$ $\qquad$ has no moving parts and operates faster than a traditional disk drive.
A) hyper drive
B) DVD drive
C) jumper drive
D) solid state drive
12) What is the largest value that can be stored in one byte?
A) 8
B) 65535
C) 255
D) 128
13) What is the decimal value of the following binary number? 10011101
A) 28
B) 157
C) 156
D) 8
14) According to the behavior of integer division, when an integer is divided by an integer, the result will be a float.
A) True
B) False
15) A flowchart is a tool used by programmers to design programs.
A) True
B) False
16) Since a named constant is just a variable, it can change any time during a program's execution.
A) True
B) False
17) What is the informal language, used by programmers use to create models of programs, that has no syntax rules and is not meant to be compiled or executed?
A) pseudocode
B) source code
C) flowchart
D) algorithm
18) $A(n)$ $\qquad$ is a diagram that graphically depicts the steps that take place in a program?
A) flowchart
B) pseudocode
C) algorithm
D) source code
19) Which mathematical operator is used to raise 5 to the second power in Python?
A) \&
B) *
C) /
D) ~
20) After the execution of the following statement, the variable sold will reference the numeric literal value as (n)
$\qquad$
sold $=256.752$
A) float
B) currency
C) $s t r$
D) int
21) After the execution of the following statement, the variable price will reference the value $\qquad$ . price $=$ int (68.549)
A) 69
B) 68.6
C) 68
D) 68.55
22) What is the output of the following command, given that value1 $=2.0$ and value $2=12$ ?
print (value1 * value2)
A) 24
B) 2.0 * 12
C) value1 * value2
D) 24.0
23) The if statement causes one or more statements to execute only when a Boolean expression is true.
A) True
B) False
24) Expressions that are tested by the if statement are called Boolean expressions.
A) True
B) False
25) When using the $\qquad$ logical operator, one or both of the subexpressions must be true for the compound expression to be true.
A) maybe
B) not
C) $o r$
D) and
26) Which of the following is the correct if clause to determine whether $\mathbf{y}$ is in the range $\mathbf{1 0}$ through $\mathbf{5 0}$, inclusive?
A) if $y>=10$ and $y<=50$ :
B) if $y>=10$ or $y<=50$ :
C) if $10>y$ and $y<50$ :
D) if $10<y$ or $y>50$ :
27) What is the result of the following Boolean expression, given that $\mathbf{x}=5, \mathbf{y}=3$, and $\mathbf{z}=\mathbf{8}$ ?

## $\mathbf{x}<\mathbf{y}$ or $\mathbf{z}>\mathbf{x}$

A) False
B) 5
C) 8
D) True
28) What is the result of the following Boolean expression, given that $\mathbf{x}=5, \mathbf{y}=3$, and $\mathbf{z}=\mathbf{8}$ ?
$x<y$ and $z>x$
A) 8
B) 5
C) False
D) True
29) What does the following expression mean?
$\mathbf{x}<=\mathbf{y}$
A) $x$ is less than or equal to $y$
B) $x$ is less than $y$
C) $\mathbf{x}$ is greater than $y$
D) $\mathbf{x}$ is greater than or equal to $y$
30) When using the $\qquad$ logical operator, both subexpressions must be true for the compound expression to be true.
A) not
B) either or or and
C) $o r$
D) and
31) Reducing duplication of code is one of the advantages of using a loop structure.
A) True
B) False
32) A good way to repeatedly perform an operation is to write the statements for the task once and then place the statements in a loop that will repeat as many times as necessary.
A) True
B) False
33) What are the values that the variable num contains through the iterations of the following for loop?
for num in range(4):
A) $0,1,2,3,4$
B) $1,2,3,4$
C) $1,2,3$
D) $0,1,2,3$
34) What are the values that the variable num contains through the iterations of the following for loop? for num in range (2, 9, 2):
A) $1,3,5,7,9$
B) $2,4,6,8$
C) $2,3,4,5,6,7,8,9$
D) $2,5,8$
35) $\qquad$ is the process of inspecting data that has been input into a program in order to ensure that the data is valid before it is used in a computation.
A) Correcting data
B) Input validation
C) Data validation
D) Correcting input
36) When will the following loop terminate?
while keep_on_going ! = 999:
A) when keep_on_going refers to a value greater than 999
B) when keep_on_going refers to a value less than 999
C) when keep_on_going refers to a value equal to 999
D) when keep_on_going refers to a value not equal to 999
37) Which of the following represents an example to calculate the sum of numbers (that is, an accumulator), given that the number is stored in the variable number and the total is stored in the variable total?
A) total $=$ number
B) total + number = total
C) number $+=$ number
D) total $+=$ number
38) What will be displayed after the following code is executed?
total $=0$
for count in range (1,4):
total += count
print (total)
A) 5
B) 14
C) 6
D) 1

3
6
39) What will be displayed after the following code is executed?
for num in range ( $0,20,5$ ):
num $+=$ num
print (num)
A) 51015
B) 30
C) $0510 \quad 15 \quad 20$
D) 25
40) What does the following program do?

```
student = 1
while student <= 3:
    total = 0
    for score in range(1, 4):
            score = int(input("Enter test score: "))
            total += score
    average = total/3
    print("Student ", student, "average: ", average)
    student += 1
```

A) It accepts 3 test scores for each of 3 students and outputs the average for each student.
B) It accepts one test score for each of 3 students and outputs the average of the 3 scores.
C) It accepts 4 test scores for 3 students and outputs the average of the 12 scores.
D) It accepts 4 test scores for 2 students, then averages and outputs all the scores.

1) $A$
2) $A$
3) $B$
4) $A$
5) $A$
6) $A$
7) $B$
8) $D$
9) $D$
10) C
11) D
12) $C$
13) C
14) B
15) $A$
16) B
17) $A$
18) $A$
19) $B$
20) A
21) C
22) $D$
23) A
24) A
25) C
26) A
27) D
28) C
29) A
30) D
31) A
32) $A$
33) $D$
34) B
35) B
36) C
37) D
38) C
39) B
40) A
