**“ALA-TOO” INTERNATIONAL UNIVERSITY**

**IT & BUSINESS COLLEGE**

**Department of Computer Systems and Complexes**

**State Exams Program 2023-2024**

**HTML and CSS, Python, Algorithms**

Q-1. What is the purpose of the <head> element in an HTML document?

Q-2. What is the purpose of the <body> element in an HTML document?

Q-3. How do you make each word in a text start with a capital letter?

Q-4. How can we add a CSS rule to the HTML document? Write down three types of CSS.

Q-5. Compare display:inline and display:block.

Q-6. How Does CSS3 Support The Responsive Web Designing?

Q-7. What Is A CSS Selector? Q-8. What Is An ID Selector?

Q-9. What Is A Class Selector?

Q-10. What Is The Difference Between An ID Selector And The Class Selector? Q-11. What Are Child Selectors In CSS?

Q-12. How Do You Make Border Rounded With CSS3?

Q-13. Write a CSS rule to make the background image repeat along the vertical axis. Q-14. Describe how to convert default numbered list to letters or roman numerals. Q-15. Describe how to convert default bulleted list to square or disk.

Q-16. What Is CSS Box Model And What Are Its Components? Q-17. How do you group selectors? Describe.

Q-18. How Do You Add Comments In CSS and in HTML?

Q-19. Compare span element and p element.

Q-20. In the Box Model what is the full size of an element's height?

Q-21. What is the outermost area of a CSS Box model? Explain.

 Q-22. What is the correct HTML for creating a hyperlink? Explain.

Q-23. What is the correct format for the image path of the background-image property?

Q-24. Describe target=\_blank.

Q-25. What is the element's full height with the following styles? div {height: 300px; padding: 4px; border: 2px dashed green; margin:2px;}

Q-26. What is a media query in CSS?

Q-27. What is the purpose of the !important rule in CSS?

Q-28. What is the purpose of the :hover pseudo-class in CSS?

Q-29. Why is it important to use semantic HTML?

Q-30. What is the purpose of the background property in CSS?

**Python Programming questions**

 1. Which symbols cannot surround a string literal?

a) Double quotes

b) Triple quotes

c) Backslashes

d) Single quotes

2. What is the value of c.

a = 10

b = 20

c = 30

a = c

b = a

d = c

c = a

a) 0

b) 10

c) 20

d) 30

3. What will happen if you mention a variable without initial assignment?

a) InvalidError exception

b) Python will prevent typing such variable

c) Python will bite you

d) NameError exception

4. Look at the variables defined below:

a = 50

b = 5

c = 10

Put the lines in the correct order to reach the following results:

a=5

b=50

c=5

a) c = b

b = a

a = c

b) b = a

c = b

a = c

c) b = a

a = c

c = b

d) a = c

b = a

c = b

5. What variable name is not acceptable?

a) my\_name

b) 50cent

c) \_joke

d) gr8

6. Why do we need variables? What is the main reason to use them in programs?

a) We need variables to make code more complex and redundant.

b) We must use variables when calculating really large numbers.

c) We use variables to store values and access them by name later.

d) Variables typically make code less comprehensible.

7. If we execute the following code, a value of which data type will be stored in the variable b?

a=”Tuesday”

b=10

a=b

b=a

In other words, if we call **print(type(b))** after executing the code, which type will be printed?

a) str

b) None (the variable will not be defined)

c) float

d) int

8. What will the program do when running into the following line of code?

input(‘Say “hi”:’)

a) Print “hi” and continue executing code

b) Wait till the user presses any key

c) Wait for the user to write “hi”

d) Print Say “hi” and wait till the user presses Enter

9. Let's say we read a user's input:

**user\_inp=input()**

Which data type(s) can be now contained in the variable **user\_inp**?

a) String

b) Boolean

c) Integer number

d) Float number

10. Which line of code reads the user input and returns it in a program as an integer number?

a) **int(input())**

**b) input()**

**c) print(input())**

**d) str(input())**

11. What does the **input()** function do?

a) Reads some data from the user and returns it in a program as an integer number.

b) Reads some data from the user and returns it in a program as a string.

c) Reads some data from the user and prints it.

d) Reads some data from the user and returns it in a program as a float number.

12. When does the **input()** function stop waiting for user input?

a) After 1 hour of waiting.

b) After the user presses "Esc".

c) Never.

d) Once the user presses "Enter".

13. What will be the output for the following piece of code?

print("Enter a number: ")

user\_num = input()

# user enters 10

print(user\_num + user\_num)

a) 1010

b) Error

c) 20

d) user\_num + user\_num

14. What is a user input?

a) A message shown to the user by the computer.

b) Some data the computer receives from the user.

c) Some data the computer prints to the user.

d) The name of the user.

15. We applied the function len() to a list. What does the returned number stand for?

a) How many different data types there are in the list.

b) How many unique elements there are in the list.

c) How many elements there are in the list.

d) The index of the last element in the list.

16. How to create a list containing numbers?

a) "1 2 3 4 5"

b) [1, 2, 3, 4, 5]

c) {1, 2, 3, 4, 5}

d) (1, 2, 3, 4, 5)

17. There's a variable **hidden**, which contains a list. Count the number of elements in this list and print the number.

# the following line reads the input and converts it into a list; do not modify it, please

**hidden = list(input())**

a) **print(len(hidden))**

**b) print(hidden)**

**c) len(hidden)**

**d) input(hidden)**

18. Which is incorrect way to create a new list in Python?

**a) list()**

**b) list[123]**

**c) ["1", "2", "3"]**

**d) [7, "wonders"]**

19. With which datatype the **len()** function can be used with?

a) a list

b) an integer

c) a Boolean

d) a float

20. Guess what happens when we run the code below:

boat=[1,2,3,’dog’]

print(boat[4])

a) boat[4]

b) 1

c) 'dog'

d) IndexError

21. What lines are correct and **do not** throw an error?

Remember that the first square brackets denote a list, and all the rest ones include indices.

a) [1, 2, 3, 4][-4]

b) [1, 2, 3][-4]

c) [1, 2, 3, 4][5]

d) [1, 2, 3, 4][4]

22. What is the index of b in word ‘alphabet’?

a) 2

b) 3

c) 4

d) 5

23. Which line of code will cause an error?

**fruits = ["apple", "pear", "orange", "mango", "peach"]**

**a) print(fruits[0])**

**b) print(fruits[-5])**

**c) print(fruits[5])**

**d) print(fruits[4-2])**

24. What is the syntax for accessing an element of a list by an index?

a) **index(list)**

**b) list[index]**

**c) list(index)**

**d) list.element(index)**

25. What is the index of number 991?

**prices =[170, 309, 224, 991, 4000]**

a) 1

b) 2

c) 3

d) 4

26. What is the result of the following Python expression?

**print(((3 + 5) // 2 \* 2 \*\* 3) % 7)**

a) 1

b) 2

c) 3

d) 4

27. Which arithmetic operation **doesn't** have its own operator in Python?

a) The remainder of division

b) Square root

c) Division

d) Raising to power

28. What will happen if you divide any number by zero in Python?

a) undefined

b) ZeroDivisionError exception

c) 0

d) InvalidOperation exception

29. What will be the boolean value of the following expression? Write the result.

**not None or 1**

a) True

b) False

c) None

d) None of them

30. Assuming that variables have the following boolean values:

**a = True**

**b = False**

**c = a and not b**

Enter the result of evaluating the expression:

 **a and (not c or b)**

a) True

b) False

c) None

d) None of them

**Computer Systems Architecture:**

1. What is the difference between HDD and SSD? What are the advantages of HDD over SSD and vice versa?
2. What is the most common amount of RAM used? What is the reason for this?
3. What is retracing? What is it used for? How can I determine if my video card can retrace?
4. What are processor cores? What is the difference between a thread and a core?
5. How to choose the right power supply unit? What should I pay attention to?
6. What are the specs of the video cards you can name?
7. Processor socket, what is it? What does it affect?
8. Generations of RAM, what are they? Which are the most common now?
9. What is the frequency responsible for? What is the resting frequency and the load frequency?
10. How to choose the right RAM?
11. What types of monitor connection ports can be on a video card?
12. How does the HDD work?
13. How to choose the right enclosure? What should I pay attention to?
14. SATA SSD and M.2 SSD what is the difference?
15. What is the difference between a cooler and water cooling? Principles of operation of both devices
16. What is thermal paste and why do I need it when installing a processor?
17. What are the different motherboard form factors? How to choose the right one for your computer?
18. What are the different types of storage device interfaces (e.g. SATA, NVMe)? How do they differ and which one should I choose?
19. What is overclocking a computer and how can it affect its performance?
20. What types of USB connectors are there? Which one is the most common?
21. What is a GPU and what is it responsible for in a computer?
22. What are the different types of operating systems for personal computers? Which one should I choose?
23. How do I know the compatibility of components when assembling a system unit?
24. What are the different types of connectors on the back of the system unit? What devices can be connected to each of them?
25. What is PCI Express and what is it used for in a system unit?