

ARMY PUBLIC SCHOOL SHILLONG
ANNUAL EXAMINATION 2022-23
CLASS XI
Computer Science (Code 083)

Time allowed: 3.00 Hrs.

Maximum Marks: 70

General instructions:

- (i) *All the Questions are compulsory.*
- (ii) *Number written at the right margin indicates the Marks.*
- (iii) *Programming Language is "Python"*
- (iv) *There are questions where you have to show the output of the program and show the evaluation process as a part of answer.*
- (v) *Give appropriate syntax and examples wherever necessary.*
- (vi) *Ensure that there is no overwriting in the program.*

- 1 (A) Which one of the following is the mobile memory effect? 1
- (i) The mobile battery memorise the decreased life cycle.
 - (ii) The mobile battery memorise the increased life cycle.
 - (iii) The mobile storage overflows.
 - (iv) The mobile storage underflows.
- (B) Capacitive screens tend to be more responsive than resistive screens because 1
- (i) Capacitive touch screen has two layers of conductive material with a small gap between them.
 - (ii) Capacitive touch screen consists of a layer of glass coated with transparent conductor.
 - (iii) Capacitive touch screen has two layers of conductive material without any gap between them.
 - (iv) Capacitive touch screen consists of a layer of glass coated with dense conductor.
- (C) Name assigned by the programmer to some parts of the program is called 1
- (i) Literal
 - (ii) Token
 - (iii) Identifier
 - (iv) Comment
- (D) Which one of the following is not an immutable data type? 1
- (i) int
 - (ii) tuple
 - (iii) string
 - (iv) dictionary
- (E) X = "ABC" 1
Y = int(X) #statement 1
What will be the outcome of the statement 'statement 1'
- (i) Assigns the value of X to Y
 - (ii) Assigns the id of X to Y
 - (iii) Converts String datatype to integer
 - (iv) Error

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- (F) Predict the output of the following statement. 1
X=complex(2)
print(X)
(i) 2
(ii) 2 + 0
(iii) 2 + 0j
(iv) 2 + j
- (G) X, Y = 5, 3 1
Which of the following statement will give 2 as output?
(i) print(x/y)
(ii) print(x//y)
(iii) print(x%y)
(iv) print(x**y)
- (H) a = True 1
b = False
c = False
print (not a or not b and c)
print (not a or b or not b and a)
Predict the output from the following option:
(i) False
True
(ii) False
False
(iii) True
True
(iv) True
False
- (I) Following statement was typed in IDLE shell: 1
>>> 1>2<3
What will be output?
(i) True
(ii) False
(iii) True, False
(iv) Error
- (J) >>>list1 = [2,4,6,8,10,12] 1
>>>list1[6]
On execution of the above statements, which one of the following will be the output?
(i) True
(ii) SyntaxError
(iii) IndexError
(iv) NameError

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- (K) `>>> list1 = ['Red', 'Green', 'Blue', 'Cyan']` 1
`>>> list1[1:3]`
On execution of the above statements, which one of the following will be the output?
(i) ['Green', 'Blue']
(ii) ['Red', 'Green']
(iii) ['Red', 'Green', 'Blue']
(iv) ['Green', 'Blue', 'Cyan']
- (L) Which of the following term is used for the internet slang for a person who intentionally starts arguments or upsets others by posting inflammatory remarks? 1
(i) Cyber bullying
(ii) Cyber trolling
(iii) Cyber stalking
(iv) Phishing
- (M) A standalone malware computer program that replicates itself in order to spread to other computers is called: 1
(i) Worm
(ii) Virus
(iii) Trojan
(iv) Spam
- (N) You have received unwanted message in your email inbox sent through computer generated program. Which one of the following is the appropriate term used for such type of communication? 1
(i) Adware
(ii) Digital footprints
(iii) Spam
(iv) Virus
- (O) Which one of the following is not true for encryption? 1
(i) A way of scrambling data so that only authorized parties can understand the information
(ii) A method by which information is converted into secret code that hides the information's true meaning
(iii) It translates data into another form, or code, so that only people with access to a secret key can understand the data.
(iv) A protection against theft of personal information over Cyber Space without consent.
- (P) Which one of the following is true for Dictionary? 1
(i) The items are accessed via the keys.
(ii) The items are accessed via index.
(iii) The items are accessed via index as well as keys.
(iv) Each value maps to an index.
- (Q) The existing dictionary can be modified by: 1
(i) Overwriting the value for a particular key.
(ii) Overwriting the key for a particular value.
(iii) Overwriting the key,value for a particular value,key.
(iv) Dictionary cannot be edited.

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- (R) Which of the following is not a Python legal string operation? 1
- (i) 'abc'+ 'abc'
 - (ii) 'abc'*3
 - (iii) 3*'abc'
 - (iv) 'abc' + 3
- 2 (A) Prove the identities algebraically in the given boolean equation $AB+BC+\bar{A}C=AB+\bar{A}C$ 2
- (B) Explain the working of ALU. 2
- (C) Name any four mobile phone components. 2
- (D) (i) Convert $(4AAD)_{16}$ to its equivalent binary number. 1
- (ii) Subtract 1111 from 10000 using 2s compliment method. 1
- (E) Define Token with an example. 2
- (F) Write the differences between Copyrights and Patents. 2
- (G) Predict the output of the following statement. 2
- ```
X = 10
X = X + 10
X = X - 5
print (X)
X, Y = X - 2, 22
print (X, Y)
```
- (H) Write the corresponding Python expression of the following mathematical expression. 1
- (a)  $\sqrt{x + \frac{x+y}{z}}$
  - (b)  $\sqrt[4]{x}$
- (I) Find syntax error in the following Python code: 2
- ```
num=int(input("Enter an integer: "))
if num<0
    num=-num
if num>=0 AND num<=9
    print("Single digit number")
elif : num>=10 OR num<=99
    print("Two digit number")
elif : num<=999
    print("Three digit number")
else : print("Number contains more than 3 digits")
```
- (J) Define Hacking. Differentiate between ethical and non ethical hackers. 2
- (K) Explain the need for Social media etiquettes. 2

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- (L) Illustrate with example the difference between break and continue statement. 2
- (M) How many times the for loop will be evaluated in the following python code? Also mention the final value of i. 2
for i in range(0,10):
 pass
- (N) You are planning to go for a vacation. You surfed the Internet to get answers for the following queries: 2
a) Weather conditions
b) Availability of air tickets and fares
c) Places to visit
d) Best hotel deals
Which of the above mentioned action(s) might have created a digital footprint? Give reason(s).
- (O) Rewrite the following code fragment using for loop: 2
i = 100
while (i > 0) :
 print (i)
 i = 3
- (P) How will you create a single element Tuple? What will the outcome of the statement X=(3)? 2
- 3 (A) Write a Python code to produce the following pattern using nested for loop. 3
A
B A
C B A
D C B A
- (B) Write programs to find the sum of the following series: 3
 $x + x^2/2 + x^3/3 + \dots + x^n/n$ (Input x and n both)
- (C) What does each of the following expressions evaluate to? Suppose that L is the list ["These", ["are", "a", "few", "words"], "that", "we", "will", "use"]. 3
(i) L[1][0:2]
(ii) L[:1] + L[1]
(iii) L[2::2]
- (D) Given two lists: 3
L1 = ["this", 'is', 'a', 'List'], L2 = ["this", ["is", "another"], "List"]
Which of the following expressions will cause an error and why?
(i) L1 == L2
(ii) L1.upper()
(iii) L1[3].upper()
(iv) L2.upper()
(v) L2[1].upper()
(vi) L2[1][1].upper()

- 4 (A) Suppose that D is the dictionary 4
D= {"what" : 22, "are" : 11, "you" : 14, "doing" : 5, "next" : 9, "Saturday?" : 4}.
Write down what the value of D is after each of the following Python statements.
Evaluate each statement starting with the same value of the dictionary D, mentioned
above and write what will be the change dictionary D?
- (a) D ["what"] = D ["are"]
 - (b) D.update ({"Sunday":25, "what":5})
 - (c) del D["you"]
 - (d) D ["which"] = 19
- (B) Given a string, the task is to find the frequencies of all the characters in that string and
return a dictionary with key as the character and its value as its frequency in the given
string. Complete the following code and predict the output. 4

```
test_str = "ARMY PUBLIC SCHOOL SHILLONG"  
all_freq = {}  
for i in test_str:  
    if i in (i)_____  
        all_freq[i] = (ii)_____  
    else:  
        all_freq[i] = (iii)_____  
# printing result  
print("Count of all characters is :\n "+ str(all_freq))
```