COMPUTER SCIENCE (083)
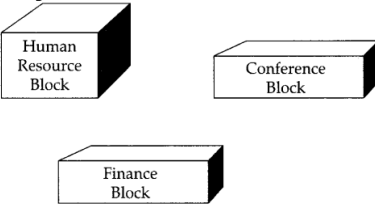## SAMPLE PAPER 1
(2019-20)
(F.M:70)

Q.No.	Questions	Marks
	SECTION A	
1		
(a)	Which of the following is not a valid arithmetic-assignment operators (i) += (ii) == (iii) %= (iv) //=	1

(b)	Write the type of tokens:-
	    (i) None
	    (ii) break
		1

(c)	Write code (Python Library Module) to access value of pi to calculate area of a circle.	1
(d)	Following code is trying to create a tuple with a single item, but it gives error. What is the error and solution? >>>t(6) >>>len(t)	2

(e)	Write the output of the following Python code:
	Text="gmail@com"
	L=len(Text)
	ntext=""
	for i in range(0,L):
	    if Text[i].isupper():
	        ntext=ntext+Text[i].lower()
	    elif Text[i].isalpha():
	        ntext=ntext+Text[i].upper()
	    else:
	        ntext=ntext+'bb'
	print(ntext)
		2

(f)	What will be the output of the following Python code: def func(a,b=5,c=10): print("a:",a," b:",b, " c:",c) func(3,7) func(25,c=24) func(c=50, a=100)	3
(g)	Consider the following code: import random print(int(30+random.random()*5), end='') print(int(30+random.random()*5), end='') print(int(30+random.random()*5), end='') print(int(30+random.random()*5))	2

	find the suggested output options (i) to (iv). Also, write the least value and highest value that can be generated.
	    (i) 30 32 34 35
	    (ii) 31 32 34 33
	    (iii) 32 33 35 31
	    (iv) 30 33 33 32	

2			
(a)	What is a list slice?	1

(b)	Suppose t=(1,2,4,3), which of the following is incorrect?
	    (i) print(t[3])
	    (ii) t[3]=45
	    (iii) print(max[t])
	    (iv) print(len(t))
		1

(c)	Which of these about a dictionary is false?
	    (i) The values of a dictionary can be accessed using keys.
	    (ii) The keys of a dictionary can be accessed using values.
	    (iii) Dictionaries aren't ordered.
	    (iv) Dictionaries are mutable.
		1

(d)	What is the list comprehension equivalent for: {x:x is a whole number less than 20, x is even} (including zero)	1

(e)	Find and write the output of the following Python code:-
	x=1
	def cg():
	    global x
	    x=x+1
	
	cg()
	print(x)
		1

(f)	Explain operator overloading with the help of an example.	2

(g)	Write code to create a pie for sequence con=[23.4,17.8,25,34,40] for Zones=['East', 'West', 'North', 'South', 'Central']
	    • Show North Zone's value exploded
	    • Show % contribution for each zone.
	                       Or
	Give output using a rough drawing(Angles in pie chart may be approximate) of following code:
	import matplotlib.pyplot as plt
	qdata=[100,200,250,150]
	lb=['Q1SALE','Q2SALE','Q3SALE','Q4SALE']
	plt.pie(qdata, labels=lb,explode=[0.2,0,0,0])
	plt.title('PHOENIX MALL')
	plt.show()
		2

(h)	Write a function named "filter" that copies a text file "source.txt" onto "target.txt" barring the lines starting with a "#" sign. OR	2

	Write a function countthe() in Python to read the text file "Data.txt" and count the number of times "the" occurs in the file.		
(i)	Write a Python function to determine how many times a given letter occurs in a string recursively. OR Write a function for Binary Search in a list/array using recursion.	3
(j)	Write a function in Python, PUSHEMP(Arr) and POPEMP(Arr) for performing insertion and deletion operations in a STACK. Accept items from user in a tuple containing (employeeid, employeename, sale) OR Write a function in python, QADD(Package) and QDEL(Package) to add a new Package and delete a Package from a List of Package Price (List of Floats), considering them to act as insert and remove operations of the Queue data structure.	4
3		
(a)	Combination of two or more networks are called _____ .	1
(b)	_____ provide means for the local networks to connect to the external network.	1
(c)	The fastest guide media is _____.	1
(d)	The _____ command is a sat way of determining your computer's IP address and other information, such as the address of its default gateway.	1

(e)	Give the full forms of the following:-
	    (i) CDMA
	    (ii) DHCP
	    (iii) SIM
	    (iv) MAC
		2

(f)	What is IOT? Discuss few applications of IOT?	2

(g)	Identify the type of cybercrime for the following situations:
	  • A person complaints that somebody has created a fake profile on Facebook and defaming his/her character with abusive comments and pictures.
	  • A person connects to a public Wi-Fi and all his personal information gets stolen.
	  • A person was offered a reward of 1 crore and asked to deposit 1 lac as tax before receiving the sum. After paying no reward was given.
		3

(h)	Trine Tech Corporation (TTC) is a professional consultancy company. The company is planning to set up their new offices in India with its hub at Hyderabad. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (1) to (4) below. **Physical Locations of the blocked of TTC** 	

Block to Block distances (in Mtrs.)

Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be installed in each block.

Block	Computers
Human Resource	25
Finance	120
Conference	90

1. What will be the most appropriate block, where TTC should plan to install their server?
2. Draw a block to cable layout to connect all the buildings in the most appropriate manner for efficient communication.
3. What will be the best possible connectivity out of the following, you will suggest to connect the new setup of offices in Bangalore with its London based office:
   - Satellite Link
   - Infrared
   - Ethernet Cable
4. Which of the following device will be suggested by you to connect each computer in each of the buildings:
   - Switch
   - Modem
   - Gateway

4

SECTION B

4.		
(a)	What is the command to retrieve data?	1
(b)	What is the purpose of a Foreign Key?	1
(c)	What is the use of order by command?	1
(d)	How can you view values by reducing redundant column?	1
(e)	Differentiate between Primary Key and Unique Key? Or Differentiate between Where and Having Clause?	2
(f)	Write Django commands for the followings:- • To install Django. • To check whether server is running successfully or not.	2
(h)	Write the output for SQL queries (i) to (iii), and commands for (iv) to (vii) which are based on the table STUDENT given below:	

Table: STUDENT

Roll No.	Name	Class	DOB	Gender	City	Marks
1	Nanda	X	06-06-1995	M	Agra	551
2	Saurabh	XII	07-05-1993	M	Mumbai	462
3	Sanal	XI	06-05-1994	F	Delhi	400
4	Trisha	XII	08-08-1995	F	Mumbai	450
5	Store	XII	08-10-1995	M	Delhi	369
6	Marishla	XI	12-12-1994	F	Dubai	250
7	Neha	X	08-12-1995	F	Moscow	377
8	Nishant	X	12-06-1995	M	Moscow	489

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(i) Select distinct(City) from STUDENT;
(ii) Select MAX(DOB),MIN(DOB) From STUDENT;
(iii) Select Name,Gender From STUDENT Where City="Delhi";
(iv) To display the records from table STUDENT in alphabetical order as per the name of the student.
(v) To display Class, DOB and City whose marks is between 450 and 551.
(vi) To display Name, Class of students who have secured more than 450 marks, class wise.
(vii) To increase marks of all students by 20 whose class is "XII".

	SECTION C	
5		
(a)	It is an Internet service for sending written messages electronically from one computer to another. Write the service name.	1
(b)	As a citizen of India, what advise you should give to others for e-waste disposal?	1
(c)	Write any two ways to reduce the risk of Identity theft?	2
(d)	What is plagiarism? How is it related to digital property rights?	2
(e)	What are the steps to be taken immediately after identity theft?	2
(f)	What are the gender and disability issues while teaching/using computers?	2