KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION

PREBOARD EXAMINATION-2019

COMPUTER SCIENCE (083)

MAXIMUM MARKS:-70   CLASS:-XII   TIME ALLOWED: 3 HRS

_____

General Instructions:

- **All questions are compulsory.**

- **Question paper is divided into 4 sections A, B, C and D.**

		Section-A	
Q.1	a)	How many type of membership operators are supported by the Python? Explain with suitable example.	1

	b)	Name the Python Library modules which need to be imported to invoke the following functions:
		   i) linspace()
		   ii) mean()
			1

	c)	Identify the valid and invalid identifiers supported by Python from the following: i) _2var ii) var-c	1

	d)	Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined.
		`DEF execmain():`
		`        x = input("Enter a number:")`
		`        if (abs(x)= x)`
		`             print("You entered a positive number")`
		`        else:`
		`                x=*-1`
		`             print("Number made positive:"x )`
			2

	e)	`L1 = [1, 1.33, 'GFG', 0, 'NO', None, 'G', True]`
		`val1, val2 = 0, ''`
		`for x in L1:`
		`    if(type(x) == int or type(x) == float):`
		`        val1 += x`
		`    elif(type(x) == str):`
		`        val2 += x`
		`    else:`
		`        break`
		`print(val1, val2)`
			2

	f)	Study the following program and select the possible output(s) from	2

the options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to the variable Y.
```
import random
X= random.random()
Y= random.randint(0,4)
print(int(X),":",Y+int(X))
```

(i) 0 : 0   (ii) 1 : 6   (iii) 2 : 4   (iv) 0 : 3

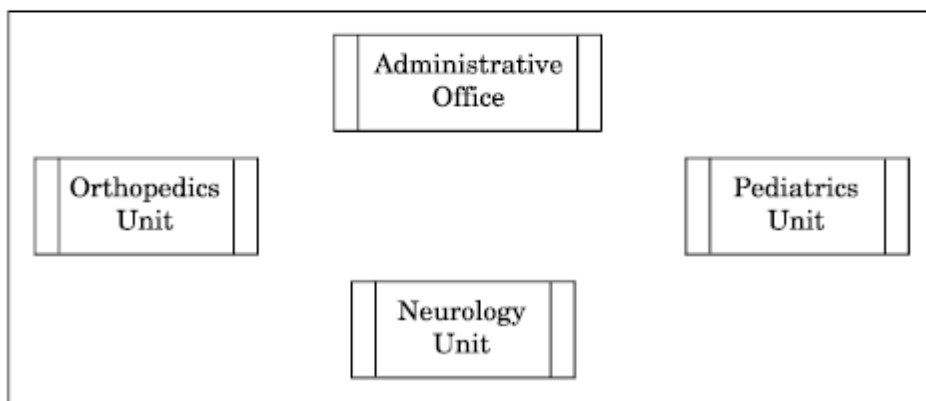|	g)	Find and write the output of the following python code:
		
		``
		def Alter(P=15,Q=10):
		    P=P*Q
		    Q=P/Q
		    Print(P,"#",Q)
		    return Q
		A=100
		B=200
		A=Alter(A,B)
		Print(A,"$",B)
		B=Alter(B)
		Print(A,"$",B)
		A=Alter(A)
		Print(A,"$",B)
		``
			3

Q.2	a)	What do you understand by local and global scope of variables? How can you access a global variable inside the function, if function has a variable with same name?	1
	b)	Identify mutable and immutable objects from following i) List ii) String ii) Dictionary iv)tuple	2
	c)	Write definition of a method/function **DoubletheOdd(Nums)** to add and display twice of odd values from the list of Nums. For example : If the Nums contains **[25,24,35,20,32,41]** The function should display Twice of Odd Sum: **202**	3
	d)	Write **DoPush(Customer)** and **DoPop(Customer)** methods/function in Python to add a new Customer and delete a Customer from a List of Customer names, considering them to act as push and pop operations of the Stack data structure. OR Write **InsQueue(Passenger)** and **DelQueue(Passenger)** methods/function in Python to add a new Passenger and delete a Passenger from a list of Passenger names, considering them to act as insert and delete operations of the Queue data structure.	4
	e)	Write a method/function **BIGWORDS()** in Python to read contents from a text file CODE.TXT, to count and display the occurrence of those words, which are having 5 or more alphabets. For example : If the content of the file is **ME AND MY FRIENDS ENSURE SAFETY AND SECURITY OF EVERYONE** The output Should be :-5	3

		OR	
		Write a method/function **BIGLINES()** in Python to read lines from a text file CONTENT.TXT, and display those lines, which are bigger than 20 characters.	

	f)	Select output given by the following code
		`a = {i: i * i for i in range(6)}`
		`print (a)`
		
		Options:-
		a) Dictionary comprehension doesn't exist
		b) {0: 0, 1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6:36}
		c) {0: 0, 1: 1, 4: 4, 9: 9, 16: 16, 25: 25}
		d) {0: 0, 1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
			2

	g)	Write a python script to plot a bar graph for the given set of values of subject on x-axis and number of student who opted for that subject on y-axis:- X=['HINDI','ENG','MATHS','SCIENCE'] Y=[10,20,30,40]	2

	h)	What will be the output of the following Python code snippet?
		`    d1 = {"john":40, "peter":45}`
		`    d2 = {"john":466, "peter":45}`
		`    print(d1 == d2)`
		    i) True ii) False iii) None iv) Error
			1

Section-B

3	a)	Differentiate between Bus Topology and Star Topology of Networks. What are the advantages and disadvantages of Star Topology over Bus Topology?	3
	b)	Write the expanded forms for the following abbreviated terms used in Networking and Communications : (i) SMTP (ii) VoIP (iii) GSM (iv) POP	2
	c)	What do you understand by the terms Cookies and Firewall?	1

	d)	In Networking, transmission media can be divided into
		
		  i) four broad categories
		  ii) three broad categories
		  iii) two broad categories
		  iv) None
			1

	e)	Which of the following transmission media line of Sight is NOT required
		
		  i) Microwave iii) Radiowave
		  ii) Satellite Iv) Infrared
			1

f) Ayurveda Training Educational Institute is setting up its centre in Hyderabad with four specialised departments for Orthopedics, Neurology and Pediatrics along with an administrative office in separate buildings. The physical distances between these department buildings and the number of computers to be installed in these departments and administrative office are given as follows. You, as a network expert, have to answer the queries as raised by them in (i) to (iv). Shortest distances between various locations in meters :

Administrative Office to Orthopedics Unit	55
Neurology Unit to Administrative Office	30
Orthopedics Unit to Neurology Unit	70
Pediatrics Unit to Neurology Unit	50
Pediatrics Unit to Administrative Office	40
Pediatrics Unit to Orthopedics Unit	110

Number of Computers installed at various locations are as follows :

Pediatrics Unit	40
Administrative Office	140
Neurology	50
Orthopedics Unit	80

I. Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
II. Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.
III. Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following :
   • Gateway • Modem • Switch
IV. Suggest the topology of the network and network cable for efficiently connecting each computer installed in each of the buildings out of the following :
   Topologies : Bus Topology, Star Topology

		Network Cable : Single Pair Telephone Cable, Coaxial Cable, Ethernet Cable	
	g)	What is http? How it is different from ftp?	2
	h)	Mr. Ram is working in Global Organization. He wants to login in his office's computer from his home. Suggest the protocol for the same.	1

<div align="center">

Section-C

</div>

Q.4	a)	Mr.Ramesh has created a table SUPPLIER in the database. One of the fields in the table is city. Write the command to display city by avoiding duplicate values.	1
	b)	Which of the following is NOT a part of DDL Commands in MySql i) DROP ii) SELECT iii) MODIFY iv) CREATE	1
	c)	A table ACCOUNTS in a database has 14 columns and 4 records. What is its degree if 2 more rows are added into the table? i) 14 ii) 16 iii) 8 iv) None of these	1
	d)	Write the SQL command for the following on the basis of given table.	4

<div align="center">

Table : SPORTS

</div>

StudentNo	Class	Name	Game1	Grade1	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

a) Display the names of the students who have grade 'A' in either Game 1 or Game 2 or both.
b) Display the number of students having the GRADE1 as 'A' in Game1.
c) Display the names of students who have same game for both Game1 and Game2.
d) Display the games taken by the students whose name starts with 'A'

	e)	e) Give the output of the following sql statements as per table given above.
		 i) SELECT COUNT(*) FROM SPORTS.
		 ii) SELECT DISTINCT Class FROM SPORTS.
		 iii) SELECT MAX(Class) FROM STUDENT;
		 iv) SELECT COUNT(*) FROM SPORTS GROUP BY Game1;
			4

f)	Which method of **cursor** we need to call to make permanent changes in Mysql table after inserting the data from Python code to Mysql Table.		1
g)	Differentiate between Django GET and POST method.		1
h)	Write a SQL query to create following table "Items" with following descriptions.		2

Table : ITEMS

Field	Type	Constraint
Item Code	Integer(5)	Primary key
Item Name	Varcahr(15)	Unique
CostperItem	Decimal(5,2)	Not Null
Qty	Integer(4)	
DateofPurchase	Date	
Warranty	Integer	Default value 1 year
Operational	Integer(2)	

Section-D

Q.5	a)	What is e-Waste? Suggest any two methods to dispose off the e-waste Material.	2
	b)	What is meant by the term Cyber Forensics? Explain with suitable example.	2
	c)	_------------is use to protect against unauthorized access to your computer System.	1
	d)	Differentiate between OSS and FLOSS?	2

	e)	Which of the following is not a type of Virus
		   i) Trojan Horse
		   ii) Worms
		   iii) Phishing
		   iv) Malware
			1

	f)	What are Intellectual Property Rights (IPR)? Explain with suitable example.	2