CBSE(NEW SYLLABUS)(QUESTION WITH ANSWER)

FM=70 TIME:3HRS J P KHUNTIA

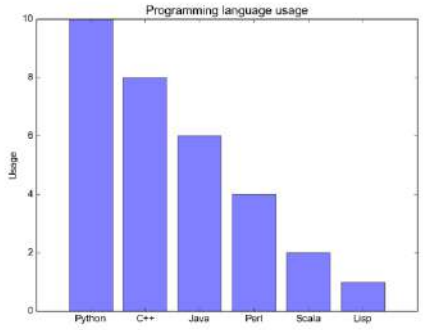
		SECTION-A	
Q1.	(a)	Which of the following is valid arithmetic operator in Python: (i) **//** (ii) **?** (iii) **<** (iv) **and**	1
	Ans.	(i) // **(1 mark for correct answer)**	
	(b)	Write the type of tokens from the following: (i) **if** (ii) **roll_no**	1
	Ans.	(i) Keyword (ii) Identifier **(1/ 2 mark for each correct type)**	
	(c)	Name the Python Library modules which need to be imported to invoke the following functions: **(i) sin( ) (ii) randint ( )**	1
	Ans.	(i) math (ii) random **(1/ 2 mark for each module)**	
	(d)	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code. 30=To for Kin range(0,To) IFk%4==0: print (K* 4) Else: print (K+3)	2
	Ans.	**To=30** for Kin range**(0,To) :** **if** k%4==0: print (K* 4) **else:** print (K+3) **(1/ 2 mark for each correction)**	
	(e)	Find and write the output of the following python code: def fun(s): k=len(s)	2

		m=" "
		for i in range(0,k): if(s[i].isupper()):
		m=m+s[i].lower()
		elif s[i].isalpha():
		m=m+s[i].upper()
		else:
		m=m+'bb' print(m)
		fun('school2@com')	

	Ans.	SCHOOLbbbbCOM (2 marksfor correct output) Note: Partial marking can also be given	
	(f)	Find and write the output of the following python code: def Change(P ,Q=30): P=P+Q Q=P-Q print(P,"#",Q) return (P) R=150 S=100	3

		R=Change(R,S) print(R,"#",S) S=Change(S)	
	Ans.	250 # 150 250 # 100 130 # 100 (1 mark each for correct line)	
	(g)	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO. import random AR=[20,30,40,50,60,70]; FROM=random.randint(1,3) TO=random.randint(2,4) for Kin range(FROM,TO+1): print (AR[K],end=" # ") (i) 10#40#70# (ii) 30#40#50#	2
		(iii) 50#60#70# (iv) 40#50#70#	
	Ans.	(ii) 30#40#50# Maximum value FROM,TO is 3,4) (1/ 2 mark each for maximum value) (1 mark for correct option)	
Q2.	(a)	What do you understand by the term Iteration?	1
	As	Repeatation of statement/ s finite number of times is known as Iteration. (1 mark for correct answer)	
	(b)	Which is the correct form of declaration of dictionary? (i) Day={1:'monday',2:'tuesday',3:'wednesday'} (ii) Day=(1;'monday',2;'tuesday',3;'wednesday') (iii) Day=[1:'monday',2:'tuesday',3:'wednesday'] (iv) Day={1'monday',2'tuesday',3'wednesday']	1
	Ans.	(i) Day={1:'monday',2:'tuesday',3:'wednesday'} (1 mark for correct answer)	
	(c)	Identify the valid declaration of L: L= [1, 23, 'hi', 6]. (i) list (ii) dictionary (iii) array (iv) tuple	1

	Ans.	(i) List (1 mark for correct answer)	
	(d)	Find and write the output of the following python code: x = "abcdef" i = "a" while i in x: print(i, end = " ")	1
	Ans.	aaaaaa ORinfinite loop (1 mark for correct answer)	
	(e)	Find and write the output of the following python code: a=10 def call(): global a a=15 b=20 print(a) call()	1
	Ans.	15	
		(1 mark for correct answer)	
	(f)	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.	2
	Ans.	A global variable is a variable that is accessible globally. A local variable is one that is only accessible to the current scope, such as temporary variables used in a single function definition. A variable declared outside of the function or in global scope is known as global variable. This means, global variable can be accessed inside or outside of the function where as local variable can be used only inside of the function. We can access by declaring variable as global A. (1 mark for correct difference) (1 mark for explanation)	
	(g)	A bar chart is drawn(using pyplot) to represent sales data of various models of cars, for a month. Write appropriate statements in Python to provide labels Month - June and Sale done to x and y axis respectively. OR Give the output from the given python code: import matplotlib.pyplot as plt; plt.rcdefaults() import numpy as np	2

		import matplotlib.pyplot as plt objects = ('Python', 'C++', 'Java', 'Perl', 'Scala', 'Lisp') y_pos = np.arange(len(objects)) performance = [10,8,6,4,2,1] plt.bar(y_pos, performance, align='center', alpha=0.5) plt.xticks(y_pos, objects) plt.ylabel('Usage') plt.title('Programming language usage') plt.show()	
	Ans.	import matplotlib.pyplot as plt import numpy as np model=('i20','Grandi10','Creta','Eon','Verna','Tucson','Elantra') y_pos=np.arange(len(model)) sale=[12369,12174,9390,4663,4077,3712,200,150] plt.bar(y_pos,sale,align='center',alpha=0.5) plt.xticks(y_pos,model) plt.xlabel('Month-June') plt.ylabel('Sale done') plt.title('Sales Bar Graph') plt.show()	
		(1/ 2 mark for correct plt.bar)  ½ mark for (2 marksfor correct output)	
	(h)	Write a function in python to count the number of lines in a text file 'STORY.TXT' which is starting with an alphabet 'A' . OR Write a method/ function DISPLAYWORDS() in python to read lines from a text file STORY.TXT, and display those words, which are less than 4 characters.	2

	Ans.	def COUNTLINES():
		file=open('STORY.TXT','r') lines = file.readlines() count=0
		for w in lines:
		if w[0]=="A" or w[0]=="a": count=count+1
		print("Total lines ",count) file.close()	

		(½Mark for opening the file) (½Mark for reading all lines, and using loop) (½Mark for checking condition) (½Mark for printing lines) OR def DISPLAYWORDS(): c=0 file=open('STORY.TXT','r') line = file.read()	
		word = line.split() for w in word: if len(w)<4: print(w) file.close() (½Mark for opening the file) (½Mark for reading line and/ or splitting) (½Mark for checking condition) (½Mark for printing word)	
	(i)	Write a Recursive function in python BinarySearch(Arr,l,R,X) to search the given element X to be searched from the List Arr having R elements where l represents lower bound and Rrepresents upper bound. OR Write a Recursive function recurfactorial(n) in python to calculate and return the factorial of number n passed to the parameter.	3

	Ans.	def BinarySearch (Arr,l,R,X):
		if R>= l:
		mid = l + (R-l)/ / 2 if Arr[mid] == X:
		return mid elif Arr[mid] > X:
		return BinarySearch(Arr,l,mid-1,X) else:
		return BinarySearch(Arr,mid+1,r,X)
		else:
		return -1
		Arr = [2, 3, 4, 10, 40]
		X=int(input(' enter element to be searched')) result = BinarySearch(Arr,0,len(Arr)-1,X)
		
		if result != -1:
		print ("Element is present at index ", result) else:
		print ("Element is not present in array")	

		(1/ 2 mark for mid)	

		(1/ 2 mark for return mid)
		(1 mark each for returningfunction) (1 mark for invoking function)
		OR
		def recurfactorial(n):
		if n == 1:
		return n else:
		return n*recurfactorial(n-1) num = int(input("Enter a number: ")) if num < 0:
		print("Sorry, factorial does not exist for negative numbers")
		elif num == 0:
		print("The factorial of 0 is 1") else:
		print("The factorial of",num,"is",recurfactorial(num))
		(2 marksfor correct recursive function) (1 mark for invoking)	

	(j)	Write a function in Python, INSERTQ(Arr,data) and DELETEQ(Arr) for performing insertion and deletion operations in a Queue. Arr is the list used for implementing queue and data is the value to be inserted. OR Write a function in python, MakePush(Package) and MakePop(Package) to add a new Package and delete a Package from a List of Package Description, considering them to act as push and pop operations of the Stack data structure.	4

	Ans.	def INSERTQ(Arr):
		data=int(input("enter data to be inserted: "))
		Arr.append(data)
		def DELETEQ(Arr): if (Arr==[]):
		print("Queue empty") else:
		print ("Deleted element is: ",Arr[0]) del(Arr[0])
		(½mark insert header)
		(½mark for accepting a value from user) (½mark for adding value in list)
		(½mark for delete header)
		(½mark for checking empty list condition)	

		(½mark for displaying “Queue empty”)
		(½mark for displaying the value to be deleted) (½mark for deleting value from list)
		OR
		def MakePush(Package):
		a=int(input("enter package title : ")) Package.append(a)
		def MakePop(Package): if (Package==[]):
		print("Stack empty") else:
		print ("Deleted element:",Package.pop())
		(½mark for MakePush() header)
		(½mark for accepting a value from user) (½mark for adding value in list)
		(½mark for MakePop() header)
		(½mark for checking empty list condition) (½mark for displaying “Stack empty”)
		(½mark for displaying the value to be deleted) (½mark for deleting value from list)	

SECTION-B			
Q.3		Questions 3 (a) to 3 (c) : Fill in the blanks	
	(a)	……..is an example of Public cloud.	1
	Ans.	Google Drive or any other correct example **(1 mark for correct answer)**	
	(b)	…… is a network of physical objects embedded with electronics, software, sensors and network connectivity.	1
	Ans.	The internet of things **OR** Internet (**1 mark for correct answer)**	
	(c)	---------- is a device that forwards data packets along networks.	1
	Ans.	Router **(1 mark for correct answer)**	
	(d)	---------- describes the maximum data transfer rate of a network or Internet connection.	1
	Ans.	Band width **(1 mark for correct answer)**	
	(e)	Give the full forms of the following	2
		(i) HTTP (ii) FTP (iii) VoIP (iv) SSH	
	Ans.	(i) Hyper text transfer protocol (ii) File transfer protocol (iii) Voice over internet protocol (iv) Secure shell	

		(1/ 2 mark for each correct expansion)	
	(f)	How many pair of wires are there in twisted pair cable(Ethernet)?What is the name of port ,which is used to connect Ethernet cable to a computer or a labtop?	2
	Ans.	Two insulated copper wires, Ethernet port (1 mark for each correct Answer)	
	(g)	Identify the type of cyber crime for the following situations: (i) A person complains that Rs. 4.25 lacs have been fraudulently stolen from his/ her account online via some online transactions in two days using NET BANKING. (ii) A person complaints that his/ her debit/ credit card is safe with him still some body has done shopping/ ATM transaction on this card. (iii) A person complaints that somebody has created a fake profile on Facebook and defaming his/ her character with abusive comments and pictures.	3
	Ans.	(i) Bank Fraud (ii) Identity Theft (iii) Cyber Stalking (1 mark for each correct answer)	
	(h)	Software Development Company has set up its new center at Raipur for its office and web based activities. It has 4 blocks of buildings named Block A, Block B, Block C, Block D. Number of Computers	4

Block A	25	
	50	
	125	
	10	

Shortest distances between various Blocks in meters:

(i) Suggest the most suitable place (i.e. block) to house the server of this company with a suitable reason.

Ans. Block C, It has maximum number of computer.

(1 mark for correct answer)

(ii) Suggest the type of network to connect all the blo)cks with suitable reason.

Ans. LAN

(1 mark for correct answer)

(iii) The company is planning to link all the blocks through secure and high-speed wired medium. Suggest a way to connect all the blocks.

Ans. Star topology

OR Diagram

(1 mark for correct answer)

(iv) Suggest the most suitable wired medium for efficiently connecting each computer installed in every block out of the following network cables:

- Coaxial Cable
- Ethernet Cable
- Single Pair Telephone Cable.

Ans. Ethernet Cable

(1 mark for correct answer)

SECTION-C

Q.4	(a)	Which key word isused to sort the records of a table in descending order?	1
	Ans.	DESC **(1 mark for correct answer**)	
	(b)	Which clause is used to sort the records of a table?	1
	Ans.	ORDERBY (1 mark for correct answer)	
	(c)	Which command is used to modify the records of the table?	1
	Ans.	UPDATE (1 mark for correct answer)	
	(d)	Which clause is used to remove the duplicating rows of the table?	1
	Ans.	DISTINCT (1 mark for correct answer)	

	(e)	Differentiate between Primary key and Candidate key. OR Differentiate between Degree and Cardinality.	2
	Ans.	A Candidate Key can be any column or a combination of columns that can qualify as unique key in database. There can be multiple Candidate Keys in one table where as A Primary Key is a column or a combination of columns that uniquely identify a record. Only one Candidate Key can be Primary Key. (2 marks for correct difference) OR Degree : It is the total number of attributes in the table. Cardinality: It is the total number of tuples in the table (2 marksfor correct difference)	
	(f)	Differentiate between Django GET and POST method.	2
	Ans.	GET and POST. GET and POST are the only HTTP methods to use when dealing with forms. Django's login form is returned using the POST method, in which the browser bundles up the form data, encodes it for transmission, sends it to the server, and then receives back its response. Both of these are dictionary-like objects that give you access to GET and POST data. POST data generally is submitted from an HTML <form> , while GET data can come from a <form> or the query string in the page's URL. (2 Marks for correct difference)	
	(g)	Write a output for SQL queries (i) to (iii), which are based on the table: STUDENT given below: Table : STUDENT	3

RollNo	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	Trisla	XII	08-08-1995	F	Mumbai	450
5	Store	XII	08-10-1995	M	Delhi	369
6	Marisla	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

(i) SELECT COUNT(*), City FROM STUDENT GROUP BY CITY HAVING COUNT(*)>1;

Ans. COUNT(*) City

2 Mumbai

2 Delhi

2 Moscow

(1 mark for correct output)

(ii) SELECT MAX(DOB),MIN(DOB) FROM STUDENT;

Ans. MAX(DOB) MIN(DOB)

08-12-1995 07-05-1993

(1 mark for correct output)

(iii) SELECT NAME,GENDERFROM STUDENT WHERECITY=" Delhi";

Ans. NAME GENDER

		Sanal F Store M (1 mark for correct output)	
	(h)	Write SQL queries for (i) to (iv), which are based on the table: STUDENT given in the question 4(g): (i) To display the records from table student in alphabetical order as per the name of the student. Ans. SELECT * FROM STUDENT ORDERBYNAME; (1 mark for correct statement) (ii) To display Class, Dob and City whose marks is between 450 and 551. Ans. SELECT CLASS,DOB,CITYFROM STUDENT WHEREMARKS BETWEEN 450 AND 551; (1 mark for correct statement)	4
		(iii) To display Name, Class and total number of students who have secured more than 450 marks, class wise. Ans. SELECT NAME,CLASS,COUNT(*) FROM STUDENT GROUP BYCLASS HAVING MARKS>450; (1 mark for correct statement) (iv) To increase marks of all students by 20 whose class is "XII" . Ans. UPDATESTUDENT SET MARKS=MARKS+20 where class="XII"; (1 mark for correct statement)	
		SECTION-D	
Q.5	(a)	It is an internet service for sending written messages electronically from one computer to another. Write the service name.	1
	Ans.	e-mail **(1 mark for correct answer)**	
	(b)	As a citizen of india , What advise you should give to others for e-waste disposal?	1
	Ans.	As a citizen of india , We can advice the following principle of waste management: Reduce , Reuse and Recycle. **(1 mark for correct answer)**	
	(c)	What can be done to reduce the risk of identity theft? Write any two ways.	2
	Ans.	1. Don't Give out Personal Information to anyone 2.Don't Carry Your Social Security Card. (1 mark for each point)	

	(d)	Ravi received a mail form IRS department (as shown above). On clicking " Click-Here" ,he was taken to a site designed to imitate an official-looking website, such as IRS.gov. He uploaded some important information on it. Identify and explain the cyber crime being discussed in the above scenario.	2
	Ans.	It is an example of phishing. phishing is a term used to describe a malicious individual or group of individuals who scam users. They do so by sending e-mails or creating web pages that are designed to collect an individual's online bank, credit card, or other login information. (1 mark for identification) (1 mark for explanation)	
	(e)	Differentiate between open source and open data.	2
	Ans.	These licenses are based on the copyright protection of the code; thus, the "open" of open source refers to the source code. Difference between open data and open source is that of data versus application. Data can be numbers, locations, names, etc. (2 Marks for correct difference)	
	(f)	Enumerate any two disability issues while teaching and using computers.	2
	Ans.	There are several types of disabilities that can affect computer accessibility. Although there is no single universally accepted classification, an indicative list of impairments includes the following :Visual impairments: blindness, low vision and color blindness. (1 mark for each point)	