

**COMPUTER SCIENCE – NEW (083)**  
**SAMPLE QUESTION PAPER (2019-20)**  
**CLASS- XII**

**Max. Marks: 70**

**Time: 3 hrs**

**General Instructions:**

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - Section A : Unit-1
  - Section B : Unit-2
  - Section C: Unit-3
  - Section D: Unit-4

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

		<pre>def Change(P ,Q=30):     P=P+Q     Q=P-Q     print( P,"#",Q)     return (P)  R=150 S=100  R=Change(R,S) print(R,"#",S) S=Change(S)</pre>	
	(g)	<p>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.</p> <pre>import random AR=[20,30,40,50,60,70]; FROM=random.randint(1,3) TO=random.randint(2,4) for K in range(FROM,TO+1):     print (AR[K],end="#")</pre> <p>(i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#</p>	2
Q2.	(a)	What do you understand by the term Iteration?	1
	(b)	<p>Which is the correct form of declaration of dictionary?</p> <p>(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'}</p>	1
	(c)	<p>Identify the valid declaration of L:</p> <p>L = [1, 23, 'hi', 6].</p> <p>(i) list (ii) dictionary (iii) array (iv) tuple</p>	1
	(d)	<p>Find and write the output of the following python code:</p> <pre>x = "abcdef" i = "a" while i in x:     print(i, end = " ")</pre>	1

	<p>(e) Find and write the output of the following python code:</p> <pre> a=10 def call():     global a     a=15     b=20     print(a) call() </pre>	1
	<p>(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.</p>	2
	<p>(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 <b>Month - June</b> and <b>Sale done</b> to x and y axis respectively.</p> <p style="text-align: center;"><b>OR</b></p> <p>Give the output from the given python code:</p> <pre> import matplotlib.pyplot as plt; plt.rcParams() import numpy as np 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() </pre>	2
	<p>(h) Write a function in python to count the number of lines in a text file '<b>STORY.TXT</b>' which is starting with an alphabet '<b>A</b>' .</p> <p style="text-align: center;"><b>OR</b></p> <p>Write a method/function <b>DISPLAYWORDS()</b> in python to read lines from a text file <b>STORY.TXT</b>, and display those words, which are less than 4 characters.</p>	2
	<p>(i) Write a Recursive function in python <b>BinarySearch(Arr,I,R,X)</b> to search the given element <b>X</b> to be searched from the List <b>Arr</b> having <b>R</b> elements,where <b>I</b> represents lower bound and <b>R</b> represents the upper bound.</p> <p style="text-align: center;"><b>OR</b></p>	3

		Write a Recursive function <b>recurfactorial(n)</b> in python to calculate and return the factorial of number <b>n</b> passed to the parameter.	
	(j)	Write a function in Python, <b>INSERTQ(Arr,data)</b> and <b>DELETEQ(Arr)</b> for performing insertion and deletion operations in a Queue. <b>Arr</b> is the list used for implementing queue and <b>data</b> is the value to be inserted.  <b>OR</b> Write a function in python, <b>MakePush(Package)</b> and <b>MakePop(Package)</b> 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
		<b>SECTION-B</b>	
Q.3		Questions 3 (a) to 3 (c) : Fill in the blanks	
	(a)	.....is an example of Public cloud.	1
	(b)	..... is a network of physical objects embedded with electronics, software, sensors and network connectivity.	1
	(c)	----- is a device that forwards data packets along networks.	1
	(d)	----- describes the maximum data transfer rate of a network or Internet connection.	1
	(e)	Give the full forms of the following  (i) HTTP (ii) FTP (v) VoIP (vi) SSH	2
	(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 laptop?	2
	(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 complains that his/her debit/credit card is safe with him still some body has done shopping/ATM transaction on this card. (iii) A person complains that somebody has created a fake profile on Facebook and defaming his/her character with abusive comments and pictures.	3
	(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
Block B	50
Block C	125
Block D	10

Shortest distances between various Blocks in meters:

Block A to Block B	60 m
Block B to Block C	40 m
Block C to Block A	30 m
Block D to Block C	50 m

- (i) Suggest the most suitable place (i.e. block) to house the server of this company with a suitable reason.
- (ii) Suggest the type of network to connect all the blocks with suitable reason .
- (iii)The company is planning to link all the blocks through a secure and high speed wired medium. Suggest a way to connect all the blocks.
- (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.

**SECTION-C**

Q.4	(a)	Which key word is used to sort the records of a table in descending order?	1
	(b)	Which clause is used to sort the records of a table?	1
	(c)	Which command is used to modify the records of the table?	1
	(d)	Which clause is used to remove the duplicating rows of the table?	1
	(e)	Differentiate between Primary key and Candidate key.  <b>OR</b> Differentiate between Degree and Cardinality.	2
	(f)	Differentiate between Django GET and POST method.	2
	(g)	Write a output for SQL queries (i) to (iii), which are based on the table: <b>STUDENT</b>	3

		given below:  Table : <b>STUDENT</b>																																																																
		<table border="1"> <thead> <tr> <th>RollNo</th> <th>Name</th> <th>Class</th> <th>DOB</th> <th>Gender</th> <th>City</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nanda</td> <td>X</td> <td>06-06-1995</td> <td>M</td> <td>Agra</td> <td>551</td> </tr> <tr> <td>2</td> <td>Saurabh</td> <td>XII</td> <td>07-05-1993</td> <td>M</td> <td>Mumbai</td> <td>462</td> </tr> <tr> <td>3</td> <td>Sanal</td> <td>XI</td> <td>06-05-1994</td> <td>F</td> <td>Delhi</td> <td>400</td> </tr> <tr> <td>4</td> <td>Trisla</td> <td>XII</td> <td>08-08-1995</td> <td>F</td> <td>Mumbai</td> <td>450</td> </tr> <tr> <td>5</td> <td>Store</td> <td>XII</td> <td>08-10-1995</td> <td>M</td> <td>Delhi</td> <td>369</td> </tr> <tr> <td>6</td> <td>Marisla</td> <td>XI</td> <td>12-12-1994</td> <td>F</td> <td>Dubai</td> <td>250</td> </tr> <tr> <td>7</td> <td>Neha</td> <td>X</td> <td>08-12-1995</td> <td>F</td> <td>Moscow</td> <td>377</td> </tr> <tr> <td>8</td> <td>Nishant</td> <td>X</td> <td>12-06-1995</td> <td>M</td> <td>Moscow</td> <td>489</td> </tr> </tbody> </table> <p>(i) SELECT COUNT(*), City FROM STUDENT GROUP BY CITY HAVING COUNT(*)&gt;1;  (ii) SELECT MAX(DOB),MIN(DOB) FROM STUDENT;  (iii) SELECT NAME,GENDER FROM STUDENT WHERE CITY="Delhi";</p>	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	
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	(h)	Write SQL queries for (i) to (iv), which are based on the table: <b>STUDENT</b> given in the question 4(g):  (i) To display the records from table student in alphabetical order as per the name of the student. (ii) To display Class, Dob and City whose marks is between 450 and 551. (iii) To display Name, Class and total number of students who have secured more than 450 marks, class wise (iv) To increase marks of all students by 20 whose class is "XII"	4																																																															
<b>SECTION-D</b>																																																																		
Q.5	(a)	It is an internet service for sending <u>written</u> messages electronically from one <u>computer</u> 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)	What can be done to reduce the risk of identity theft? Write any two ways.	2																																																															

<p>(d)</p>	<div data-bbox="430 205 1091 663" style="border: 1px solid black; padding: 5px;"> <p><b>From:</b> Internal Revenue Service [mailto:admin@irs.gov]  <b>Sent:</b> Wednesday, March 01, 2006 12:45 PM  <b>To:</b> <a href="mailto:john.doe@jdoe.com">john.doe@jdoe.com</a>  <b>Subject:</b> IRS Notification - Please Read This .</p> <hr/> <p>After the last annual calculations of your fiscal activity we have determined that you are eligible to receive a tax refund of <b>\$63.80</b>. Please submit the tax refund request and allow us 6-9 days in order to process it.</p> <p>A refund can be delayed for a variety of reasons. For example submitting invalid records or applying after the deadline.</p> <p>To access the form for your tax refund, please <a href="#">click here</a></p> </div> <p>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.</p> <p>Identify and explain the cybercrime being discussed in the above scenario.</p>	<p>2</p>
<p>(e)</p>	<p>Differentiate between open source and open data.</p>	<p>2</p>
<p>(f)</p>	<p>Enumerate any two disability issues while teaching and using computers</p>	<p>2</p>