COMPUTER SCIENCE - NEW (083)
SAMPLE QUESTION PAPER -2 (2019-20)
CLASS XII

Max. Marks: 70   **Time: 3 hours**

General Instructions:
- All questions are compulsory.
- This question paper consists of 38 questions divided into four sections A, B, C and D.
  - Section A: Unit-1 (PCT-2)
  - Section B: Unit-2 (CN)
  - Section C: Unit-3 (DM-2)
  - Section D: Unit-4 (SLE-2)
- There is no overall choice. However, an internal choice has been provided in question no. 13, 14, 16, 17 and 30.

	SECTION – A	
1.	Which function is used to remove leading and trailing whitespaces of a string?	1
2.	What is None Literal in Python?	1
3.	Name the function/method required to: (i) check if a string contains only digits. (ii)to remove the item from the given position in the list.	1
4.	How is variable length keyword argument specified in the function heading?	1
	Qno. 5 to 6: Choose the correct answer	
5.	Which of the following is not a valid identifier? (i) nonlocal (ii) false (iii) my_sql (iv) eval	1
6.	Which Python library module among the following is used for accessing websites from within the program? (i) tkinter (ii) numpy (iii) statistics (iv) webbrowser	1

	Qno. 7 to 8: Fill in the Blanks	
7.	_____ is the smallest individual unit in a program.	1
8.	sin() is invoked by importing _____.	1

9.	Rewrite the following code in Python after removing all syntax errors. Underline each correction done in the code.
	
	  STRING=""”WELCOME
	  NOTE”"
	  for S in range[0,8]
	       print STRING(S)
	  print(S+STRING)
		2

10.	Find and write the output of the following Python code:
	def work(w,v=30) :
	    w= w+v/v
	    print(w)
	    u=str(v+w)
	    v=str(v)
	    if u.isalnum():
	        return u+"#"+v
	    else:
	        return False
	    z=work(25)
	    print(z)
		2

11.	What do you understand by scope of variables?	2

12.	What are the possible outcome(s) executed from the following code? Also specify the maximum and minimum values that can be assigned to the variable NUM.
	
	  import random
	  NAV=["LEFT","FRONT","RIGHT","BACK"]
	  NAVG=""
	  for J in range(NUM,1,-1):
	      NAVG=NAVG+NAV[J]
		2

2

	print(NAVG) (i) **BACKRIGHT** (ii) **BACKRIGHTFRONT** (iii) **BACK** (iv) **LEFTFRONTRIGHT**	
13.	Given an ndarray p as [1,2,3,4]. Write a code to plot a bar chart having bars for p and p**2(with red color) and another bar for p and p*2 (with blue color), keeping the width of each bar as 0.3. Assume that all the required libraries have been imported. **OR** Plot a bar graph for CITIES and POPULATION with labeling in x-axis and y-axis respectively. Assume that all the required libraries have been imported. CITIES = ['Delhi', 'Mumbai', 'Bangalore', 'Hyderabad'] POPULATION = [19000000, 18400000, 8430000, 6810000]	2
14.	Write a function **ARTICLES**() in Python to count all the articles "the", "a" and "an" present in a text file "**BOOK.TXT**". Ensure that "the", "a" and "an" are counted as independent words and not as a part of any other word. **OR** Write a function in Python to read lines from a text file '**INDIA.TXT**', to find and display the occurrence of the word "India".	2
15.	Write the definition of a method **ZeroEnding**(**SCORES**) to add those values in the list of **SCORES**, which are ending with zero(0) and display the sum.	3
16.	Write a Recursive function in Python **Bsearch(AR,L,U,X)** to search the given element **X** to be searched from the list **AR** having **U** elements where **L** represents lower bound and **U** represents upper bound. **OR** Write a Recursive code in Python for **FIB()** that takes **N** as a parameter and returns the Nth Fibonacci number where **N** is an integer. Take the first term as 0.	3

17.	Write **AddScore**(GAME) and **DelScore**(GAME) methods in Python to add a new SCORE in the list of scores of a GAME and remove a SCORE from a list of scores of a GAME, considering these methods to act as push and pop operations of the Stack data structure.	4

<div align="center">OR</div>

	Write QueueUp(Client) and QueueDel(Client) methods in Python to add a new Client and delete a Client from a list of Client names, considering them to act as insert and delete operations of Queue data structure.	

<div align="center">SECTION – B</div>

18.	Which protocol is used for transferring files from one computer to another?	1
19.	Give two examples of IoT.	1
20.	Define rate modulation.	1
21.	Give the full forms of the following: (i) SMTP (ii) HTTPS (iii) SCP (iv) VoIP	2
22.	Give two differences between 3G and 4G telecommunication technologies.	2
23.	Differentiate between MAC and IP addresses.	2
24.	Name any two network tools and their use.	2
25.	Cogoizant technologies has set up their new center at Cochin for its office and web based activities. They have 4 blocks of buildings named Block A, Block B, Block C and Block D.	4

<div align="center">No. of Computers</div>

Block A	25
Block B	50
Block C	125
Block D	10

Distance between the Blocks	
Block A to Block B	50m
Block B to Block C	150m
Block C to Block D	25m
Block A to Block D	170m
Block B to Block D	125m
Block A to Block C	90m

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

(ii) Suggest a cable layout of connections between the blocks.

(iii)The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible.Suggest an economic way to connect it with reasonably high speed.

(iv)Describe where the following devices are required?
   (a) Hub/Switch   (b) Repeater

SECTION – C

26.	Table Club has 4 rows and 3 columns. Table Member has 3 rows and 4 columns.What will be the degree of the Cartesian product of them?	1
27.	Which clause is used with UPDATE command to update the selected rows?	1
28.	Which aggregate function is used to calculate the average of the given data?	1
29.	Name the SQL constraint which is used to ensure that all values in the column are different?	1
30.	Differentiate between ALTER TABLE command and UPDATE command. **OR**	2

	Differentiate between CHAR and VARCHAR data types.	
31.	Differentiate between Django GET and Django POST methods.	2
32.	Write the output for SQL queries (i) to (iii) and write SQL queries for (iv) to (vii), which are based on the table: FACULTY.	7

Table: FACULTY

Fcode	Fname	Sex	Salary	Subject	JoinDate
F1001	Hari Charan Jha	M	101,000	English	2000-10-11
F1004	Merry Jose	F	202,000	Programming	2003-11-30
F1002	Fardeen Khan	M	202,000	Web Design	2001-09-06
F1005	Priya Maheshwari	F	201,000	Web Design	2004-12-15
F1009	Tanya Santan	F	203,000	Programming	2006-12-31
F1006	Amar Anshul	M	108,000	Data Structure	2005-05-02
F1008	Avinash Choudhari	M	105,000	Mathematics	2002-03-15

(i) Select COUNT(*), Subject from FACULTY GROUP BY Subject
    HAVING COUNT(*)>1;

(ii) Select SUM(Salary) from FACULTY;

(iii)Select MAX(JoinDate),MIN(JoinDate) from FACULTY;

(iv) To display the records from table FACULTY in alphabetical order
    as per the name of faculty.

(v) To display Fcode, Fname, JoinDate, Salary of all faculty members
    in descending order of their salary.

(vi) To increase the salary of all faculties by 2000, who are either
    teaching the subject **"Programming"** or teaching the subject
    "Mathematics".

(vii)To display details of all faculties whose name starts with letter
    'A'.

SECTION – D

Qno. 33 to 34: Fill in the blanks

33.	Downloading or accessing the movie which is not available for free is termed as _____.	1

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34.	India's IT Act came into force in _____.	1
35.	What is Cybercrime? Give example.	2
36.	Differentiate between open source and open data.	2
37.	Mention any two benefits of E-waste management.	2
38.	Explain any two ways in which technology can help students with disabilities.	2