Army Public School, Panagarh

Pre-Board- I (2020-21)

Class-XII   **Time: 3 hrs**

Sub: Computer Science   **M.M: 70**

General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
   a. Section – I is short answer questions, to be answered in one word or one line.
   b. Section – II has two case studies questions. Each case study has some case-based sub- parts. An examinee is to attempt all subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
   a. Section-I is short answer questions of 2 marks each.
   b. Section-II is long answer questions of 3 marks each.
6. Section-III is very long answer questions of 5 marks each.
7. All programming questions are to be answered using Python Language only

Part-A

Section-I

Select the most appropriate option out of the options given for each question. Attempt all the questions.

1	Out of the following, find those identifiers, which cannot be used for naming Variable or Functions in a Python program: a) Price*Qty b) class c) For d) _Amount	**1**
2	Given the lists L=[1,3,6,82,5,7,11,92] , write the output of print(L[3:7])	**1**
3	.... statement is given for importing csv module into your program.	**1**
4	Identify the valid membership operator in Python from the following. a) ? b) in c) ** d) is	**1**
5	This protocol is used to implement remote login. What is the name of the protocol?	**1**

6　　Name the Python Library modules which need to be imported to invoke the following functions :　　**1**
  a) pow()
  b) dump()

7　　Which is the correct form of declaration of dictionary?　　**1**

(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']

8　　Name the built-in mathematical function / method that is used to return sin value of a number.　　**1**

9　　Name the protocol that is used to secure data transmission.　　**1**

10　　What can be done to reduce the risk of identity theft? Write any one way.　　**1**

11　　Which clause is used to remove the duplicating rows of the table?　　**1**

12　　In SQL, what is the use of IS NULL operator?　　**1**

13　　Which key word is used to sort the records of a table in descending order?　　**1**

14　　Which of the following is a TCL command?　　**1**

  a) SELECT　 b) COMMIT　　c) INSERT　　　　d) CREATE

15　　Identify the valid declaration of L: L = [1, 23, 'hi', 6].　　**1**
(i) list　　　(ii) dictionary　　　　　(iii) array　　　　(iv) tuple

Section-II

Both the Case study based questions are compulsory. Attempt all the sub parts from each question.

16

Ravi received a mail form IRS department (as shown above). On clicking " ClickHere" ,he was taken to a site designed to imitate an official-looking website, such as IRS.gov. He uploaded some important information on it.

  (a) Identify and explain the cybercrime being discussed in the above　　**1**
     scenario.
  (b) Write the steps that Ravi should take to overcome the situation.　　**1**

  (c) What preventive measures he should have followed? Write any two.　　**2**

17   Manoj Kumar of class 12 is writing a program to create a binary file "test.dat"
      which will contain list of numbers. He has written the following code. As a
      programmer, help him to successfully execute the given task.

      import_____   # Line 1

      def bin_create( )   # to write / add data into the file
          f=open(' test.dat','_____')   # Line 2
          list1=['we',3.5,6,7,89,34]
          _____.(list1.f)   #Line 3

          Print("information added")
          f._____   #Line 4
      bin_create( )

      (a) Name the module he should import in Line 1.   **1**
      (b) In which mode, Manoj should open the file to add data into the file **1**
      (c) Fill in the blank in Line 3.   **1**
      (d) Fill in the blank in Line 4 to close the file.   **1**

                              Part – B

                              Section-I
18   Evaluate the following expressions: **2**
          a) 6 * 3 + 4**2 // 5 – 8
          b) 15.0 / 4 + (8 + 3.0) and 7 > 12 and not 18 > 3

19   Observe the following table and answer the parts(i) and(ii) accordingly **2**
      Table:Product

Pno	Name	Qty	PurchaseDate
101	Pen	102	12-12-2011
102	Pencil	201	21-02-2013
103	Eraser	90	09-08-2010
109	Sharpener	90	31-08-2012
113	Clips	900	12-12-2011

      i) Write the names of most appropriate columns, which can be considered as
      candidate keys.

      ii) What is the degree and cardinality of the above table?
20   Expand the following terms: **2**
              a. HTTP   b. SFTP c. VOIP   d. IPR

21   Differentiate between actual parameter(s) and a formal parameter(s) with a   **2**
suitable example for each.

22   Rewrite the following code in Python after removing all syntax   **2**
error(s). Underline each correction done in the code.

```
Num = int(input("Number:"))
Sum = 0
for i in range(10,Num,3)
    Sum+=i
    if i%2=0:
        print (i*2)
    Else:
        print( i*3)
    print (Sum)
```

23   What possible outputs(s) are expected to be displayed on screen at the time of   **2**
execution of the program from the following code ? Also specify the maximum
values that can be assigned to each of the variables START and END.

```
import random
SCORE=[20,40,10,30,15];
START=random.randint(1,3) END=random.randint(2,4)

for I in range(START,END+1):

print SCORE([I],"&",)
```

(i) 10&40&20&	(ii) 10&30&15&
(iii) 40&10&30&	(iv) 20&40&10&

24   What do you understand by Foreign Keys in a table? Give a suitable example of   **2**
Candidate Keys from a table containing some meaningful data.

25   Differentiate between *fetchone( )* and *fetchmany( )* methods with suitable   **2**
examples for each.

26   Write the full forms of DDL and DML. Write any two commands of DML in   **2**
SQL.

27   Find and write the output of the following Python code: **2**

```
for Name in ['John', 'Garima','Seema','Karan']:

    print (Name)
    if Name[0]=='S':

        break

    else:
        print( 'Completed!' )

print("Welldone!")
```
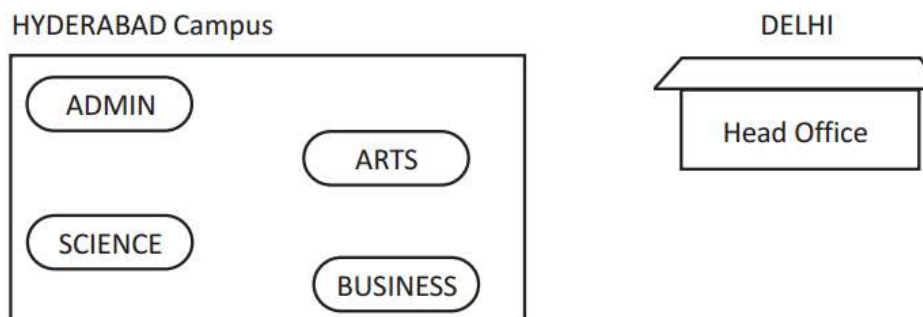
Section- II

28   Write definition of a method EvenSum(NUMBERS) to add those values in the   **3**
list of NUMBERS, which are odd.

29   Write a function in Python that counts the number of "Hello" or "Hiiii"   **3**

words present in a text file "Read.TXT".

30   Write the difference between write( ) and writelines( ). Illustrate with   **3**

example.

31   Write DoPush(Customer) and DoPop(Customer) methods/function in   **3**
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.

Section-III

32   Xcelencia Edu Services Ltd. is an educational organization. It is planning to set   **5**
up its India campus at Hyderabad with its head office at Delhi. The Hyderabad
campus has 4 main buildings – ADMIN, SCIENCE, BUSINESS and ARTS.
You as a network expert have to suggest the best network related solutions for
their problems raised in (*i*) to (*v*), keeping in mind the distances between the
buildings and other given parameters.

Shortest distances between various buildings:

ADMIN to SCIENCE	65m
ADMIN to BUSINESS	100m
ADMIN to ARTS	60m
SCIENCE to BUSINESS	75m
SCIENCE to ARTS	60m
BUSINESS to ARTS	50m
DELHI Head Office to HYDERABAD Campus	1600Km

Number of computers installed at various buildings are as follows:

ADMIN	100
SCIENCE	85
BUSINESS	40
ARTS	12
DELHI Head Office	20

(i) Suggest the most appropriate location of the server inside the HYDERABAD campus (out of the 4 buildings), to get the best connectivity for maximum number of computers. Justify your answers.

(*ii*) Suggest and draw the cable layout to efficiently connect various buildings within the HYDERABAD campus for connecting the computers.

(*iii*) Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet users within the campus?

(*iv*) Which of the following will you suggest to establish the online face-to-face communication between the people in the Admin Office of HYDERABAD campus and DELHI Head Office?

(*a*) E-mail   (*b*) Text Chat   (*c*) Video Conferencing   (*d*) Cable TV

(v) 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.

33 Write SQL queries for (i) to (iii) and output for SQL queries (iv) to (v), which **5** are based on the table: STUDENT given below:

Table : **STUDENT**

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)   To display Name, Class and total number of students who have secured more than 450 marks, class wise.
   (ii)   To increase marks of all students by 20 whose class is "XII"
   (iii)   SELECT COUNT(*), City FROM STUDENT GROUP BY CITY HAVING COUNT(*)>1;
   (iv)   SELECT MAX(DOB),MIN(DOB) FROM STUDENT;
   (v)   SELECT NAME,GENDER FROM STUDENT WHERE CITY="Delhi";

34 Write a program to search a record from the binary file "student.dat" on the **5** basis of roll number.

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OR

</div>

Write a program that performs the following operations on a string:

(a) Prompt the user to input a string.

(b) Extract all the digits from the string.

(c) If there are digits in the inputted string:

• Calculate and display the sum of digit.

• Also display:

  ▪ The original string

  ▪ The digits

  ▪ The sum of the digits

(d) If there are no digits:

• Display the original string along with an appropriate message as "No Digits are present"