KENDRIYA VIDYALAYA SANGATHAN
GUWHATI REGION
Pre – Board Examination: 2022-23
SET – I
Class: XII
SUBJECT: COMPUTER SCIENCE (083)

TIME: 03:00 HRS.   *MM: 70*

General Instructions –
1. *This question paper contains five sections, Section A to E.*
2. *All questions are compulsory.*
3. *Section A have 18 questions carrying 01 mark each.*
4. *Section B has 07 Very Short Answer type questions carrying 02 marks each.*
5. *Section C has 05 Short Answer type questions carrying 03 marks each.*
6. *Section D has 03 Long Answer type questions carrying 05 marks each.*
7. *Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 against part 3 only.*
8. *All programming questions are to be answered using Python Language only.*

	SECTION – A	
1.	State True or False "Python language is Cross platform language."	1
2.	Which of the following is an invalid identifier in Python? (a) Max_marks (b) Max-marks (c) Maxmarks (d) _Max_Marks	1
3.	Predict the output. marks = {"Ashok":98.6, "Ramesh":95.5} print(list(marks.keys())) (a) 'Ashok', 'Ramesh' (b) 98.6, 95.5 (c) ['Ashok','Ramesh'] (d) ('Ashok','Ramesh')	1
4.	Consider the given expression: **not True and False or not True** Which of the following will be correct output if the given expression is evaluated? (a) True (b) False (c) NONE (d) NULL	1

5.	Write the output:-
	     myTuple = ("John", "Peter", "Vicky")
	     x = "#".join(myTuple)
	     print(x)
	(a) #John#Peter#Vicky
	(b) John#Peter#Vicky
	(c) John#Peter#Vicky#
	(d) #John#Peter#Vicky#
		1

6.	Which of the following mode in file opening statement results or generates an error if the file does not exist? (a) r+ (b) a+ (c) w+ (d) None of the above	1
7.	Fill in the blank: _____ command is used to ADD a column in a table in SQL. (a) update (b)remove (c) alter (d)drop	1
8.	Which of the following is a DML command? (a) CREATE (b) ALTER (c) INSERT (d) DROP	1

9.	Which of the following statement(s) would give an error after executing the following code?
	
	    S="Welcome to my python program" # Statement 1
	    print(S) # Statement 2
	    S="Python is Object Oriented programming" # Statement 3
	    S= S * "5" # Statement 4
	    S=S+"Thank you" # Statement 5
	
	(a) Statement 3
	(b) Statement 4
	(c) Statement 5
	(d) Statement 4 and 5
		1

10.	Fill in the blank: _____ is a non-key attribute, whose values are derived from the primary key of some other table. (a) Foreign Key (b) Primary Key (c) Candidate Key (d) Alternate Key	1
11.	Which SQL keyword is used to retrieve only unique values? (a) DISTINCTIVE (b) UNIQUE (c) DISTINCT (d) DIFFEREN	1
12.	The correct syntax of seek() is: (a) file_object.seek(offset [, reference_point]) (b) seek(offset [, reference_point]) (c) seek(offset, file_object) (d) seek.file_object(offset)	1
13.	Fill in the blank: _____is a communication methodology designed to deliver electronic mail (E-mail) over the internet. . (a) VoIP (b) HTTP (c) PPP (d) SMTP	1
14.	What will the following expression be evaluated to in Python? print(2**3 + (5 + 6)**(1 + 1)) (a) 129 (b)8 (c) 121 (d) None	1
15.	Which function is used to display the total number of records from a table in a database? (a) sum(*) (b) total(*) (c) count(*) (d) return(*)	1
16.	Which of the following function is used to established connection between Python and MySQL database – (a) connection() (b) connect() (c) Connect() (d) None	1

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as
  (a) Both A and R are true and R is the correct explanation for A
  (b) Both A and R are true and R is not the correct explanation for A
  (c) A is True but R is False
  (d) A is false but R is True	

17.	Assertion (A): A binary file stores the data in the same way as as stored in the memory. Reason (R): Binary file in python does not have line delimiter.	1
18.	Assertion (A):- If the arguments in a function call statement match the number and order of arguments as defined in the function definition, such arguments are called positional arguments. Reasoning (R):- During a function call, the argument list first contains default argument(s) followed by positional argument(s).	1

	SECTION – B	

19.	Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.
	
	      Num=int(rawinput("Number:"))
	      sum=0
	          for i in range(10,Num,3)
	              sum+=1
	              if i%2=0:
	                  print(i*2)
	              else:
	                  print(i*3)
	              print (Sum)
		2

20.	Write two points of difference between LAN & WAN. OR Write two points of difference between XML and HTML.	2

21.	(a) Given is a Python string declaration:
	          str="CBSE Examination@2022"
	   Write the output of: print(str[-1:-15:-2])
	
	(b) Write the output of the code given below:
	d = {"name": "Akash", "age": 16}
	d['age'] = 27
	d['city'] = "New Delhi"
	print(d.items())
		2

22.	Explain the use of 'Primary Key' in a Relational Database Management System. Give example to support your answer.	2
23.	(a) Expand the following terms: SMTP, FTP (b) What do you mean by MODEM?	2

24.	Predict output of the following code fragment –
	      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)
	
	                            OR
	Predict output of the following code fragment –
	      tuple1 = (11, 22, 33, 44, 55 ,66)
	      list1 =list(tuple1)
	      new_list = []
	      for i in list1:
	          if i%2==0:
	             new_list.append(i)
	      new_tuple = tuple(new_list)
	print(new_tuple)
		2

25.	Differentiate between count(column_name) and count(*) functions in SQL with appropriate example.
	
	                           OR
	
	Categorize the following commands as DDL or DML:
	      SELECT, UPDATE, ALTER, DROP
		2

SECTION – C		
26.	(a) Consider the following tables – Sales and Item: Table: Sales 	SCode	SName	SCITY
S01	HITESH	DELHI
S02	SANDEEP	MUMBAI
S03	MAHESH	BANGALORE	 Table: Item 	SCode	IPRICE	ICity
S01	1200	Delhi
S02	2500	Mumbai
S01	3200	Maharashtra | What will be the output of the following statement? SELECT SNAME,SCITY,IPRICE FROM sales, Item where SCITY="Delhi" and Sales.SCode =Item.SCode; (b) Write the output of the queries (i) to (iv) based on the table, TABLE: EMPLOYEE TABLE: EMPLOYEE | EMPNO	NAME	DATE_OF_ JOINING	SALARY	CITY
---	---	---	---	---
5001	SUMIT SINGH	2012-05-24	55000	JAIPUR
5002	ASHOK SHARMA	2015-10-25	65000	DELHI
5003	VIJAY SINGH	2009-09-09	85000	JAIPUR
5004	RAKESH VERMA	2020-12-21	60000	AGRA
5006	RAMESH KUMAR	2011-01-22	72000	DELHI	 (i) SELECT AVG(SALARY) FROM EMPLOYEE WHERE CITY LIKE '%R'; (ii) SELECT COUNT(*) FROM EMPLOYEE WHERE DATE_OF_JOINING BETWEEN '2011-01-01' AND '2020-12-21'; (iii) SELECT DISTINCT CITY FROM EMPLOYEE WHERE SALARY >65000; (iv) SELECT CITY, SUM(SALARY) FROM EMPLOYEE GROUP BY CITY;	1+ 2= 3
27.	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. OR Write a function RevText() to read a text file "Story.txt" and Print only word starting with 'I' in reverse order. Example: If value in text file is: INDIA IS MY COUNTRY Output will be: AIDNI SI MY COUNTRY.	3
28.	**(a) Consider the following tables ACTIVITY and COACH.** Write SQL commands for the statements (i) to (iv) and give the The outputs for the SQL queries (v) to (viii) – Table: ACTIVITY	2+ 1= 3

ACode	ActivityName	ParticipantsNum	PrizeMoney	ScheduleDate
1001	Relay 100X4	16	10000	23-Jan-2004
1002	High Jump	10	12000	12-Dec-2003
1003	Shot Put	12	8000	14-Feb-2004
1005	Long Jump	12	9000	01-Jan-2004
1008	Discuss Throw	10	15000	19-Mar-2004

Table: COACH

PCode	Name	ACode
1	Ahmed Hussain	1001
2	Ravinder	1008
3	Janila	1001
4	Naaz	1003

(i) To display the name of all activities with their Acodes in descending order.
(ii) To display sum of prizemoney for each of the number of participants groupings (as shown in column ParticipantsNum 10,12,16)
(iii) To display the coach's name and ACodes in acending order of ACode from the table COACH.
(iv) To display the content of the Activity table whose ScheduleDate is earlier than 01/01/2004 in ascending order of ParticipantsNum.

(b) Write the command to view all tables in a database.

29.	Write a function SQUARE_LIST(L), where L is the list of elements passed as argument to the function. The function returns another list named 'SList' that stores the Squares of all Non-Zero Elements of L. For example: If L contains [9,4,0,11,0,6,0] The SList will have - [81,16,121,36]	3

30.	A list contains following record of a customer:
	       [Customer_name, Phone_number, City]
	
	Write the following user defined functions to perform given operations on the stack named 'status':
	    (i) Push_element() - To Push an object containing name and Phone number of customers who live in Goa to the stack
	    (ii) Pop_element() - To Pop the objects from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack.
	
	For example:
	If the lists of customer details are:
	
	["Ashok", "9999999999","Goa"]
	["Avinash", "8888888888","Mumbai"]
	["Mahesh","77777777777","Cochin"]
	["Rakesh", "66666666666","Goa"]
	
	The stack should contain:
	["Rakesh","66666666666"]
	["Ashok"," 99999999999"]
	The output should be:
		3

["Rakesh","66666666666"]
["Ashok","99999999999"]
Stack Empty

OR

Vedika has created a dictionary containing names and marks as key-value pairs of 5 students. Write a program, with separate user-defined functions to perform the following operations:

    (i)   Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 70.
    (ii)   Pop and display the content of the stack.
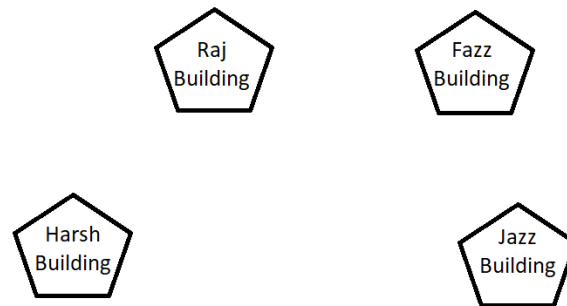
The dictionary should be as follows:

d={"Ramesh":58, "Umesh":78, "Vishal":90, "Khushi":60, "Ishika":95}

Then the output will be:
          Umesh Vishal Ishika

SECTION – D

31.

Ravya Industries has set up its new center at Kaka Nagar for its office and web based activities. The company compound has 4 buildings as shown in the diagram below:

Distance between various blocks/locations:

Harsh to Raj Building	50m
Raj to Fazz Building	60m
Fazz to Jazz Building	25m
Jazz to Harsh Building	170m
Harsh to Fazz Building	125m
Raj to Jazz Building	90m

Number of computers in each building are -
Harsh – 15
Raj   - 150
Fazz   - 15
Jazz   - 25

    (i)   Suggest a cable layout of connections between the buildings.
    (ii)   Suggest the most suitable place (i.e. building) to house the server of this organisation with a suitable reason.
    (iii)   Suggest the placement of the following devices with appropriate reasons:
           a. Hub / Switch
           b. Repeater

1
1

1

	(iv)	The organisation is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.	1
	(v)	Suggest a device/software to be installed in the Campus to take care of data security.	1

(a) Write the output of the code given below:

```python
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].islower():
            m=m+s[i].upper()
        elif s[i].isdigit():
            m=m+"0"
        else:
            m=m+'#'
    print(m)
fun('CBSE@12@Exam')
```

(b) The code given below inserts the following record in the table EMP:

EmpID – integer
Name – string
Salary – integer

Note the following to establish connectivity between Python and MYSQL:
□ Username is root
□ Password is kvs
□ The table exists in a MYSQL database named KVS.
□ The details (EmpID, Name, Salary) are to be accepted from the user.

Write the following missing statements to complete the code:
Statement 1 – to form the cursor object
Statement 2 – to execute the command that inserts the record in the table EMP.
Statement 3- to add the record permanently in the database

```python
import mysql.connector as mysql
def sql_data():
    con1=mysql.connect(host="localhost",user="root",password="kvs", database="KVS")
    mycursor=_____                #Statement 1
    eno=int(input("Enter Employee ID : "))
    name=input("Enter name : ")
    sal=int(input("Enter Salary : "))
    querry="insert into EMP values({},'{}',{})".format(eno,name,sal)
    _____                # Statement 2
    _____                # Statement 3
    print("Data Added successfully")
```

OR

32. column value: **2+ 3**

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

(b) The code given below reads the following record from the table named student and displays only those records who have marks greater than 75:

RollNo – integer
Name – string
Clas – integer
Marks – integer

Note the following to establish connectivity between Python and MYSQL:
   ▫ Username is root
   ▫ Password is tiger
   ▫ The table exists in a MYSQL database named school.

Write the following missing statements to complete the code:
Statement 1 – to form the cursor object
Statement 2 – to execute the query that extracts records of those students whose marks are greater than 75.
Statement 3- to read the complete result of the query (records whose marks are greater than 75) into the object named data, from the table student in the database.

```
import mysql.connector as mysql
def sql_data():
        con1=mysql.connect(host="localhost",user="root",password="tiger",
        database="school")
        mycursor=_____ #Statement 1
        print("Students with marks greater than 75 are : ")
        _____ #Statement 2
        data=_____ #Statement 3
        for i in data:
                print(i)
        print()
```

33.	What is the advantage of using a csv file for permanent storage?
	Write a Program in Python that defines and calls the following user defined functions:
	    (i) ADDPROD() – To accept and add data of a product to a CSV file 'product.csv'. Each record consists of a list with field elements as prodid, name and price to store product id, employee name and product price respectively.
	    (ii) COUNTPROD() – To count the number of records present in the CSV file named 'product.csv'.
	 OR
	Give any one point of difference between a binary file and a csv file.
	Write a Program in Python that defines and calls the following user defined functions:
		5

	(i) add() – To accept and add data of a to a CSV file 'stud.csv'. Each record consists of a list with field elements as admno, sname and per to store admission number, student name and percentage marks respectively. (ii) search()- To display the records of the students whose percentage is more than 75.	

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SECTION – D

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34.	Rashmi creates a table FURNITURE with a set of records to maintain the records of furniture purchased by her. She has entered the 6 records in the table. Help her to find the answers of following questions:- <table><tr><th>FID</th><th>NAME</th><th>DATE OF PURCHASE</th><th>COST</th><th>DISCOUNT</th></tr><tr><td>B001</td><td>Double Bed</td><td>03-Jan-2018</td><td>45000</td><td>10</td></tr><tr><td>T010</td><td>Dining Table</td><td>10-Mar-2020</td><td>51000</td><td>5</td></tr><tr><td>B004</td><td>Single Bed</td><td>19-Jul-2021</td><td>22000</td><td>0</td></tr><tr><td>C003</td><td>Long Back Chair 6</td><td>30-Dec-2016</td><td>12000</td><td>3</td></tr><tr><td>T006</td><td>Console Table</td><td>17-Nov2019</td><td>15000</td><td>12</td></tr><tr><td>B006</td><td>Bunk Bed</td><td>01-Jan-2021</td><td>28000</td><td>14</td></tr></table> 1. Identify the Primay Key from the given table with justification of your answer. 2. If three more records are added and 2 more columns are added, find the degree and cardinality of the table. 3. (i) Write SQL command to insert one more data/record to the table (ii) Increase the price of furniture by 1000, where discount is given more than 10. OR (Option for part 3 only) 3. Write the statements to: (a) Delete the record of furniture whose price is less than 20000. (b) Add a column WOOD varchar with 20 characters.	1+ 1+ 2

35.	Mr. Deepak is a Python programmer. He has written a code and created a binary file "MyFile.dat" with **empid, ename and salary**. The file contains 15 records.
	    He now has to update a record based on the employee id entered by the user and update the salary. The updated record is then to be written in the file "temp.dat". The records which are not to be updated also have to be written to the file "temp.dat". If the employee id is not found, an appropriate message should to be displayed.
	    As a Python expert, help him to complete the following code based on the requirement given above:
	
	<pre>import _____ #Statement 1
	def update_rec():
	    rec={}
	    fin=open("MyFile.dat","rb")
	    fout=open("_____") #Statement 2
	    found=False
	    eid=int(input("Enter employee id to update salary : "))
	    while True:
	        try:
	            rec=_____ #Statement 3
	            if rec["empid"]==eid:
	                found=True
	                rec["salary"]=int(input("Enter new salary : "))
	                pickle._____ #Statement 4
	            else:</pre>
		4

```
                    pickle.dump(rec,fout)
            except:
                    break
        if found==True:
                print("The salary of employee id ",eid," has been updated.")
        else:
                print("No employee with such id is not found")
        fin.close()
        fout.close()
```

(i) Which module should be imported in the program? (Statement 1)
(ii) Write the correct statement required to open a temporary file named temp.dat.
(Statement 2)
(iii) Which statement should Deepak fill in Statement 3 to read the data from the binary
file, record.dat and in Statement 4 to write the updated data in the file, temp.dat?

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