KENDRIYA VIDYALAYA SANGATHAN MUMBAI REGION
PREBOARD EXAMINATION (2023-24)
CLASS XII
SUBJECT: COMPUTER SCIENCE (083)

Time allowed: 3 Hours Maximum Marks: 70

SET-1

General Instructions:

- Please check this question paper contains 35 questions.
- The paper is divided into 4 sections- A,B,C,D and E.
- Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.

Ques No	Question	Marks
	SECTION A	
1	State True or False: "In a Python loops can also have else clause"	1
2	What is the maximum width of numeric value in data type int of MySQL. a. 10 digits b. 11 digits c. 9 digits d. 12 digits	1
3	Which among the following list of operators has the highest precedence? +,-,**,%,/,<<,>>,and, or, += a. += b. ** c. and d. %	1

4	What is the output of the following code?
	Text = 'Happy hour12-3'
	L= ""
	for i in range(len(Text)):
	if Text[i].isupper():
	L=L+Text[i].lower()
	elif Text[i].islower():
	L=L+Text[i].upper()
	elif Text[i].isdigit():
	L=L+(Text[i]*2)
	else:
	L=L+'#'
	print(L)
	(A)hAPPY#HOUR1122#33
	(B)Happy#hOUR12#3
	(C) hAPPY#HOUR112233
	(D) Happy Hour11 22 33 #
		1

5	In MYSQL database, if a table, Student has degree 2 and cardinality 3, and another table, Address has degree 5 and cardinality 6, what will be the degree and cardinality of the Cartesian product of student and address? a. 6,18 b. 7,18 c. 10,9 d. 12,15	1

6	Praveen wants to transfer files and photos from laptop to his mobile. He uses Bluetooth Technology to connect two devices. Which type of network will be formed in this case. a. PAN b. LAN c. MAN d. WAN	1
7	What will be the output of the following Python code snippet? d1 = {"john":40, "peter":45} d2 = {"john":466, "peter":45} d1 > d2 a. True b. False c. Error d. None	1
8	Select the correct output of the code: a = "foobar" a = a.partition("o") (a) ["fo","","bar"] (b) ["f","oo","bar"] (c) ["f","o","bar"] (d) ("f","o","obar")	1
9	What will be the output of following code if a = “abcde” a [1:1] == a [1:2] type (a[1:1]) == type (a[1:2])	1
10	What possible outputs are expected to be displayed on the screen at the time of execution of the program from the following code? import random temp=[10,20,30,40,50,60] c=random.randint(0,4) for I in range(0, c): print(temp[i],”#”) a) 10#20# b) 10#20#30#40#50# c) 10#20#30# d) 50#60#	1
11	Radio-Waves, microwaves and infrared waves are types of a. Wireless transmission b. Guided medium c. Wired transmission d. unguided transmission	1

12	Consider the code given below:
	b=5
	def myfun(a):
	_____ # missing statement.
	b=b*a
	myfun(14)
	print(b)
	Which of the following statements should be given in the blank for # Missing statement, if the output produced is 70?
	a. global a b. global b=70
	c. global b d. global a=70
		1

13	State whether the following statement is True or False: An exception may be raised even if the program is syntactically correct.	1
14	Which of the following keywords will you use in the following query to display the unique values of the column dept_name? SELECT ---------- dept_name FROM Company; (a)All (b) key (c) Distinct (d) Name	1

15	Fill in the blank: In case of _____ switching, message is send in stored and forward manner from sender to receiver.	1
16	Which of the following functions returns current position of the file pointer. a. flush() b. tell() c. seek() d. offset()	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): List and Tuples are similar sequence types of Python, yet they are two different data types. Reason(R): List sequences are mutable and Tuple sequences are immutable.	1
18	Assertion (A): Python's built-in functions, which are part of the standard Python Librarycan directly be used without specifying their module name. Reason(R): Python's standard library's built-in functions are made available by default in the namespace of program.	1
	SECTION B	
19	(i) Expand the following terms: XML, SMTP (ii) Give the difference between XML and HTML. OR (i) Define the term baud with respect to networks. (ii) How is http different from https?	1+1=2

20	The following Python code is supposed to print the largest word in a sentence but there are few errors. Rewrite the code after removing syntax and logical errors and underline each corrections made.
	Str=input("Enter a sentence")
	word=split()
	print(word)
	maxlen=0
	largest=""
	for i in word:
	l=len(i)
	if(l>maxlen)
	largest=l
	print(largest)
		2

21	Write a function countwords( ) that read a file 'python.txt' and display the total number of words which begins by uppercase character. Example: Suppose the file have following text: 'Python is a powerful, user friendly and platform independent Language' Output of function should be : 2 OR	2

	Write a python function ALCount(), which should read each character of text file "STORY.TXT" and then count and display the number of lines which begins from character 'a' and '*l*' individually (including upper cases 'A' and 'L' too) Example: Suppose the file content is as below: A python is a powerful Language is user friendly It is platform independent Language Output of function should be : A or a: 1 L or l : 1	

22	Give output of the following:
	
	def ChangeLst():
	L=[]
	L1=[]
	L2=[]
	for i in range(1,10):
	L.append(i)
	for i in range(10,1,-2):
	L1.append(i)
	for i in range(len(L1)):
	L2.append(L1[i]+L[i])
	L2.append(len(L)-len(L1))
	print(L2)
	ChangeLst()
		2

23	Write the Python statement for each of the following tasks using BUILT-IN functions/methods only: (i) To insert an element 400 at the fourth position, in the list L1. (ii) To check whether a string named, message ends with a full stop/ period or not. OR A list named employeesalary stores salary of employees. Write the Python command to import the required module and (using built-in function) to display the most common salary value from the given list.	2
24	Ms. Ragini has just created a table named "Customer" containing columns Cname, Department and Salary. After creating the table, she realized that she has forgotten to add a primary key column in the table. Help her in writing an SQL command to add a primary key column Custid of integer type to the table Customer. Thereafter, write the command to insert the following record in the table: Custid- 555 Cname- Nandini Department: Management Salary- 45600 OR	

Manish is working in a database named CCA, in which he has created a table named "DANCE" containing columns danceID, Dancename, no_of_participants, and category.
After creating the table, he realized that the attribute, category has to be deleted from the table and a new attribute TypeCCA of data type string has to be added. This attribute TypeCCA cannot be left blank. Help Manish to write commands to complte both the tasks.

25 Predict the output of the following code

```
def Alter(M,N=50):
    M=M+N
    N=M-N
    print(M,"@",N)
    return(M)
A=200
B=100
A=Alter(A,B)
print(A,"#",B)
B=Alter(B)
print(A,"@",B)
```

SECTION C

26 Give the output of following, if the value of string is 'abacus@2023':

```
string= input( "Enter a string :")
count=3
while True:
    if string[0] == 'a':
        string= string[2 :]
    elif string[-1] == 'b':
        string =string [: 2]
    else:
        count+= 1
        break
print (string)
print(count)
```

3

27 Write the output of queries i) to iii) based on the table, LOANS given below:

1*3=3

Table : LOANS

AccNo	Cust_Name	Loan_Amount	Instalments	Int_Rate	Start_Date	Interest
1	R.K.Gupta	300000	36	12.00	2009-07-19	1200
2	S.P.Sharma	500000	48	10.00	2008-03-22	1800
3	K.P. Jain	300000	36	NULL	2007-03-08	1600
4	M.P.Yadav	800000	60	10.00	2008-12-06	2250
5	S.P.Sinha	200000	36	12.50	2010-01-03	4500
6	P.Sharma	700000	60	12.50	2008-06-05	3500
7	K.S. Dhall	500000	48	NULL	2008-03-05	3800

i) Select sum(Loan_Amount) from LOANS where Int_Rate > 10 ;
ii) Select max(Interest) from LOANS;
iii) Select count(*) from LOANS where Int_Rate is NULL;

28 Write a user – defined function countH() in Python that displays the number of lines starting with 'H' in the file 'Para.txt". Example , if the file contains: 3

Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.
Output: The line count should be 2.

OR

Write a function countmy() in Python to read the text file "DATA.TXT" and count the number of times "my" occurs in the file. For example , if the file "DATA.TXT" contains –
"This is my website. I have displayed my preference in the CHOICE section." The countmy( ) function should display the output as:
"my occurs 2 times"

29 Consider the table ACTIVITY given below: 3

ACODE	ACTIVITYNAME	PARTICIPANTSNUM	PRIZEMONEY	SCHEDULEDTE
1001	Relay Name	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

Based on the given table, write SQL queries for the following:
(i) Display the details of all activities in which prize money is more than 9000 (including 9000)
(ii) Increase the prize money by 5% of those activities whosw schedule date is after 1st of March 2023.
(iii) Delete the record of activity where participants are less than 12.

30 Rajiv has created a dictionary containing employee names and their salaries as key value pairs of 6 employees. 3
Write a program, with separate user defined functions to perform the following operations:
● Push the keys (employee name) of the dictionary into a stack, where the corresponding value (salary) is less than 85000.
● Pop and display the content of the stack.
For example:
If the sample content of the dictionary is as follows:

Emp={"Ajay":76000, "Jyothi":150000, "David":89000, "Remya":65000, "Karthika":90000, "Vijay":82000}

The output from the program should be:
Vijay Remya Ajay

SECTION D

31 Consider the following tables and answer the questions a and b: 1*4=4
Table: Garment

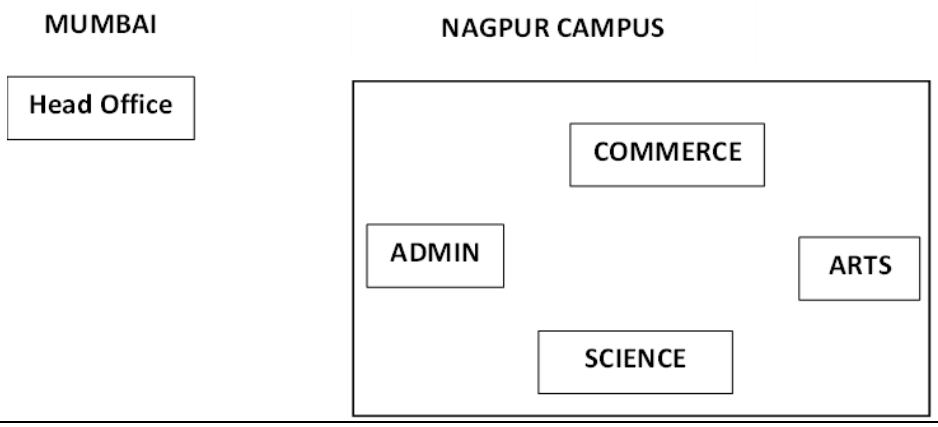
GCode	GNam e	Rate	Qty	CCode
G101	Saree	1250	100	C03
G102	Lehang a	2000	100	C02
G103	Plazzo	750	105	C02
G104	Suit	2000	250	C01
G105	Patiala	1850	105	C01

Table: Cloth

CCode	CName
C01	Polyester
C02	Cotton
C03	Silk
C04	Cotton-Polyester

Write SQL queries for the following:

i. Display unique quantities of garments.
ii. Display sum of quantities for each CCODE whose numbers of records are more than 1.
iii. Display GNAME, CNAME, RATE whose quantity is more than 100.
iv. Display average rate of garment whose rate ranges from 1000 to 2000 (both values included)

32	Write a program in Python that defines and calls the following functions: Insert() – To accept details of clock from the user and stores it in a csv file 'watch.csv'. Each record of clock contains following fields – ClockID, ClockName, YearofManf, Price. Function takes details of all clocks and stores them in file in one go. Delete() – To accept a ClockID and removes the record with given ClockID from the file 'watch.csv'. If ClockID not found then it should show a relevant message. Before removing the record it should print the record getting removed.	4
	SECTION E	
33	Superior Education Society is an educational Organization. It is planning to setup its Campus at Nagpur with its head office at Mumbai. The Nagpur Campus has 4 main buildings – ADMIN, COMMERCE, ARTS and SCIENCE. You as a network expert have to suggest the best network related solutions for their problems raised in a to e, keeping in mind the distances between the buildings and other given parameters: 	1*5=5

	Shortest distances between various buildings: ADMIN to COMMERCE - 55 m ADMIN to ARTS - 90 m ADMIN to SCIENCE - 50 m COMERCE to ARTS - 55 m COMMERCE to SCIENCE - 50 m ARTS to SCIENCE - 45 m MUMBAI Head Office to NAGPUR Campus – 850 KM Number of Computers installed at various buildings are as follows: ADMIN – 110 COMMERCE – 75 ARTS – 40 SCIENCE – 12 MUMBAI Head Office – 20 a. Suggest the most appropriate location of the server inside the Nagpur Campus to get the best connectivity for maximum number of computers. Justify your answer. b. Suggest and draw the cable layout to efficiently connect various buildings within the Nagpur campus for connecting the computers. c. Which of the following will you suggest to establish the online face-to-face communication between the people in the ADMIN office of Nagpur Campus and Mumbai Head office? i. Cable TV ii. E-mail iii. Video Conferencing iv. Text Chat d. Suggest the placement of following devices with appropriate reasons: i. Switch/Hub ii. Repeater e. Suggest the device/software to be installed in Nagpur Campus to take care of data security and unauthorized access.	
34	(i) Differentiate between r+ and w+ file modes in Python. (ii) Consider a file STUDENT.DAT, containing records of the following structure: [RollNumber, Name, Marks] Write a function copyData(), that reads contents from the file STUDENT.DAT and copies the records with marks more than 60 to the file named 'HIGHACHIEVERS.DAT'. The function should return number of records copied to the file HIGHACHIEVERS.DAT. OR (i) How are text file different from binary files? (ii) A Binary file BANK.DAT has the following structure: {CNO:[CNAME,ATYPE]} Where CNO-Customer account number CNAME-Customer name ATYPE-Account type Write a user defined function findType(atype), that accepts atype as parameter and displays all the records from the binary file BANK.DAT, that have the value of Account type as atype.	2+3=5
35	(i) Define the term foreign key with respect to RDBMS. Give one example to support your answer. (ii) Kiran wants to write a program in Python to insert the following record in the table named Flight in MYSQL database KV:	1+4=5

	• Flno (Flight number)-varchar • Source (source)- varchar • Destination (Destination)-varchar • Fare (fare)-integer Note the following to establish connectivity between Python and MySQL: • User name-root • Password – KVS@123 • Host-localhost The values of fields Flno,Source,Destination and Fare has to be accepted from the user. Help Kiran to write the program in Python. OR (i) Give the difference between primary key and alternate key. (ii) Shivaji has created a table named Game in MYSQL database Sports: • GID (Game ID)-integer • Gname(Game name)-varchar • No_of_Participants (number of participants)- integer Note the following to stablish connectivity between Python and MySQL: • Username: root • Password: KVS@123 • Host: localhost Shivaji, now wants to display the records of students whose number of participants are more than 10, Help Shivaji to write the program in Python.	