KENDRIYA VIDYALAYA SANGATHAN ,JABALPUR REGION
COMPUTER SCIENCE (083)
FIRST PRE-BOARD EXAMINATION,2025-26
Class-XII

Time Allowed: 3 Hrs.   **Maximum Marks: 70**

General Instructions:

- **This question paper contains 37 questions.**
- **All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.**
- **The paper is divided into 5 Sections- A, B, C, D and E.**
- **Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.**
- **Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.**
- **Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.**
- **Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.**
- **Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.**
- **All programming questions are to be answered using Python Language only.**
- **In-case of MCQ, text of the correct answer should also be written.**

Q No.	Section-A (21 x 1 = 21 Marks)	Marks
1	State if the following statement is True or False: Using the statistics module, the output of the below statements will be 20: import statistics statistics.mode([10, 20, 10, 30, 10, 20, 30])	1
2.	What will be the output of the following code? L = ["India", "Is", " My" ,"Country"] print(L[0][0] + L[1][-1]+ L[2][0]) a) IIm b) IsM c) IIM d) iTM	1

3	What will be the output of the following python dictionary operation?
	data = {'A':2000, 'B':2500, 'C':3000, 'A':4000}
	print(data)
	  a) {'A':2000, 'B':2500, 'C':3000, 'A':4000}
	  b) {'A':2000, 'B':2500, 'C':3000}
	  c) {'A':4000, 'B':2500, 'C':3000}
	  d) It will generate an error.
		1

4	Consider the given expression: print(not 3 or 4 and 'rku') Which of the following will be the correct output of the given expression? a) True b) False c) 4 d) rku	1
5	Which of the following is not a part of a DDL query? a) DROP b) MODIFY c) DISTINCT d) ADD	1
6	What will be the output of the following Python code? str= "AMAZING" print(str[-2:2:-1]) a) AZI b) NIZA c) NIZ d) ''	1

7	Write the output of the following Python code :
	d=[1,2,4,5]
	for x in d:
	   x=x+10
	print(d)
	  a) [11,12,14,15] b) [1,2,3,4]
	  c) [1,2,4,5] d) [ ]
		1

8	What will be the output of the following Python statement: print(-5%3 + 8//-3) a) 2 b) -2 c) 0 d) -4	1
9	Which of the following statement will select the MySql database 'sample' : a) SELECT SAMPLE; b) select sample; c) USE sample; d) desc sample;	1
10	Ravindra has written a query SELECT deptno, count(deptno) from emp having count(deptno)>3 group by deptno; but not getting the output, Write the correct query.	1

11	Write the correct output for the following code:
	for i in 'KVNO1':
	    print([i.lower()],end='@')
	   a) ['k']@['v']@['n']@['o']@['1'] b) ['k']@['v']@['n']@['o']@['1']@
	   c) k@v@n@o@1@ d) ['K']@['V']@['N']@['O']@['1']@
		1

12	Which of the following is **not** the possible output of the following code:
	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="#")
	   a) 50#60# b) 40#50#60#
	   c) 40# d) 40#60#70#
		1

13	Which of the following command is used to change the structure of the table in sql:
	   a)create table b) alter table
	   c) delete table d) drop table
		1

14	a= "All the best for Year 22025"
	a = a.partition('2')
	a= a[0] + ". " + a[1] + ". " + a[2]
	print (a)
	   a) All the best for Year . 2. 2025 b) All the best for Year . 2. 22025
	   c) All the best for Year 2 2025 d) All the best for Year 2 22025
		1

15	In SQL, a table consists of 3 columns and 5 rows. If 1 columns and 3 rows are added to the existing table, what will be the updated cardinality & degree of a table?
	   a) Degree: 7 Cardinality: 7 b) Degree: 4 , Cardinality : 8
	   c) Degree: 8 Cardinality: 4 d) Degree: 6 , Cardinality : 8
		1

16	Which of the following is used to receive emails over Internet? a) SMTP b) POP3 c) PPP d) VoIP	1

17	Which of the following is a valid sql statement?
	   a) ALTER TABLE student SET rollno INT(5);
	   b) UPDATE TABLE student MODIFY age = age + 10;
	   c) DROP FROM TABLE student;
	   d) DELETE FROM student;
		1

18	What is the size of IPv4 address? a)32 bits b) 64 bits c) 64 bytes d) 32 bytes	1
19	_____protocol provides the command line interface on a remote computer. a)FTP b) Telnet c) PPP d) SMTP	1

	Q20 and Q21 are Assertion(A) and Reason(R) 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.	

20	Assertion (A): There can be multiple Primary keys in a table. Reasoning (R): There can be multiple Candidate keys in a table.	1
21	Assertion (A): CSV module allows to write a single record into each row in CSV file using writerow() function. Reason (R): The writerow() function creates header row in csv file by default.	1
Q No.	**Section-B (7 x 2=14 Marks)**	**Marks**
22	A. Write the difference between type promotion and type casting in python. **Or** B. Write the difference between for loop and while loop.	2

23	Rohit has written a code to input a number and check whether it is even or odd number. His code is having errors. Rewrite the correct code and underline the corrections made.
	Def checkNumber(N):
	     status = N%2
	     return
	#__main__
	num=int(input(" Enter a number to check :))
	k=checkNumber(num)
	if k = 0:
	    print("This is EVEN number")
	else:
	    print("This is ODD number")
		2

24	(Answer using Python built-in methods/functions only): A. I. Write a statement to check whether the string named review having first character 'R'. II. Write a statement to print only values of a dictionary dict. **or** B. Predict the output of the following Python code: text="I work for you" print(text.replace("work","care")) print('*'.join("python"))	2
25	Write a function SQUARE_LIST(L), where L is the list of numbers passed as argument to the function. The function returns another list named 'SList' that stores the Squares of all Non-Zero Elements of L and stores '#' in place of Zeros. For example: If L contains [9,4,0,11,0,6,0] The SList will have - [81,16,#,121,#,36,#] **OR** Consider already created dictionary M that stores rollnos. and marks. Write a program to input rollno. and delete it from the dictionary. Display error message if the rollno. does not exist in the dictionary as "Rollno. not found".	2

26	Predict the output of the Python code given below :
	d1={'a':1,'b':2,'c':3}
	str1=''
	for i in d1:
	   str1=str1+str(d1[i])+","
	   str2=str1[:-1]
	print(str2[: :-1])
		2

27	A. Write suitable commands to do the following in MySQL.
	    I. To select the database named SAMPLE.
	    II. To show the list of tables inside the database named SAMPLE.
	OR
	B. Write the difference between DDL and DML in MySql.
		2

28	A. Define the following terms:
	    I. HUB
	    II. SWITCH
	 OR B. I. Expand the following terms: NIC and POP3
	      II. Differentiate between web page and website.
		2

Q No.	**Section-C (3 x 3 = 9 Marks)**	**Marks**
29	A. Write a Python function Articlecnt() that displays number of articles (**a, an, the**) are present in a text file named "poem.txt" irrespective of their case. OR B. Write a function reverseline() in Python, which should read the content of a text file "story.txt" and display all its line in the reverse order and count and display the number of lines present in a file. **Example: If the file content is as follows**: It rained yesterday. It might rain today. I wish it rains tomorrow too. I love Rain. The **reverseline()** function should display the output as: .yadretsey deniar tI .yadot niar thgim tI .oot worromot sniar ti hsiw I .niaR evol I **No. of lines present in a file : 4**	3

30	A dictionary EventDt containing the records of event wise number of persons attending the events as {EventName : NumberOfPersons}:
	EventDt={"Marriage":300,"Graduation Party":1500,"Birthday Party":80,"Get together" :150}
	
	Write the following user-defined functions to perform operations on a stack named 'BigEvents' to
	    I. Push(EventDetails) that should push the names of those events in the stack named 'BigEvents' which have number of persons greater than 200.
	The stack should contain :
	    Marriage
	    Graduation Party
	    Get together
	
	    II. Pop_element() – To pop the items from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack.
	Output:
	    Get together
	    Graduation Party
	    Marriage
	    Stack Empty
		3

31	A. Predict the output of the following Python code:
	def fun(s):
	  n = len(s)
	  m=''
	  for i in range(0, n):
	    if (s[i] >= 'a' and s[i] <= 'm'):
	      m = m + s[i].upper()
		3

```
         elif (s[i] >= 'n' and s[i] <= 'z'):
             m = m +  s[i-1]
         elif (s[i].isupper()):
             m = m +  s[i].lower()
         else:
             m = m +  '#'
     print(m)
 #__main__
 fun('Gini%Jony')
```

<center>**OR**</center>

B. Predict the output of the Python code given below:

```
def my_city (L,N):
    for i in range(0,N):
        if len(L)>4:
            L[i]=L[i]+L[i]
        else:
            L[i]=L[i]
#__main__
sub=['Delhi','Jaipur','Agra','Surat','Mumbai','Bhopal']
my_city(sub,6)
print(sub)
```

Q No.	Section-D (4 x 4 = 16 Marks)	Marks
32	Consider the following table TEACHER	4

TCODE	TNAME	SUBJECT	GENDER	SALARY
5467	Narendra Kumar	Computer Science	M	70000
6754	Jay Prakash	Accountancy	M	65000
8976	Ajay Kumar	Chemistry	M	65000
5674	Jhuma Nath	Physics	F	55000
8756	Ravindra Kumar	Computer Science	F	75000
6574	Priyam Kundu	Physics	M	76000
3425	Dinesh Verma	Economics	M	71000

A. Write the following queries:
   I. To display the total SALARY for each SUBJECT.
   II. To display the records of TEACHER table sorted by Teacher's name in descending
   III. To display the distinct SUBJECT names from the TEACHER table.
   IV. To display the records of teachers whose names end with the letter 'r'.

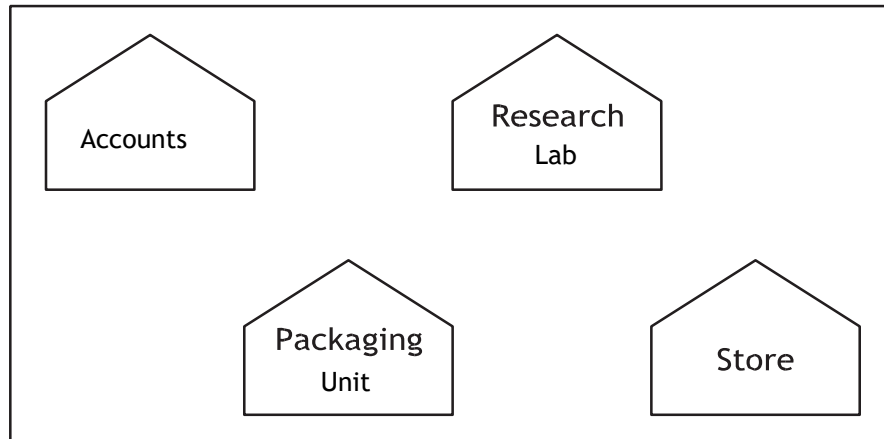<center>**OR**</center>

B. Predict the output of the following:
   I.   SELECT * FROM TEACHER where SUBJECT='Physics';
   II. SELECT TCODE, SUBJECT FROM TEACHER WHERE SUBJECT LIKE '- - - - - - -';
   III. SELECT COUNT(*) FROM TEACHER WHERE SALARY BETWEEN 65000 and 70000 ;
   IV. SELECT MAX(SALARY) FROM TEACHER where GENDER='M';

| 33 | Rohan is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. Help him to define and call the following user defined functions:
The columns of the CSV file are: Country, Capital
(i) AddNewRec() – To accept the record from the user and add it to a CSV file "CAPITAL.CSV".
(ii) ShowRec() – To display all the records present in the CSV file named 'CAPITAL.CSV' | 4 |

34	In a database company , there are two tables given below	4

Table: SALES

SALESMANID	NAME	SALES	LOCATIONID
S1	ANITA SINGH ARORA	250000	102
S2	Y.P.SINGH	1300000	101
S3	TINA JAISWAL	1400000	103
S4	GURDEEP SINGH	1250000	102
S5	SIMI FAIZAL	1450000	103

Table: LOCATION

LOCATIONID	LOCATIONNAME
101	Delhi
102	Mumbai
103	Kolkata
104	Chennai

I. To display a list of SALESMAN names whose location is 'Delhi'.

II. To display the details of salesman whose sales are more than 1250000.

III. To increase the sales by 10% of those salesman whose id in S1, S2 or S5.

IV. A. To display the NATURAL JOIN of the two tables.

OR

B. To display the Salesman's name along with their sales and location name whose sales are more than 1,30,0000.

35	MySQL database named SCHOOL has a STUDENT table in MySQL which contains the following attributes: • Rollno: Rollno of student (Integer) • Name: Name of student (String) • Cls: Class of Student (Integer) • Marks : Marks of Student (Integer) Consider the following details to establish Python-MySQL connectivity: • Username: root • Password: tiger • Host: localhost => Write a Python function sql_data() to display the details of those students who have scored more than 90 marks in the STUDENT table.	4

Q No.	Section-E (2 X 5 = 10 Marks)	Marks
36	A binary file "student.dat" has structure [rollno, name, marks]. i. Write a user defined function insertRec() to input data for a student and add to file student.dat. ii. Write a function searchRollNo() in Python which ask the student's rollno and searches the record in the file "student.dat" and shows the details of student i.e. rollno, name and marks (if found) otherwise shows the message as 'No record found'.	2+3

37	Riana Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below:	5

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research Lab	180 m

Building	No. of Computer
Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

i. Draw a block to block cable layout to connect all the buildings in the most appropriate manner for efficient communication.

ii. Suggest the most suitable place (*i.e.*, building) to house the server of this organization.

iii. Suggest the placement of the Repeater in the network with justification.

iv. Which device will you suggest to be placed/installed in each of these blocks /centers to efficiently connect all the computers within these blocks/centers.

v. Suggest a system (hardware/software) to prevent unauthorized access to or from the network.