अनुक्रमांक/**ROLL NO** सेट/**SET : 01**

केंद्रीय विद्यालय संगठन ,जयपुर संभाग
KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION
प्रथम प्री बोर्ड परीक्षा / 1ST PRE BOARD EXAMINATION :2024-25
कक्षा/ CLASS :XII
विषय /SUB : कंप्यूटर विज्ञानं (83) /COMPUTER SCIENCE (83)

अधिकतम अवधि / **Time Allowed :03 Hours**   अधिकतम अंक **Maximum Marks : 70**

सामान्य निर्देश / **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 the case of MCQ, the text of the correct answer should also be written.

Q.	Section-A (21 x 1 = 21 Marks)	Mark
1	State True or False: The keys of a dictionary must be of immutable types.	1
2	Identify the output of the following code snippet: str = "KENDRIYA VIDYALAYA" str=str.replace('YA','*') print(str) (a) KENDRIYA VIDYALAYA (b) KENDRI*A VID*ALAYA (c) KENDRI* VID*LA* (d) * KENDRI* VID*LA*	1
3	What will be the output of following expression? (5<10) and (10< 5) or (3<18) and not 8<18 (a) True (b) False (c) Error (d) No output	1
4	What is the output of the expression? St1="abc@pink@city" print(St1.split("@")) (a) ("abc", "@", "pink", "@", "city") (b) ["abc", "@", "pink","@','city"] (c) ["abc", "pink", "city"] (d) Error	1
5	What will be the output of the following code snippet? message= "Satyamev Jayate" print(message[-2::-2])	1
6	Which of the following options will not result in an error when performed on types in python where tp = (5,2,7,0,3) ? (a) Tp[1] = 2 (b) tp.append(2) (c) tp1 = tp+tp (d) tp.sum( )	1

7	If my_dict is a dictionary as defined below, then which of the following statements will raise an exception? my_dict = {'aman': 10, 'sumit': 20, 'suresh': 30} (a) my_dict.get('suresh') (b) print(my_dict['aman', 'sumit']) (c) my_dict['aman']=20 (d) print(str(my_dict))	1
8	Which of the following can delete an element from a list if the index of the element is given? (a) pop( ) (b) remove( ) (c) clear( ) (d) all of these	1
9	Which of the following attributes can be considered as a choice for primary key? (a) Name (b) Street (c) Roll No (d) Subject	1

10	Write the missing statement to complete the following code:
	file = open("abc.txt", "r")
	d = file.read(50)
	_____ #Move the file pointer to the beginning of the file
	next_data = file.read(75)
	file.close()
		1

11	State whether the following statement is True or False: An exception may be raised even if the program is syntactically correct.	1

12	What will be the output of the following Python code ?
	v = 50
	def Change(n):
	    global v
	    v, n = n, v
	    print(v, n, sep = "#", end = "@")
	Change(20)
	print(v)
	(a) 20#50@20 (b) 50@20#50
	(c) 50#50#50 (d) 20@50#20
		1

13	Which statement is used to modify data in a table? (a) CHANGE (b) MODIFY (c) UPDATE (d) ALTER	1
14	How would you return all the rows from a table named "Item" sorted in descending order on the column "IName"? (a) SELECT * FROM Item SORT 'IName' DESC; (b) SELECT * FROM Item ORDER BY IName DESC ; (c) SELECT * FROM Item ORDER IName DESC ; (d) SELECT * FROM Item SORT BY 'IName' DESC;	1
15	LIKE clause is used for. (a) For pattern matching (b) For table matching (c) For inserting similar data in a table (d) For deleting data from a table	1
16	Count(*) method count (a) NULL values only (b)Empty Values (c) ALL the values (d) None of these	1
17	The term HTTP stands for? (a) Hyper terminal tracing program (b) Hypertext tracing protocol (c) Hypertext transfer protocol (d) Hypertext transfer program	1
18	A device that connects networks with different protocols – (a) Switch (b) Hub (c) Gateway (d) Proxy Server	1
19	Which switching technique follows the store and forward mechanism?	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 parameter having a default value in the function header is known as a default parameter. Reason:- The default values for parameters are considered only if no value is provided for that parameter in the function call statement.	1
21	Assertion :- Both WHERE and HAVING clauses are used to specify conditions. Reason :- The WHERE and HAVING clauses are interchangeable.	

Q	Section-B (7 x 2=14 Marks)	Mark
22	What are immutable and mutable types? List immutable and mutable types of python.	2
23	If given A=2,B=1,C=3, What will be the output of following expressions: (i) print((A>B) and (B>C) or(C>A)) (ii) print(A**B**C)	2
24	Write the most appropriate list method to perform the following tasks. (I) A) To delete a given element from the list L1. <div align=center>OR</div>B) To sort the elements of list L1 in ascending order. (II) A) To add an element in the beginning of the list L1. <div align=center>OR</div> B) To add elements of a list L2 in the end of a list L1.	2
25	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO. 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): print (AR[K],end="#") (i)10#40#70# (ii)30#40#50# (iii)50#60#70# (iv)40#50#70#	2
26	Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. p=30 for c in range(0,p) If c%4==0: print (c*4) Elseif c%5==0: print (c+3) else print(c+10)	2
27	(i) (A) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed. <div align=center>OR</div>	2

	(B) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed. (ii) (A) Write an SQL command to remove the Primary Key constraint from a table, named MOBILE. M_ID is the primary key of the table. OR B) Write an SQL command to make the column M_ID the Primary Key of an already existing table, named MOBILE.	
28	(A) How is it easier to diagnose fault in Star topology than in Bus topology ? OR (B) Nirmala is a bit confused between the terms Web server and Web browsers. Help her in understanding both the terms with the help of suitable example.	2

Q	Section-C (3 x 3 = 9 Marks)	Mark
29	(A) Write a Python function that count the lines start with the word "the" in a file "xyz.txt" and display it at the end. OR B) Write a Python function that **Count total number of vowels in a file "abc.txt".**	3
30	(A) Madhuri has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the ODD numbers into a stack. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38] Sample Output of the code should be: 13,21,89,35 OR (B) Saroj have a list of 10 numbers . You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the numbers into a stack which are divisible by 5. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[2,5,10,13,20,23,45,56,60,78] Sample Output of the code should be: 5,10,20,45,60	3

31	(A) Predict the output of the Python code given below:
	
	``python
	def func(n1 = 1, n2= 2):
	    n1= n1 * n2
	    n2= n2 + 2
	    print(n1, n2)
	func( )
	func(2,3)
	``
		3

OR

(B) Predict the output of the Python code given below:

```
T= ["20", "50", "30", "40"]
Counter=3
Total= 0
for I in [7,5,4,6]:
    newT=T[Counter]
    Total= float (newT) + I
    print(Total)
    Counter=Counter-1
```

Q	Section-D (4 x 4 = 16 Marks)	Mark
32	Write SQL queries for (i)to(iv),which are based on the table: ACTIVITY given below:	4

Table:ACTIVITY

ACode	ActivityName	ParticipantsNum	PrizeMoney	ScheduleDate
1001	Relay100x4	16	10000	23-Jan-2004
1002	Highjump	10	12000	12-Dec-2003
1003	ShotPut	12	8000	14-Feb-2004
1005	LongJump	12	9000	01-Jan-2004
1008	DiscussThrow	10	15000	19-Mar-2004

(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 Schedule Date and Participants Number for the activity Relay100x4.

(iv) To increase PrizeMoney by 500 for High jump activity

OR

Write output for SQL queries(i) to(iii) and query for (iv),which are based on the table: ACTIVITY:

(i) select count(distinct ParticipantsNum) from ACTIVITY;
(ii) select max(ScheduleDate),min(ScheduleDate) from ACTIVITY;
(iii) select sum(PrizeMoney) from ACTIVITY;
(iv) Write a query to delete the record of Acode 1003.

| 33 | Abhishek is making a software on "Countries & their Capitals" in which various records are to be stored/retrieved in CAPITAL.CSV data file. It consists of some records. As a programmer, you have to help him to successfully execute the program.

(A) Write a function in Python named AddNewRec(Country,Capital) to append following records in the file "CAPITAL.CSV".
["FRANCE","PARIS"]
["SRILANKA","COLOMBO"]
(B) Write a function in Python named ShowRec( ) that will show all the contents of CAPITAL.CSV | 4 |
| 34 | Write SQL commands for the queries (i) to (iii) and output for (iv) & (v) based on a table COMPANY and CUSTOMER . | 4 |

COMPANY

CID	CNAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	Rohan Sharma	70000	20	222
102	Deepak Kumar	50000	10	666
103	Mohan Kumar	30000	5	111
104	Sahil Bansal	35000	3	333
105	Neha Soni	25000	7	444
106	Sonal Aggarwal	20000	5	333
107	Arjun Singh	50000	15	666

(i) To display those company name along with price which are having price less than 30000.

(ii) To display the name and price of the companies whose price is between 20000 to 35000.

(iii) To increase the price by 1000 for those customer whose name starts with 'S'

(iv) To display those product name, city and price which are having product name as MOBILE.

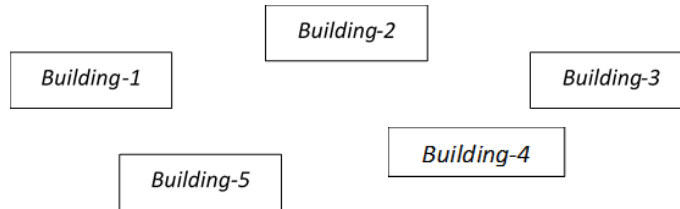| 35	Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database, SCHOOL: - rno(Roll number) – integer - name(Name) – string - DOB(Date of Birth) – Date - Fee – float Note the following to establish connectivity between Pythonand MySQL: - Username – root - Password – tiger - Host – localhost The values of fieldsrno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.	4

Q	Section-E (2 x 5 = 10 Marks)	Mark
36	Amit is a manager working in a recruitment agency. He needs to manage the records of various candidates. For this, he wants the following information of each candidate to be stored: - Candidate_ID – integer Candidate_Name – string Designation – string Experience – float	5

	You, as a programmer of the company, have been assigned to do this job for Amit. (i) Write a function to input the data of a candidate and append it in a binary file. (ii) Write a function to update the data of candidates whose experience is more than 12 years and change their designation to "Sr. Manager". (iii) Write a function to read the data from the binary file and display the data of all those candidates who are not "Sr. Manager".	
37	PVS Computers decided to open a new office at Ernakulum, the office consist of Five Buildings and each contains number of computers. The details are shown below.	5

Distance between the buildings

Building 1 and 2	20 Meters
Building 2 and 3	50 Meters
Building 3 and 4	120 Meters
Building 3 and 5	70 Meters
Building 1 and 5	65 Meters
Building 2 and 5	50 Meters

Building	No of computers
1	40
2	45
3	110
4	70
5	60

The Company has now decided to connect network in buildings.
(i)Suggest the most suitable place (i.e. building) to house the server of this organization. Also give a reason to justify your suggested location.
(ii) Where would you place Hub/Switch? Answer with justification.
(iii) Suggest a cable layout of connection between the buildings (Topology).
(iv) Do you think anywhere Repeaters required in the campus? Why
(v) Suggest a protocol that shall be needed to provide Video Conferencing solution between Ernakulum Campus and Ranchi Campus.
OR
What type of network (PAN, LAN, MAN, or WAN) will be set up among the computers connected in the Ernakulum campus?