KENDRIYA VIDYALAYA No 2 DELHI CANTT (Shift-2)

SESSION 2021-22

PRACTICAL SYLLABUS & LIST COMPUTER SCIENCE - XII

S.No		Marks (Total 30)	Term-1 (15 Marks)	Term-2 (15 Marks)
1	Lab Test:			
	1. Python program	8	6	2
	2. 3 SQL Queries based on one/two table(s), 2 output questions based on SQL queries	4	---	4
2	Report file: Term – 1 : Minimum 15 Python programs based on Term - 1 Syllabus Term – 2 : • Minimum 3 Python programs based on Term-2 Syllabus • SQL Queries – Minimum 5 sets using one table / two tables. • Minimum 2 programs based on Python - SQL connectivity.	7	4	3
3	Project (using concepts learnt in Classes 11 and 12) Term – 1 : Synopsis of the project to be submitted by the students (documentation only, may not submit the code during Term - 1) Term - 2 : Final coding + Viva voce (Student will be allowed to modify their Term 1 document and submit the final executable code.)	8	3	5
4	Viva voce	3	2	1

Python Programming

1. Write a python program to search an element in a list and display the frequency of element present in list and their location using Linear search by using user defined function. [List and search element should be entered by user]

2. Write a python program to pass list to a function and double the odd values and half even values of a list and display list element after changing.

3. Write a Python program input n numbers in tuple and pass it to function to count how many even and odd numbers are entered.

4. Write a Python program to function with key and value, and update value at that key in dictionary entered by user.

5. Write a Python program to pass a string to a function and count how many vowels present in the string.

6. Write a Python program to generator (Random Number) that generates random numbers between 1 and 6 (simulates a dice) using user defined function.

7. Write a python program to implement python mathematical functions.

8. Write a python program to implement python string functions.

9. Write a python program to read and display file content line by line.

10. Write a python program using function to Read a text file and display how many times 'the' or 'The' word present in file.

11. Write a python program Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.

12. Write a python program to remove all the lines that contain the character 'a' in a file and write it to another file.

13. Write a python program to create a binary file with name and roll number. Search for a given roll number and display name, if not found display appropriate message.

14. Write a python program to create a binary file with roll number, name and marks. Input a roll number and update the marks.

15. Write a python program using function to create a CSV file by entering user-id and password, read and search the password for given userid.

Synopsis of the project to be submitted by the students (documentation only, may not submit the code during Term - 1)

(Student has to make Project Based on the concept File Handling or Python/Database connectivity)

Project Title Example:

- ❖ BANK MANAGEMENT SYSTEM,
- ❖ BOOK SHOP MANAGEMENT SYSTEM
- ❖ COMPUTER SALES AND SERVICE SYSTEM,
- ❖ DAILY TRAVEL BOOKING SYSTEM,
- ❖ EMPLOYEE MANAGEMENT SYSTEM,
- ❖ HOSPITAL MANAGEMENT SYSTEM,
- ❖ LIBRARY MANAGEMENT SYSTEM,
- ❖ QUIZ PROJECT etc.

Project
The aim of the class project is to create something that is tangible and useful using Python file handling/Python-SQL connectivity. This should be done in groups of two to three students and should be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing.
For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, of course to do some of these projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves. The students should be sensitised to avoid plagiarism and violations of copyright issues while working on Projects. Teachers should take necessary measures for this.

Python Programming

16.   Write a Python program to implement a stack and queue using list (PUSH & POP Operation on Stack).

17 Write a python program using function PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.

18. Write a python program using function POP(Arr), where Arr is a stack implemented by a list of numbers. The function returns the value deleted from the stack.

Database Management

19. Create a student table and insert data. Implement the following SQL commands on the student table:

- ➢ ALTER table to add new attributes / modify data type / drop attribute
- ➢ UPDATE table to modify data
- ➢ ORDER By to display data in ascending / descending order
- ➢ DELETE to remove tuple(s)
- ➢ GROUP BY and find the min, max, sum, count and average

20. Integrate SQL with Python by importing the MySQL module record of employee and display the record.

21. Integrate SQL with Python by importing the MySQL module to search an employee using empno and if present in table display the record, if not display appropriate method.24. Integrate SQL with Python by importing the MySQL module to search a student using rollno, update the record.

22. Integrate SQL with Python by importing the MySQL module to search a student using rollno, delete the record.

Project :

Final coding + Viva voce

(Student will be allowed to modify their Term 1 document and submit the final executable code.)

* * * * * * * * * * * * *