

MARY RANI PUBLIC SCHOOL LAIKADU

RTP-1

XII COMPUTER SCIENCE (083)

TIME:3 Hrs.

M.M: 70

SECTION A

1. Expand a) PPP b) VoIP
2. Central computer which is powerful than other computers in the network is called
3. command is used to modify the attribute data type or size in a table structure.
4. What is the data type of the result set extracted from the database using the cursor object when we use the following methods?
 - a) fetchone()
 - b) fetchall()
5. To include integrity constraint in an existing relation, we should use statement.
6. The role of the statement cursor=db.cursor() is to
 - i) Create an instance of a cursor
 - ii) Move cursor row wise
 - iii) Connect cursor to database
 - iv) Prepare cursor to move.
7. Which of the following is not an aggregate function?
 - a) avg() b)max() c)join() d) count()
8. protocol is used to send the email to another email user.
9. Which of the following functions changes the position of file pointer and returns its new position?
 - a) flush () b)tell() c)seek() d)offset()
10. In case of Switching, before a communication starts, a dedicated path is identified between the sender and receiver.
11. command is used to remove data base in SQL.
- 12.The correct syntax of read () function from text file:
 - a) Fileobj.read()
 - b) Fileobj(read)
 - c) read(Fileobj)
 - d) Fileobj().read
13. Write full form of csv.
14. Write the correct syntax of tell () method.

15. Which of the following command is used to open a file 'test.txt' for reading and writing data in binary format only?
- a) M=open('test.txt','rb+')
 - b) M=open('test.txt','wb')
 - c) M=open('test.txt','w+')
 - d) M=open('test.txt','rb')
16. Select the correct output of the following code:
- ```
Fp.seek(5,1)
```
- a) Move Fp five characters ahead from current position.
  - b) Move Fp five characters ahead from beginning.
  - c) Move Fp five characters behind from current position.
  - d) Move Fp five characters behind from end of the file.

**Question 17 & 18 are ASSERTION /REASON QUESTIONS.**

Mark the following options: -

- a) Both A and R are True and R is the correct explanation of A.
  - b) Both A and R are True and R is the not correct explanation of A.
  - c) A is True But R is False.
  - d) A is False but R is True.
17. ASSERTION(A): writerow() function help us to write multiple rows in a csv file at a time.  
REASON (R) : writing one row at a time in a csv file is not possible, we must write multiple rows at a time.
18. ASSERTION (A) : Serialization is the process of transforming data to a stream of bytes.  
REASON (R ) : It is also known as pickling.

**SECTION B**

19. What is the difference between a hub and a switch in context of computer networking devices?
20. Give two advantages and two disadvantages of bus topology.

21. Define the following terms:

Web server, Web Hosting

22. Categorise the following commands as DDL or DML:

INSERT, UPDATE, ALTER, DROP

23. Identify the type of topology from the following:

- a) Each node is connected with central switching through independent cable.
- b) Each node is connected with the help of a single cable.

24. (A) Expand the following terms: -

(i) FTP (ii) ARPANET

(B) Tom has to share the data among various computers of his two offices branches situated in the same city. Name the type of network which is being formed in this process.

25. A teacher provides “<https://www.youtube.com/watch?v=90ORfh6a-kM>” to his /her students. Help them to identify the URL and domain Name.

### **SECTION C**

26. Write a method/ function SHOWTODO() in python to read contents from a text file ABC.TXT and display those lines which have occurrence of the word “TO” or “DO”.

For example: If the content of the file is

“THIS IS IMPORTANT TO NOTE THAT  
SUCCESS IS THE RESULT OF HARD WORK.  
WE ALL ARE EXPECTED TO DO HARD WORK.  
AFTER ALL EXPERIENCE COMES FROM HARDWORK.”

The method/function should display:

THIS IS IMPORTANT TO NOTE THAT  
WE ALL ARE EXPECTED TO DO HARD WORK.

27. Write a function countVowels() in Python, which should read each character of a text file “myfile.txt”, count the number of vowels and display the count.

Example: If the “myfile.txt” contents are as follows:

This is my first class on Computer Science.

The output of the function should be: Count of vowels in file: 10

28. Differentiate circuit switching and packet switching.

29. Write the output of following SQL queries based on the following table:

**TABLE: GAMES**

| GCODE | GAMENAME        | NUMBER | PRIZEMONEY | SCHEDULE<br>DATE |
|-------|-----------------|--------|------------|------------------|
| 101   | CAROM<br>BOARD  | 2      | 5000       | 12-11-2023       |
| 102   | BADMINTON       | 2      | 12000      | 14-11-2023       |
| 103   | TABLE<br>TENNIS | 4      | 8000       | 16-11-2023       |
| 105   | CHESS           | 2      | 9000       | 05-12-2023       |
| 108   | LAWN<br>TENNIS  | 4      | 25000      | 07-12-2023       |

- i) SELECT COUNT(DISTINCT NUMBER) FROM GAMES;
- ii) SELECT MAX(SCHEDULEDATE), MIN(SCHEDULEDATE) FROM GAMES ORDER BY GCODE;
- iii) SELECT AVG(PRIZEMONEY) FROM GAMES;

30. Differentiate text file and binary file.

**SECTION D**

31. Amartya Seth is a programmer, who has recently been given a task to write a python code to perform the following binary file operations with the help of two user defined functions/modules:

a. AddStudents () to create a binary file called STUDENT.DAT containing student information – roll number, name and marks (out of 100) of each student.

b. GetStudents () to display the name and percentage of those students who have a percentage greater than 75. In case there is no student having percentage > 75 the function displays an appropriate message.

32. Write the output of following SQL queries:

**TABLE: EMP**

| EMPNO | NAME    | DEPT  | DESIG | GEN | SALARY | CITY    |
|-------|---------|-------|-------|-----|--------|---------|
| 1     | DEEPIKA | SALES | MGR   | F   | 55000  | DELHI   |
| 2     | GAGAN   | ACCT  | OPT   | M   | 20000  | MUMBAI  |
| 3     | NEELAM  | COMP  | OPT   | F   | 22000  | KOLKATA |
| 4     | VIJAY   | SALES | MGR   | M   | 45000  | COCHIN  |
| 5     | SUNITHA | ACCT  | OPT   | F   | 18000  | CALICUT |
| 6     | RAJESH  | SALES | CLRK  | M   | 48000  | CHENNAI |
| 7     | KUNAL   | COMP  | MGR   | M   | 51000  | DELHI   |

- i) Identify the most appropriate column, which can be considered as Primary key.
- ii) If one column is added and 2 rows are deleted from the table EMP, what will be the new degree and cardinality of the above table?
- iii) Write the statements to: Insert the following record into the table EmpNo- 8, Name- Ravi, Dept- Sales, Design- Mgr, Gender- M, Salary – 34000, City- Delhi .
- iv) Write the statements to: Delete the record of Employees who lives in Delhi.

### **SECTION E**

33. What is the advantage of using pickle module?

Write a program to write into a CSV file “one.csv” Roll no, Name and Marks separated by comma. It should have header row and then take input from the user for all following rows. The format of the file should be as shown if user enters 2 records.

Roll. No, Name, Marks

20, Ronit, 67

56, Nihir, 69

34. Tech Up Corporation is a professional consultancy company. The company is planning to set up their offices in India with it's hub at Hyderabad. As a network advisor, you have to understand their requirement and suggest to them the best available solutions.

Block to Block distance (in meters):

| BLOCK(FROM)    | BLOCK(TO)  | DISTANCE |
|----------------|------------|----------|
| Human resource | Conference | 60       |
| Human resource | Finance    | 60       |
| Conference     | Finance    | 120      |

Expected number of Computers to be installed in each block:

| Block          | Computers |
|----------------|-----------|
| Human resource | 125       |
| Finance        | 25        |
| Conference     | 60        |

- a) What will be the most appropriate block where TUC should plan to install their server?

(b) What will be the best possible connectivity out of the following to connect its new office in Bengaluru with its London based office?

(i) Infrared (ii) Satellite Link (iii) Ethernet Cable

(c) Which of the following devices will you suggest to connect each computer in each of the above blocks?

(i) Gateway (ii) Switch (iii) Hub (iv) Modem

(d) Suggest the transmission medium out of the following for setting-up very fast Internet connectivity among blocks of the company.

1. Optical Fibre 2. Coaxial cable 3. Ethernet Cable.

(e) Suggest an ideal layout for connecting these blocks/centres for a wired connectivity.

35. David 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 Python and MySQL:

• Username - root • Password - tiger • Host - localhost.

The values of fields rno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.

OR

(i) Give one difference between delete command and drop command.

(ii) Deva has created a 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 Python and MySQL:

• Username - root • Password - tiger • Host - localhost

Sartaj, now wants to display the records of students whose fee is more than 5000. Help Sartaj to write the program in Python.