INFORMATICS PRACTICES (065)
SAMPLE PAPER
Session: 2024-25
Class: XI

Time: 3 HOURS   **M.M.: 70**

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.**

	SECTION A	
1	"You work as a data recovery specialist for a technology consulting firm. A client has approached your team with a critical issue: their external hard drive containing essential project files has become corrupted, and they urgently need to recover the data. As part of your initial assessment, you need to gather specific information from the client to proceed effectively." Outline any one step you would take to gather necessary information from the client about the corrupted external hard drive.	1
2	1TB = _____ GB (i) 1024 (ii) 2048 (iii) 2068 (iv) 3024	1
3	_____ in computers are capable of performing addition, subtraction, division and multiplication as well as some logical operations such as AND, OR, NOT. (i) CU (ii) ALU (iii) Processor (iv) Input Unit	1

4	Identify the type of software in the situation given below:
	 "Mr. John wants to manage his restaurant's operations, including taking orders, managing inventory, processing payments, and generating sales reports. He needs a software program designed specifically for restaurant management."
	   (i) Application Software (ii) System Software
	   (iii) Generic Software (iv) Specific Purpose Software
		1

5	What should be avoided when naming an identifier in Python? (i) Using reserved keywords (ii) Using underscores (iii) Using lowercase letters (iv) Using digits after the first character	1
6	Which of the following is a correct way to calculate the average of marks in three subjects in Python? (i) avg = (marksMaths + marksEnglish + marksIP) / 3 (ii) avg = marksMaths + marksEnglish + marksIP / 3 (iii) avg = marksMaths + marksEnglish + marksIP * 3 (iv) avg = (marksMaths + marksEnglish + marksIP) * 3	1

7	Select the option having the correct syntax of "if" statement?
	 (i). if [a>10]
	      #Will executes this block if the condition is true
	 (ii) if a>10;
	      {
		1

	#Will executes this block if the condition is true
	    }
	(iii). if(a>10)
	    #Will executes this block if the condition is true
	(iv) If a > 10:
	    #Will executes this block if the condition is true	

8	In MySQL, which of the following statements about the NULL value is true? (i) NULL is equivalent to zero. (ii) NULL values can be used in arithmetic operations. (iii) NULL represents a missing or unknown value. (iv) NULL values are treated as empty strings in MySQL.	1
9	Mr. Hemant is inserting 80 in the "Marks" column of the "Student" table but an error is being displayed. Write the correct SQL statement. INSERT INTO Student (80) VALUES (Marks);	1
10	State True or False: An attribute is a set of values of dissimilar type of data.	1
11	To remove a column from a table, which category of MySql command is used from the following: (i) DDL (ii) DML (iii) DQL (iv) TCL	1
12	Nirmal wants to create a table for storing information about the books present in the School Library. He issued the following command but getting error while executing the command: CREATE TABLE Books ; Identify the error.	1

13	Consider the table furniture (FurnitureID, FurnitureName, FurnitureCost). What can be the domain of the field FurnitureName?
	   (i) Alphabets (ii) Alphanumeric
	   (iii) Alphabets and space (iv) Alphabets and Special Characters
		1

14	The table "Store" has the following fields: (ItemNo, ItemName, Scode, Quantity). Initially, it has 6 rows and 4 columns. Later, one more row is added to the table. What is the degree and cardinality of the table?	1
15	An educational institution wants to enhance its online learning system by using a cloud service that provides virtual classrooms, on-demand storage for course materials, and the ability to run customized educational applications. Which cloud computing model best meets these requirements? (i) Platform as a service (ii) Software as a service (iii) Infrastructure as a service (iv) Cloud as a service	1
16	The branch of AI that focuses on creating systems that can understand, interpret, and respond to human language in a way that is both meaningful and useful. (i) Augmented Reality (ii) NLP (iii) Machine Learning (iv) Cloud Computing	1

Q17 and 18 are ASSERTION AND REASONING based questions.
Mark the correct choice as:
   i)   Both A and R are true and R is the correct explanation for A
   ii) Both A and R are true and R is not the correct explanation for A
   iii) A is true but R is False
   iv) A is false but R is true		

	v) Both A and R are False.	
17	Assertion: Indexing of Dictionary elements can also be done like List and Tuple. Reasoning: The Indexing of Dictionary elements can be defined in two ways forward and Backward Indexing.	1
18	Assertion: In a relational database, a tuple represents a single record or row within a table. Reasoning: Tuples are collections of attributes that describe an entity or object, and each tuple must have a unique identifier within its table.	1
	SECTION B	
19	"Hardware is of no use without software and software cannot be used without hardware." Explain. **OR** Given below are some features of two types of computer memories-RAM and ROM. List each feature under RAM or ROM. (a) Non-volatile memory (b) Contents can't be changed (c) Stores data or files the user is currently working on (d) Volatile memory (e) Can be written to and read from	2

20	Predict the output of the following code:
	i = 1
	sum_squares = 0
	while i <= 7:
	    sum_squares = sum_squares + i**2
	    i = i + 2
	    print(sum_squares)
		2

21	Find errors in the following code fragment. (Rewrite the program underlining the corrections made)
	i = 10
	difference == 0
	for i in range{10,0,-3}:
	    if i % 2 == 0:
	        Difference = Difference - i
	    else:
	    difference = difference - i
	    print(difference)
		2

22	Evaluate the following:
	(i) 3 ** 3 // 2+ 7 % 4 * 5
	(ii) (50 - 5 * 3) / 5 == 7 and (8 + 2) * 3 <= 30
	OR
	Consider the following code fragment and answer the following:
	n=11
	count = 0
	for j in range(n, 0, -2):
	    count += j
	    print(j)
	print(count)
	a) How many iterations will the above loop execute?
	b) What will be the count variable's value after the code is executed?
		2

23	a. Ajay wants to write an SQL query to increase the size of the 'name' column in	2

Employee table to accommodate 30 characters. However, he commits an error in the SQL syntax. Rewrite the following SQL statement after removing the errors.

ALTER Employee TABLE INCREASE Name VARCHAR(30);

b. Ajay tried another command:

UPDATE Employee SET Dept = "Analyst" WHERE DeptID = 2, Salary = 40000;

This time he wants to update the department to "Analyst" for all employees who have Department ID 2 and a salary greater than 40000. However, he is still not getting the desired result. Help him write the correct query.

OR

Consider the following tables:

Table1: (Field1, Field2, Field3)
Table2: (Field11, Field12, Field13)
Table3: (Field21, Field2, Field23)
Table4: (Field13, Field32, Field33)

Group the tables which are related to each other. Justify your answer.

24	Consider the table Netflix :	2

```
+---------+----------------------------+-------------+--------+
| MovieId | Title                      | ReleaseYear | Rating |
+---------+----------------------------+-------------+--------+
|       1 | Inception                  |        2010 |    8.8 |
|       2 | The Shawshank Redemption   |        1994 |    9.3 |
|       3 | Stranger Things            |        2016 |    8.7 |
|       4 | Black Mirror               |        2011 |    8.8 |
|       5 | Money Heist                |        2017 |    8.3 |
+---------+----------------------------+-------------+--------+
```

(a) Write a query which will produce the following output. Make sure the changes should get reflected in the original table.

```
+---------+----------------------------+-------------+--------+
| MovieId | Title                      | ReleaseYear | Rating |
+---------+----------------------------+-------------+--------+
|       2 | The Shawshank Redemption   |        1994 |    9.3 |
|       3 | Stranger Things            |        2016 |    8.7 |
|       5 | Money Heist                |        2017 |    8.3 |
+---------+----------------------------+-------------+--------+
```

b) Suggest an alternate query to generate the same output as given in part (a), such that, the changes will not be reflected in the original table.

OR

Based on the Table Cloth designed below. Identify the Primary Key, Candidate keys, and Alternate keys.

ClothID	Brand	ItemName	Price
D001	Zudio	Trouser	1500
D002	Adidas	TShirt	2500

D003	Adidas	Shoes	5000	
D004	H&M	Skirt	2500	
D005	Biba	Kurti	3200	

| 25 | Pratima wants to use the database Employee which was created yesterday, but she was getting the following error:

ERROR 1046 (3D000): No database selected

a) Help her to write the SQL commands to resolve this error.
b) Write SQL command to create the database. | 2 |

SECTION C

26	(a) Convert the following while **loop** into for **loop** :
	num=30
	while num>=10:
	    print(num)
	    num - =10
	(b) How many times will the above loop execute?
		2
		
		1

27	What will be the output produced by the following code: my_list = [10, 20, 30, 40, 50] length = len(my_list) print("Length of my_list:",length) index_of_30 = my_list.index(30) print(my_list[:index_of_30]) my_list.sort() print("Sorted list:",my_list)	3
28	A table School has the following fields: School: (Class, Section, NoOfStudents)	3

Class	Section	NoOfStudents
IX	A	40
X	B	35
XI	A	NULL
XII	B	0

a) Teacher wants to add 5 students to each class in the table given above. Write MYSQl command for the same.
b) Display the output after the execution of the command given in part (a).
c) Give reason for the above output.

<div align="center">OR</div>

Fill in the blanks:
Each blank should be replaced by one single word so as to make it a valid SQL Command.

	a) Select * from School where NoOfStudents _____ 20 _____ 30; b) _____ databases; c) _____ table School;	
| 29 | a) Consider the Table Netflix given below:<br><br>```
| MovieId | Title                  | ReleaseYear | Rating |
+---------+------------------------+-------------+--------+
|       2 | The Shawshank Redemption |      1994 |    9.3 |
|       3 | Stranger Things        |        2016 |    8.7 |
|       5 | Money Heist            |        2017 |    8.3 |
```<br><br>Give the output of the following query:<br>**select rating>8.8 from  netflix;**<br><br>b) Give two advantages of using SQL. | 1<br><br><br><br><br><br><br><br><br>2 |
30	Identify the Field of the Term/Application in the table given below:
	Choose from: AI, ML, NLP, IOT, Cloud Computing, Blockchain.
	    a) Personal assistant that schedules tasks based on voice commands.
	    b) Thermostat that adjusts temperature based on weather forecasts.
	    c) Application that analyzes customer sentiment from online reviews.
		3

	SECTION D	
31	a) Match the following: <table><tr><td>a) Interpreter</td><td>i) System Software</td></tr><tr><td>b) Backup Software</td><td>ii) Application Software</td></tr><tr><td>c) PowerPoint</td><td>iii) Utility Software</td></tr><tr><td>d) Linux</td><td>iv) Language Processor</td></tr></table> b) Categorize the following as input and output devices: Scanner, Zip Drive, Plotter, Pen drive, Speaker, Barcode Reader	2 2

32	a) What would be the output of the following code:
	d={"Aman":20,"Sumit":30,"Dinesh":50,"Suresh":80}
	t=d["Aman"]
	d["Aman"]=d["Suresh"]
	print(d)
	d["Suresh"]=t
	d["Dinesh"]=d["Sumit]
	print(d)
	
	b) Ms. Preeti has been given a task to generate a token for the patient waiting. She has maintained a list where she has to add and remove patients based on their status. Write the output of the code snippet given below:
	     patient = [10, 20, 30, 40, 50]
	     patient.append(60)
	     print(patient)
	     del patient[2]
		2
		
		2

		print(patient)	

<div align="center">SECTION E</div>

33	Consider the table 'Carden given below and write suitable SQL queries for the following:	5

<div align="center">**Table: Carden**</div>

Ccode	CarName	Make	Colour	Capacity
501	A-Star	Suzuki	Red	3
503	Indigo	Tata	Silver	3
502	Innova	Toyota	White	7
509	SX4	Suzuki	Silver	4

a) Display the Car Names of all the silver-coloured cars.
b) Add a column Charges in the table Carden.
c) Display Car Code of Indigo car from the table Carden.
d) Change the CarName in the table "Carden" to "Fortuner," which has a capacity of 7.
e) Display Make of the car whose capacity is more than 3.

34	Consider a table 'Election' given below:	5

ElectionID	CandidateName	PartyName	VotesReceived	Constituency
1	John Doe	Independent	5000	District A
2	Jane Smith	Green Party	3500	District B
3	Michael Johnson	Liberal Party	6000	District D
4	Sarah Brown	Conservative Party	4500	District C
5	David Lee	Independent	4000	District B

Write the output of the following SQL commands:
   a) Select CandidateName from Election where VotesReceived>4500;
   b) Select PartyName from Election where not PartyName='Independent';
   c) Select ElectionId from Election where Constituency ='District C' and Constituency= 'District D';
   d) Select Constituency from Election where VoteReceived between 4000 and 4500;
   e) Select VotesReceived+50 from Election where Constituency = 'District B' and VotesReceived > 3500;

<div align="center">**OR**</div>

Consider the table Orders (OrderID, CustomerName, OrderDate,TotalAmount)
(a) Write MySQl commands for the following:
   (i) Create a table Orders with suitable datatypes.
   (ii) Remove the column OrderDate.
   (iii) Increase size of the column CustomerName to 80.
(b) Neeta wants to replace NULL values with 0 in the TotalAmount column. Make her write the suitable SQL command for the same.

35	In a library catalog, Librarian want to organize books by Category. Each Category will have its own list containing book titles. For instance:	5

indian_library_catalog = {
"Classics":"The Guide",
"Literary Fiction": "The God of Small Things",
"Novel":"A Suitable Boy"
}
Write the python statements to perform the following operations:
a) Display Literary Fiction book available in the library.
b) Delete book with the Category **"Novel"** from the dictionary.
c) Display the number of Categories available in the library.
d) Display all the books available in the library.
e) Add a new Category ' Thriller' :
Book title - The Girl on the Train

OR

Consider the following list:
MYLIST=["LIST","IS","AN", "ORDERED","OF","DATA"]
Write python statements to perform the following operations:
a) To access the word "ORDERED" from the given list.
b) To replace the word given at position 2 by the word "MUTABLE".
c) Reverse the list.
d) Insert a word "SEQUENCE" after "ORDERED" in the list.
e) Display elements of the list present at the index numbers 2 to 4.