Class: XI Session: 2025-26

SAMPLE QUESTION PAPER

Informatics Practices (065)

Time allowed: 3 Hours **Maximum Marks: 70**

General Instructions:

- **The paper is divided into 4 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 4 questions (29 to 32). Each question carries 3 Marks.**
- **Section D, consists of 2 questions (33 to 34). Each question carries 4 Marks.**
- **Section E, consists of 3 questions (35 to 37). Each question carries 5 Marks.**
- **All programming questions are to be answered using Python Language only.**

Q.No.	Question	Marks
	SECTION A	
1	Which of the following is Not Open source software? a) MySql b) Tally c) Python d) Mozilla Firefox	1
2	Which of the following best describes a database? a) A collection of unrelated data. b) A collection of interrelated data organized for easy access, management, and updating. c) A collection of software programs. d) A computer application that is used for word processing.	1
3	Which windows utility helps us to remove cache, temporary files and recycle bin items? a) Disk cleanup b) Device Manager c) File Explorer d) Disk Defragmentation	1
4	Which of the following code snippets will raise an error due to invalid variable naming in Python? a) var_1 = 10 b) 1var = 20 c) var1 = 15 d) var_one = 25	1
5	Fedora belongs to which category of software?	1

	a) General Purpose Software b) Utility software c) Operating System d) Customized software	

6	Which one is correct syntax for Insert Statement?
	a) Insert Columns(Col1, Col2,Col3);
	b) Insert into (Col1, Col2,Col3) VALUES (Val1,Val2,Val3);
	c) Insert into Columns(Col1, Col2,Col3) VALUE (Val1, Val2,Val3);
	d) None of the above.
		1

7	What is the output of int("45.0") in python? a) Error b) 45.0 c) 45 d) "45"	1
8	In a relational data model, a primary key: a) Must contain unique values for each tuple. b) Can contain NULL values. c) Can be duplicated across multiple records. d) Can have multiple columns with the same name.	1
9	How many times will the following loop execute? i = 1 while i< 5: print(i) i += 1 a) 3 times b) 4 times c) 5 times d) Infinite loop	1
10	Which type of Solid State memory looses data when there is power failure? a) RAM b) SSD c) ROM d) HDD	1
11	In MySql , Character data can be stored as a) Fixed length string b) Variable length string c) Either Fixed or Variable length string d) None of the mentioned	1
12	Virtual Reality allows user to _____ a) Use voice commands to change TV Channels b) Experience 3D environment through simulations. c) Post Stories on Social Media d) Charge Devices wirelessly	1
13	Which statement in MySQL allows to change the definition	1

	of a table a) Alter b) Update c) Create d) Modify	
14	What will be the output of following SQL statement? **SELECT null+5;** a) 5 b) Error c) Null d) null+5	1
15	Which of the following robots is known to mimic human gestures and expressions? a) Drone b) Sophia c) Atlas d) Mars Rover	1
16	Sambhav wants to work in the database School, he created yesterday. Write the SQL command a) Use School b) Select database School c) Show databases d) Open School	1
17	What does the term "data redundancy" refer to? a) Repeating incorrect data b) Duplicate data in multiple places c) Loss of data due to corruption d) Efficient data access	1
18	What happens if WHERE clause is omitted in an UPDATE statement? a) No changes are made b) Only first row is updated c) All rows are updated d) Syntax error occurs	1
19	XYZ Consultancy provides services to the user where they can install and execute an application without worrying about the underlying infrastructure and their setup. It provides an environment to develop, test, and deliver software applications. **Identify the type of Service:** a) SaaS b) PaaS c) IaaS d) Faas	1
Q20 and 21 are ASSERTION AND REASONING 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:** In Python, lists are mutable, meaning their elements can be changed after creation.	1

	Reasoning: Lists allow you to add, remove, or modify elements, unlike tuples which are immutable.	
21	**Assertion (A):** INT data type can store both positive a negative whole numbers. **Reason (R):** VARCHAR is a numeric data type used to store integer values.	
	SECTION B	
22	a) A company is upgrading its database server and needs to store 50,000 records. Each record takes up approximately 1 KB of storage. What is the total storage requirement for the database server in MB? b) Give one difference between RAM and ROM.	2
23	Give two differences between DDL and DML.	2
24	Consider the following scenarios and select the most appropriate technology which can used to help solve the problem: **Cloud Computing, Cloud Services - SaaS, IaaS, PaaS, Grid Computing, Block chain technology** a) An online voting system needs to ensure the integrity and security of votes cast by multiple users without central oversight. Which technology would help in creating a secure, transparent, and tamper-resistant voting system? b) An environmental research project requires the simultaneous processing of large datasets collected from various sensors worldwide. Which computing approach would be appropriate for managing and processing these datasets across a distributed network of computers?	2

25	You are designing a shipping cost calculator for an e-commerce site. What will be the output of the following code?
	
	`weight = 15 # in kilograms`
	`distance = 200 # in kilometers`
	
	`if weight <= 5:`
	`  cost = 10`
	`elif weight <= 15:`
	`  cost = 20`
	`else:`
	`  cost = 30`
	
	`print("Shipping cost:", cost)`
	
	`if distance > 100:`
	`  cost = cost +15`
	
	`print("Final Shipping cost:", cost)`
		2

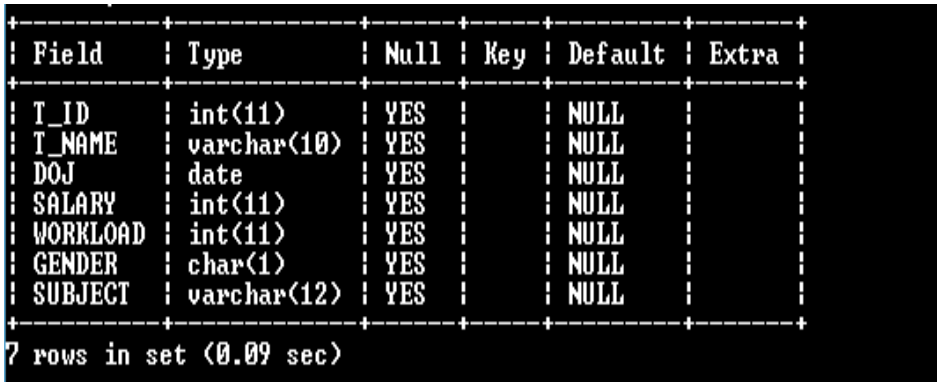
26	The Green Globe Institute has collected temperature d
	(in °C) for three consecutive days from four differen
	cities using basic Python lists. To streamline
	scientific analysis, they plan to organize the data
	using NumPy arrays.
	
	python
	# Temperature data
	city1 = [34.5, 36.2, 35.0]
	city2 = [33.0, 32.5, 34.1]
	city3 = [31.8, 30.9, 32.0]
	city4 = [36.0, 37.2, 36.8]
	
	Convert the temperature data into a NumPy 2D array such that each row corresponds to a city and each column represents a day's temperature. Provide the code snippet to achieve this.	

27	Consider the following table: **Table: STUDENT** No | Name | AvgMark | Grade | ClassSec 1 | Karan | 67.8 | C | 11D 2 | Vishu | 82.6 | B | 12B 3 | Prabhat | 85.7 | B | 12C 4 | Selina | 88.9 | A | 11C 5 | Vinod | 65.9 | C | 11D 6 | Karan | 68.6 | D | 12C Answer the following questions based on table STUDENT: a) What is the domain of AvgMark? b) How many tuples are there in the table STUDENT? OR a) How would you calculate (13+5)*7/2 in MYSQL? b) State any one limitation of Traditional File System.	2
28	i) Is the following statement correct in python a,b,c=3,4,"Sagar" ii) Predict the output of the following statement a) print (3**2//4)? b) type(True) c) print("hello" + 5) **OR** Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. numbers = [1; 2, 3,4, 5] for num is numbers	2

	print("Number:' num)	
	SECTION C	
29	(a) What will be the output of the following code snippet? my_dict = {'fruit': 'apple', 'vegetable': 'carrot'} my_dict['fruit'] = 'banana' my_dict['grain'] = 'rice' print(my_dict) (b) Identify the error in the following code: my_list = [10, 20, 30, 40] print(my_list[4])	2+1=3

30	(a) You are creating a program that prompts users to enter a valid password. The program should keep asking the user for input until they provide a password that meets specific criteria. Which type of loops out of for and while loop is more suitable here?
	(b) Convert the following while loop into for loop:
	count = 1
	while count <= 5:
	print(count)
	count += 2
	or
	Give the output of the following Python code:
	a) for i in range(0, 10, 3):
	if i%3==0 and i%2==0:
	print(i)
	b) for word in ["Python","SQL","Cloud"]:
	print(word[::-1])
		1+2=3

31	Table: EmployeeData | Emp_ID | Salary | Bonus | |---|---|---| | 501 | 40000 | 5000 | | 502 | 45000 | NULL | | 503 | 30000 | 4000 | | 504 | 60000 | NULL | | 505 | 55000 | 7000 | (a)Ayush has written the following SQL query: SELECT Bonus FROM EmployeeData WHERE Bonus = NULL; But he doesn't get any output. What is the correct query? (b)Ayush wants to assign a Bonus of 6000 for employee with Emp_ID = 503. Write the appropriate SQL command. (c)Write an SQL query to display the following output:	1+1+1=3

	Emp_ID **501** **505** **OR** a) Table-teacher  Mr. Subodh was trying to insert Gender as **"Male"** in the **Table : teacher** ,but the command is giving an error. Based on the description of the table shown below, give reason for the same. b) To manage digital infrastructure records, the city of IndTech has launched the *SmartInfra2025* project. As part of its database setup, the tech team needs to begin organizing data storage. Write SQL commands to: i) Create a database named SmartInfra2025 ii) Display the list of all tables created inside this database	
32	a) Write a CREATE TABLE statement for a Courses table with the following fields: • CourseID (integer) • CourseName (string, up to 25 characters) • StartDate (date) • fees (Decimal, up to 2 decimal places) b) Give one advantage of using SQL.	2 +1=3
	SECTION D	
33	a) Give two differences between generic and specific purpose software. b) Which type of software is responsible for managing the computer's hardware and providing a platform for running application software? c) Which application software is specifically designed to create, edit, and format text documents?	2+1+1=4
34	a) What will be the output of the following code snippet? colors = ['red', 'blue', 'green', 'yellow'] colors.append('purple') print(colors) colors.insert(2, 'orange')	2+2=4

```
  print(colors)
```

b) Give the output of the following Python code?

```
books = {'Python Programming': 450, 'Data Science':
350, 'Machine Learning': 500}
sum=0
count=0
for key, value in books.items():
    if value>400:
        sum=sum+value
        count=count+1
print(sum)
print(count)
```

SECTION E

35 Consider the following table ENTERTAINMENT. Write SQL commands for the statements (i) to (v) — 5

ID	Title	Type	ReleaseDate	Rating
1	Avengers: Endgame	Movie	2019-04-26	8.4
2	The Mandalorian	TV Show	2019-11-12	8.7
3	Stranger Things	TV Show	2016-07-15	8.6
4	Inception	Movie	2010-07-16	8.8
5	Hamilton	Musical	2020-07-03	8.4
6	Friends Reunion	Special	2021-05-27	8.0
7	The Witcher	TV Show	2019-12-20	8.2
8	Parasite	Movie	2019-05-30	8.6
9	The Office	TV Show	2005-03-24	8.9
10	Breaking Bad	TV Show	2008-01-20	9.5

a) Display the titles and ratings of all entertainment entries with a rating above 8.5
b) To display all details of movies released after year 2015.
c) Remove all entries with a rating below 8.0.
d) Add a new column Language to store the language of the movie/show.
e) Increase the rating of all TV Shows by 0.1

36	I) Consider the following table Table: Hospital | Dcode	Name	Age	Dept	DOJ	Charges	Gender
---	---	---	---	---	---	---
D1	Karan	54	Surgery	2012-07-07	500	M
D2	Anmol	45	Orthopedic	2010-12-19	800	M
D3	Ravina	42	Orthopedic	2013-01-15	800	F
D4	Geeta	51	Surgery	2010-04-16	1200	F
D5	Ketan	36	ENT	2009-07-31	2500	M
D6	Arvind	59	ENT	2013-07-07	1500	M

D7	Zubair	45	Cardiology	2012-10-20	1400	M |
						
						a) Define Primary Key? Which field can be set as Primary key in this table?
						b) Write the MYSQL command to remove all the data from the table along with its structure.
						c) Write the command to Insert third record of the above table.
						d) A new record is added in the above table. What will be the degree and cardinality of table/relation after adding this record?
						e) What is the default format of date datatype?
						
						Or
						
						Find the output of the following MySQL queries based on table Hospital:
						
						a) SELECT NAME, DEPT FROM HOSPITAL WHERE DOJ< '2010-01-01';
						b) SELECT NAME, AGE FROM HOSPITAL WHERE NOT (AGE> =45);
						c) SELECT NAME, CHARGES FROM HOSPITAL WHERE DEPT = 'ENT' AND CHARGES BETWEEN 1000 AND 2000;
						d) SELECT NAME,DEPT FROM HOSPITAL WHERE AGE != 45 AND CHARGES > 1200;
						e) SELECT NAME FROM HOSPITAL WHERE GENDER = 'F' AND AGE BETWEEN 30 AND 50;	

37	Consider Python Dictionary: Transport{"bus": "public", "Car": "Private", "Bike":"Private"} **Write statements to :** a) Add a new element **metro** as **"Semi Private"**. b) Remove "Car". c) Change "Bike" to **"Semi Private"**. d) Display all keys. e) Display number of Key value pairs.	5

	OR Consider the following list: DEVICES=[“LAPTOP”, “SERVER”, “SMARTPHONE”, “PRINTER”] **Write python statements to perform the following operations:** a) To access DEVICE “SMARTPHONE” from the given list. b) Change the name of the DEVICE from ‘PRINTER’ to ‘3D PRINTER’ c) To display the output as: ['SERVER', 'SMARTPHONE'] d) Insert DEVICE “SCANNER” after “SERVER” in the list. **e)** To arrange the elements of the list alphabetically.	

[10]