



केन्द्रीय विद्यालय संगठन, जयपुर संभाग

KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION



सत्र – 2022-23



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**Unit Wise syllabus
Distribution of Marks**

Unit No.	Unit Name	Marks
1	Introduction to Computer System	10
2	Introduction to Python	25
3	Database concepts and the Structured Query Language	30
4	Introduction to the Emerging Trends	5

Unit 1: Introduction to Computer System

Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.

Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.

Software: purpose and types – system and application software, generic and specific purpose software.

Unit 2: Introduction to Python

Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging.

Control Statements: if-else, for loop

Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions.

Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions.

Unit 3: Database concepts and the Structured Query Language

Database Concepts: Introduction to database concepts and its need, Database Management System.

Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key

Advantages of using Structured Query Language, Data Definition Language, Data Query

Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types

Data Definition: CREATE TABLE

Data Query: SELECT, FROM, WHERE.

Data Manipulation: INSERT

Unit 4: Introduction to the Emerging Trends

Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.

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Unit and Topic	Marks					Weightage	Section				
	1	2	3	5	4		A	B	C	D	E
Unit 1: Introduction to Computer System						10					
Introduction to computer and computing, evolution of computing devices, components of a computer system and their interconnections, Input/output devices.	1	1				3	1	21			
Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.	1	1				3	7	25			
Software: purpose and types – system and application software, generic and specific purpose software.	1		1			4	10		26		
Unit 2: Introduction to Python						25					
Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators.		1				2		24			
data types, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging.	1		1			4	2		27		
Control Statements: If-elif-else, while and for loop, break, continue and pass.	1	1	1			6	17	19	28		
Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and functions.	1	1			1	7	6	22			34
	1			1		6	12			31	

Dictionary:concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions.										31	
Unit 3: Database concepts and the Structured Query Language						30					
Database Concepts: Introduction to database concepts and its need, Database Management System.	2					2	3				
							14				
Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key	2					2	9				
							15				
MySQL Intro:Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL , Data Types	2		1			5	11		30		
							16		30		
DDL:CREATE TABLE	1	1		1		8	5	20		32	
DQL: SELECT, FROM, WHERE.	1			1		6	13	23		33	
DML: INSERT	1	1			1	7	8	23		33	35
Unit 4: Introduction to the Emerging Trends						5					
Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics,.	2		1			5	4		29		
Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.							18		29		
NUMBER OF QUESTION	18	7	5	3	2	35					
TOTAL MARKS	18	14	15	15	8	70					

Unit 1: Introduction to Computer System

- *Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.*
- *Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.*
- *Software: purpose and types – system and application software, generic and specific purpose software.*

1.1 Introduction to Computer System

The word originates from the Latin word “Computare” which means “to calculate”.

Earlier computers were used as calculating devices.

A computer is an electronic device that accepts data as input from users and gives the output after processing them.

1.2 Evolution of computing devices

As mentioned at the beginning earlier computers were used to perform simple calculations. Some of the early calculating devices also one of the important factors of Introduction to Computer System, and they are as follows:

Abacus

It was the first calculating device with wooden frames along with beams sliding on wires. It was used to perform basic arithmetic operations such as addition, subtraction, multiplication, and division. It is also used to teach at early age schools to count numbers.

Napier's Bones

It was made by a Scottish mathematician named Sir John Napier in 1616. It had numbers carved on bones or strips of wood. It was also used for simple calculations. In addition to this it was used for calculating the root of the number.

Pascaline

It was invented by Blaise Pascal a French mathematician in 1641. It was the first mechanical calculator. It has a rectangular box with movable wheels. It was also used for simple calculations up to hundreds and thousands.

Difference Engine

It was invented by Charles Babbage in the Nineteenth Century. It was used to prepare mathematical tables.

Analytical Engine

It was considered as the first-generation computer invented by Charles Babbage. It had some basic elements such as input, output, and memory devices.

1.3 Generations of computers – Computer evolution started with technology evolution. Each and every generation used different components in computers for storage of data, performing the tasks. There are five generations of computers:

Note: *There are variations in generation duration by different sources.*

First Generation Computers

- First generations of computers were very large in size as well as less memory storage.
- It was very expensive at that time.
- To input data, there were punch cards and paper tape.
- Vacuum Tubes were used to store data in this generation of computers.
- Ex.
 - **Mark – I was developed** by Howard H. Aiken, ENIAC (Electronic Numerical Integrator and Computer) developed by John Presper Eckert and John W. Mauchly.
 - **EDSAC(Electronic Delay Storage Automatic Calculator)** developed by professor M. Wilkes of Cambridge University,
 - **UNIVAC I(Universal Automatic Computer)** developed by J. Presper Eckert and John Mauchly.

Second Generation Computers

- They were small in size compared to the first generation's computers.
- Transistors were used to store data on these computers.
- Punch cards were used for input.
- Ex. IBM 1401 and RCA 501

Third Generation Computers

- They were smaller in size, faster, cheaper, and efficient than earlier ones.
- They used Integrated Circuits (ICs) and
- Keyboard to input.
- They used monitors to display output.
- Ex. IBM 360 series and 370 Series

Fourth Generation Computers

- They are the modern computers we use today.
- They have microprocessors consisting of ICs (VLSI) on a single chip called CPU.
- They have more storage power and computing power.
- Ex. IBM PC , Apple Macintosh, Dell, HP etc

Fifth Generation Computers

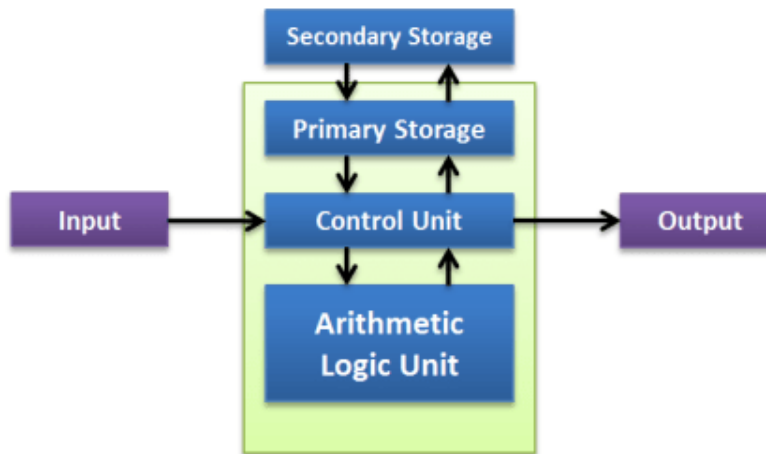
- They have high storage capacity, high speed, and are capable of performing sophisticated tasks.
- They involve Artificial Intelligence for computing.
- Wearables
- IOT Devices

1.4 Computer system interconnection

Since a computer follows Input-Process-Output cycle, thus components of computer are categorized in three parts:

1. Input Devices
2. Central Processing Unit
3. Output Devices

The basic component structure of computer is as shown below:



As shown in the diagram, various parts of the computer interact together to make the computer work. You input data to the computer by using input devices and the CPU acts upon this data and provides output which is made available to the user by using the output device.

Input devices

Input device is responsible for taking input from the user and providing it to the computer. Some most commonly used input devices are

- Keyboard
- Mouse
- Microphone
- Webcam
- Scanner
- Barcode reader
- Light pen
- Joystick

Output devices

Output device is responsible for providing and displaying output to the user.

Some most commonly used output devices are:

- Monitor- LED Monitor, LCD Monitor, CRT Monitor
- Printer- Impact Printer (Inkjet, Dot-Matrix), Non-Impact Printer (Laser, Inkjet)
- Plotter
- Speaker

CPU (Central Processing Unit)

The CPU is the control centre of the computer. It understands the instructions and carries out operations on the computer accordingly. It is the brain of a computer and controls the activity performed by the computer.

The CPU has three components:

- ALU (Arithmetic and Logical Unit)
- MU (Memory Unit)
- CU (Control Unit)

ALU (Arithmetic and Logical Unit) ALU is a component which is responsible for all the arithmetic or logical operations done on the data. Arithmetic operations are the basic mathematical calculations. Logical operations are basically comparison operations involving comparing data.

CU (Control Unit) The control unit is a component which controls the flow of data and operations in a computer. It acts as a manager and instructs and coordinates all the components of the CPU to perform their respective task.

1.5 MU (Memory Unit) Memory unit is a component which is responsible for storing all data and information and instructions. Memory of a computer is more like a predefined working space where it temporarily keeps information and data to facilitate its performance. When the task is performed, it clears its memory and memory space is then available for the next task to be performed. This memory is often called the main memory. There are two types of memory: **Primary and secondary memory**

Primary Memory: Primary memory also known as volatile memory that is temporary as it loses its contents when the computer's power is turned off. It is internal memory that is accessed directly by the processor. Following are the Primary memory:

- **RAM:** Random Access Memory is the memory that the computer uses for storing the programs and their data while working on them. We can either read data from the RAM or write onto it. Hence it is called read/write memory.
- **ROM:** Read Only Memory is used to store the data about the hardware which does not require frequent updates, for example startup programs that load Operating System into RAM. ROM is non-volatile memory. We can only read data from the ROM and hence called read only memory.
- **Cache Memory:** Cache memory is very high speed memory which is placed between processor and RAM to speed up the operations of CPU. Generally it stores the copies of data frequently accessed from RAM.

Secondary Memory: Secondary memory also known as non-volatile memory stores data and instructions permanently for future use. It is slower than primary memory but cannot be accessed by the processor directly.

Example of Secondary Memory are :

- Hard Disk
- CD/DVD
- USB Flash Drive
- Memory Card
- Memory Unit

bit(b) is the smallest unit of memory. A bit can either have 1 or 0.

Byte(B) is a unit of memory used to measure the amount of space consumed by data or instructions in memory. **8 bits 1 Byte**

Nibble: 4 bits 1 nibble

Memory size conventions

- 1 Kilobyte - 1024 Bytes
- 1 Megabyte - 1024 KB
- 1 Gigabyte - 1024 MB
- 1 Terabyte - 1024GB
- 1 Petabyte - 1024 TB
- 1 Exabyte - 1024 PB

1.6 Data:

- **Data Capturing:** Data capturing refers to the process of collecting or inputting data from different sources. To input data different input devices can be used such as keyboard, scanner, camera, bar code reader etc. data capturing might be a complex process due to nonuniformity in data.
- **Data Storage:** Data storage refers to the process of storing captured data for future use. There are many different types of storage devices available which can be used to store data. Nowadays due to the rise in computers, Internet and Technology large volumes of data being produced and hence the storage device should be of large capacity and updated regularly. to store large amounts of data, Server can be deployed or Cloud computing can also be used.
- **Data Retrieval:** Data Retrieval refers to accessing or fetching data from storage devices as per requirement. Due to the large volume of data nowadays, systems must have good quality and effective programs in order to access data at minimum time.
- **Deleting data** refers to erasing data from storage devices. There can be many reasons for deleting data such as system crash, accidental deletion, and illegal deletion by hackers/mischief mongers. When data is deleted from storage media, only the status (address entry) of data is changed and that space is shown empty to the user without deleting data actually.
- **Data recovery** is the process of accessing deleted, lost or corrupted data from storage devices. Deleted data can only be recovered when memory space of deleted data has not been overwritten with new data.
- **Using Backup:** A backup is a utility software to backup specific data before deletion. Users have to take their data backup at regular intervals to avoid stress caused by accidental deletion. To restore backup data users must use the restore tool provided by windows. Users can only restore those data in which backup has been taken.

The internal devices: The computer system has the following internal devices:

- **Motherboard:** The motherboard is a circuit board of the computer system. All the devices are connected with this board internally or externally. It provides slots, connectors, and ports to connect devices.
- **SMPS:** It stands for switch mode power supply. It is attached with a power cable from outside and connected with the motherboard through a connector.
- **Hard Disk:** A hard disk is the main storage device of the computer. It is connected to the slot on the motherboard and to SMPS.
- **CPU:** The CPU is connected or attached to the CPU socket. On top of the CPU, a fan is attached to provide cooling to the CPU.
- **RAM:** RAMs are attached to RAM slots on the motherboard.
- **Ports:** Ports allow one to attach external devices to the computer. These ports are generally found at the backside of the cabinet. Ports have either holes or pins to attach a device.

1.7 Software: Software is a set of programs that instruct hardware to what to and how to do. It makes hardware functional to achieve a common objective. Some examples of software are Windows 10, Macintosh, MySQL, MS Word, Excel, Games etc.

Types of software:

1. System software
2. Application software

1. System Software: System software manages computer systems. It is software that controls and coordinates all internal activities of a computer system.

System software can be categorized as

- A. Operating System
- B. Utility Software
- C. Device Driver

A. **Operating System:** Operating System acts as an interface between user and machine. It is set of programs that –

- Manages hardware resources
- Manage memory
- Display result in monitor
- Control all hardware component attached to computer system
- Read data through input devices
- Example: Windows 10, Macintosh, Ubuntu, DOS etc.

B. **Utility software:** It is system software that helps you to configure and optimise and maintain a computer. Examples of utility software are- Disk Cleaner, File Backup Utility, Antivirus, Firewall, Disk Defragmenter etc.

C. **Device Driver:** Device driver is software which controls a particular type of hardware attached with a computer. It acts as an interpreter between particular hardware and computer systems.

2. Application Software: Application Software helps in providing a graphical user interface to the user to operate the computer for different functionality. The user may use the computer for browsing the internet, accessing to email service, attending meetings, and playing games.

Different high-level languages are used to build application software. They basically lie over system software. They are really utilized by end-user just as have explicit usefulness or undertakings which they are intended to perform. This application software is regularly evolved through custom software improvement, in light of prerequisites of clients.

Types Of Application Software :

- 1. General Purpose Software
- 2. Custom Made Software

General Purpose Software :

The Software is developed to serve the requirements of a large number of people on a daily basis. This software is eventually used on a regular basis by every user. These are the reasons why this software is cheaper than any other software. Some of the examples are: MS Word, Google Docs, Google Drive, Gmail, Netflix

Custom Made Software :

Software which is developed to serve the requirement of the particular user is defined as custom-made software. Most software companies work on the basis of the requirement of the user to build custom software. Some of the examples are: Desktop Software Application, Mobile Application Web Application, Database Software.

Advantages of Application Software :

- Application Software packages are written by software architects and the content is of great quality.
- They have large availability and are generally cheaper when compared to the other packages.
- The application software meets the exact needs of the user, because they are designed specifically for the single intention of the user, the user knows that he has to use one specific software to accomplish his task.

Disadvantages of Application Software :

- Some software that is designed specifically for a certain business, may not be compatible with other general software because each software serves a different purpose.
- The development of software is time-consuming because it needs constant communication between the developer and the customer. This delays the entire development process, which can lead to more spending on utilities.

Unit 2: Introduction to Python

- *Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging.*
- *Control Statements: if-else, for loop*
- *Lists: list operations - creating, initialising, traversing and manipulating lists, list methods and built-in functions.*
- *Dictionary: concept of key-value pair, creating, initialising, traversing, updating and deleting elements, dictionary methods and built-in functions.*

2.1 Python Fundamentals

1. What is Python:- Python is a general-purpose, high level programming language. It was created by Guido van Rossum, and released in 1991.

· In order to communicate with a computer system, we need a computer programming language. This language may be C, C++, Java, Python or any other computer language. Here we will discuss Python.

· Python is inspired by two languages – (i) ABC language which was an optional language of BASIC language. (ii) Modula-3

2. Why Python:-

- Platform Independent (Cross-Platform)
- Free and Open Source
- simple syntax similar to the English language.
- fewer lines than some other programming languages. interpreted Language.
- Python can be treated in a procedural way, an object-orientated way. (OOL and POL.)

3. What can Python do?:- It is possible to develop various Apps/ Software's with Python like–

- Web development
- Machine learning
- Data Analysis
- Scripting
- Game development.
- Embedded applications
- Desktop applications

4. How To Use Python?:-

4.1 Python can be downloaded from www.python.org. (Standard Installation)

4.2. It is available in two versions- • Python 2.x • Python 3.x (It is in Syllabus)

OR

Apart from above standard Python. We have various Python IDEs and Code Editors. Some of them are as under:-

(i) Anaconda Distribution:- free and open-source distribution of the Python. having various inbuilt libraries and tools like jupyter Notebook, Spyder etc

- | | |
|----------------------|------------------------------|
| (ii) PyCharm | (iii) Canopy |
| (iv) Thonny | (v) Visual Studio Code |
| (vi) Eclipse + PyDev | (vii) Sublime Text |
| (viii) Atom | (ix) GNU Emacs |
| (x) Vim | (xi) Spyder and many more... |

5. Python Interpreter - Interactive And Script Mode :-

We can work in Python in Two Ways:-

(i) Interactive Mode

(ii) Script Mode

(i) Interactive Mode:- it works like a command interpreter as shell prompt works in DOS Prompt or Linux. On each (>>>) symbol we can execute one by one command.

(ii) Script Mode:- it used to execute the multiple instruction (complete program) at once.

6. Python Character Set:-

Character Set is a group of letters or signs which are specific to a language. Character set includes letter, sign, number and symbol.

- Letters: A-Z, a-z
- Digits: 0-9
- Special Symbols: `_`, `+`, `-`, `*`, `/`, `{`, `#`, `@`, `{`, `}` etc.
- White Spaces: blank space, tab, carriage return, newline, formfeed etc.
- Other characters: Python can process all characters of ASCII and UNICODE.

7. Python Tokens:-

Token is the smallest unit of any programming language. It is also known as Lexical Unit.

Types of token are

i. Keywords

ii. Identifiers (Names)

iii. Literals

iv. Operators

v. Punctuators

7.1 Keywords:- Keywords are reserved words. Each keyword has a specific meaning to the Python interpreter. As Python is case sensitive, these cannot be used as identifiers, variable name or any other purpose keywords must be written exactly as given below:-

7.2 Identifiers:- In programming languages, identifiers are names used to identify a variable, function, or other entities in a program. The rules for naming an identifier in Python are as follows:

- The name should begin with an uppercase or a lowercase alphabet or an underscore sign (`_`).
- This may be followed by any combination of characters a-z, A-Z, 0-9 or underscore (`_`). Thus, an identifier cannot start with a digit.
- It can be of any length. (However, it is preferred to keep it short and meaningful).
- It should not be a keyword or reserved word.
- We cannot use special symbols like `!`, `@`, `#`, `$`, `%`, etc. in identifiers.

Legal Identifier Names Example: `myvar` `my_var` `_my_var` `myVar` `myvar2`

Illegal Identifier Names Example:- `2myvar` `my-var` `my var=`

7.3 Literals/ Values:- Literals are often called Constant Values. Python permits following types of literals -

- a. String literals - "Rishaan"
- b. Numeric literals - 10, 13.5, 3+5i
- c. Boolean literals - True or False
- d. Special Literal None
- e. Literal collections

7.4 Operators:- An operator is used to perform specific mathematical or logical operations on values. The values that the operator works on are called operands. Python supports following types of operators -

Unary Operator

- Unary plus (+)
- Unary Minus (-)
- Bitwise complement (~)
- Logical Negation (not)

Binary Operator

- Arithmetic operator (+, -, *, /, %, **, //)
- Relational Operator(<, >, <=, >=, ==, !=)
- Logical Operator (and, or)
- Assignment Operator (=, /=, +=, -=, *=, %=, **=, //=)
- Bitwise Operator (& bitwise and, ^ bitwise xor, | bitwise or)
- Shift operator (<< shift left, >> shift right)
- Identity Operator (is, is not)
- Membership Operator (in, not in)

7.5 Punctuators:-

Punctuators are symbols that are used in programming languages to organize sentence structure, and indicate the rhythm and emphasis of expressions, statements, and program structure. Common punctuators are: ,, " # \$ @ [] {} =:;(),

8. Variable:-

- Variables are containers for storing data values.
- Unlike other programming languages, Python has no command for declaring a variable.
- A variable is created the moment you first assign a value to it.

Example:-

```
x 5
y "John"
print(x)
print(y)
```

- Variables do not need to be declared with any particular type and can even change type after they have been set.

```
x 4 # x is of type int
x "Sally" # x is now of type str
print(x)
```

- String variables can be declared either by using single or double quotes:

```
x "John"
# is the same as
x 'John'
```

Variable Names

A variable can have a short name (like x and y) or a more descriptive name (age, carname, total_volume).

Rules for Python variables:

- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive (age, Age and AGE are three different variables)

Output Variable:-

The Python print statement is often used to output variables. To combine both text and a variable, Python uses the , character:

```
x "awesome"  
print("Python is ", x)
```

Display Multiple variable:-

```
x "awesome"  
y=56  
print("Value of x and y is=" ,x,y)
```

9. Data Type:-

Every value belongs to a specific data type in Python. Data type identifies the type of data which a variable can hold and the operations that can be performed on those data.

Data Types in Python:-

- Numbers :- int, float and complex.
- List :- [5, 3.4, "New Delhi", "20C", 45]
- Tuple :- (10, 20, "Apple", 3.4, 'a')
- Strings :- str 'Hello Friend'
- Set:- {2,6,9}
- Dictionary:- {'Fruit':'Apple', 'Climate':'Cold', 'Price(kg)':120}

Mutable and Immutable data type

Mutable:- The values stored can be changes, Size of object can be changed, e.g. List, Dictionary

Immutable:- The value stored can not be changed, Size can not be changed, e.g. Tuple, String

10. Expression in python:- An expression is a combination of values, i.e., constant , variable and operator.

e.g. Expression $6-3*2+7-1$ evaluated as 6

11. Precedence and associativity of Arithmetic Operators:- Precedence and associativity helps to evaluate an expression. Let's take a look with following example:

Operator	Description	Associativity
()	Parentheses	left-to-right
**	Exponent	right-to-left
* / %	Multiplication/division/modulus	left-to-right
+ -	Addition/subtraction	left-to-right
<< >>	Bitwise shift left, Bitwise shift right	left-to-right
< <= > >=	Relational less than/less than or equal to Relational greater than/greater than or equal to	left-to-right

== !=	Relational is equal to/is not equal to	left-to-right
is, is not in, not in	Identity Membership operators	left-to-right
&	Bitwise AND	left-to-right
^	Bitwise exclusive OR	left-to-right
	Bitwise inclusive OR	left-to-right
not	Logical NOT	right-to-left
and	Logical AND	left-to-right
or	Logical OR	left-to-right
= += -= *= /= %= &= ^= = <<= >>=	Assignment Addition/subtraction assignment Multiplication/division assignment Modulus/bitwise AND assignment Bitwise exclusive/inclusive OR assignment Bitwise shift left/right assignment	right-to-left

Operator Precedence & Associativity

$$2 \times \times 4 + 20 / 2 - 5 \times \times 2$$

$\underline{A} \quad \underline{B} \quad \underline{C} \quad \underline{D} \quad \underline{E}$

① - Operator A & E have higher Precedence than B, C & D
 - E was picked first due to it right → left associativity

$$2 \times \times 4 + 20 / 2 - 25$$

② - Now operator A (××)

$$16 + 20 / 2 - 25$$

③ - Followed by C (/)

$$16 + 10 - 25$$

④ - B & D have same precedence, but their associativity is left → right ⇒ B was picked

$$26 - 25$$

⑤ - Finally D is picked

1 (Answer)

12. Comments in python:- Comments are non-executable statements of python. It increases the readability and understandability of code.

Types of comment –

i. Single line comment (#) – comments only on a single line.

e.g. *a=7 # 7 is assigned to variable 'a'*
print(a) # displaying the value stored in 'a'

ii. Multi-line comment (""" """) – Comments multiple line.

e.g. *"""Program -1
A program in python to store a value in
variable 'a' and display the value stored in it."""*
a=7
print(a)

13. Input and output in python:-

input () method - It is used to take input from the user.

print () method – It is used to display messages or result in output.

Example:-

```
Name input ("Enter your name : ")
Marks int(input ("Enter your marks "))
print("Your name is ", Name)
print("You got ", Marks, " marks")
```

14. Debugging:- Debugging is a process of locating and removing errors from a program.

Types of errors:

- a. Compile Time Error: (i) Syntax Error (ii) Semantics Error
- b. Run Time Error
- c. Logical Error

a. Compile Time Error: Compile time errors are those errors that occur at the time of compilation of the program. There are two types of compile time errors:

i. Syntax Error: These errors occur due to violation of grammatical rules of a programming language.

Example:

```
x=10
y=20
if(x<y):
    Print("a is greater than b")    # Syntax error, P is capital in Print statement
```

b. Semantics Error: Semantic errors occur when the statements written in the program are not meaningful.

Example:

```
a=10
b=20
a+b = c    # expression cannot come on the left side of the assignment operator
```

b. Run Time Error: Errors that occur during the execution or running the program are known as run time errors. When a program "crashes" or "abnormally terminated" during the execution, then these type errors are run time errors.

Example: When a loop executes infinite time.

```
a=1
while a<5:    # value of a is always less than 5, infinite loop
    print(a)
    a=a-1
```

c. Logical Error: These types of errors occur due to wrong logic. When a program successfully executes but giving wrong output, then it is known as logical error.

Example:

```
a=10
b=20
c=30
average=(a+b+c)/2    # wrong logic to find the average
print(average)
```

OUTPUT:

30.0

Steps to debug a program:

- Carefully follow the syntax of a language
- Spot the origin of error
- Read the type of error and understand it well
- Use intermediate print statements to know the value and type of a variable
- Trace the code carefully

Note: There are debuggers available in almost all sophisticated python IDEs. They are implemented with pdb. To know more, read the official documentation here: <https://docs.python.org/3/library/pdb.html>

15. Supplementary Reading:

Exception handling in python: (To deal with run time errors/exceptions)

Exception: The unusual and unexpected condition other than syntax or logical errors, encountered by a program at the time of execution, is called exception.

The purpose of the exception handling mechanism is to provide means to detect and report an exceptional circumstance, so that appropriate action can be taken.

Exception handling in python can be done using try and except blocks.

Syntax:

```
try:
    # Code that may generate an exception
except:
    # Code for handling the exception
```

Example:

```
num1=int(input("Enter first number :"))
num2=int(input("Enter second number: "))
try:
    r=num1/num2
    print("Result is :", r)
except:
    print("Divided by zero")
```

OUTPUT:

```
Enter first number : 30
Enter second number: 0
Divided by zero
```

2.2 Python Control Statements

In any programming language a program may execute sequentially, selectively or iteratively. Every programming language provides constructs to support Sequence, Selection and Iteration. In Python all these constructs can broadly be categorised in 2 categories.

Conditional Control Construct

(Selection, iteration)

Unconditional Control Construct

(pass, break, continue, exit(), quit())

Python have following types of control statements

1. Selection (branching) Statement
2. Iteration (looping) Statement
3. Jumping (break / continue)Statement

Python Selection Statements

Python have following types of selection statements

1. if statement
2. if else statement
3. Ladder if else statement (if-elif-else)
4. Nested if statement

If statements

This construct of a python program consists of one if condition with one block of statements. When the condition becomes true then executes the block given below it.

Syntax:

if (condition):

Statement(s)

Example:

```
age=int(input("Enter Age: "))
```

```
if ( age>=18):
```

```
    print("You are eligible for vote")
```

```
if(age<0):
```

```
    print("You entered Negative Number")
```

if - else statements

This construct of a python program consists of one if condition with two blocks. When the condition becomes true then executes the block given below it. If the condition evaluates the result as false, it will execute the block given below else.

Syntax:

if (condition):

Statement(s)

else:

Statement(s)

Example

```
age=int(input("Enter Age: "))
if ( age>=18):
    print("You are eligible for vote")
else:
    print("You are not eligible for vote")
```

Ladder if else statements (if-elif-else)

This construct of a python program consists of more than one if condition. When the first condition evaluates the result as true then executes the block given below it. If the condition evaluates the result as false, it transfers the control at the else part to test another condition. So, it is a multi-decision making construct.

Syntax:

```
if ( condition-1):
    Statement(s)
elif (condition-2):
    Statement(s)
elif (condition-3):
    Statement(s)
else:
    Statement(s)
```

Example:

```
num=int(input("Enter Number: "))
If ( num>=0):
    print("You entered positive number")
elif ( num<0):
    print("You entered Negative number")
else:
    print("You entered Zero ")
```

Nested if statements

It is the construct where one if condition takes part inside of another if condition. This construct consists of more than one if condition. Block executes when the condition becomes false and the next condition evaluates when the first condition becomes true.

So, it is also a multi-decision making construct.

Syntax:

```
if ( condition-1):
    if (condition-2):
        Statement(s)
    else:
        Statement(s)
```

Example:

```
num=int(input("Enter Number: "))
if ( num<=0):
    if ( num<0):
        print("You entered Negative number")
    else:
        print("You entered Zero ")
else:
    print("You entered Positive number")
```

Python Iteration Statements

The iteration (Looping) constructs mean to execute the block of statements again and again depending upon the result of condition. This repetition of statements continues till condition meets True result. As soon as the condition meets a false result, the iteration stops.

Python supports following types of iteration statements

1. while
2. for

Four Essential parts of Looping:

- i. Initialization of control variable
- ii. Condition testing with control variable
- iii. Body of loop Construct
- iv. Increment / decrement in control variable

Python while loop

The while loop is a conditional construct that executes a block of statements again and again till the given condition remains true. Whenever the condition meets result false then loop will terminate.

Syntax:

Initialization of control variable

while (condition):

.....

Updation in control variable

.....

Example: Sum of 1 to 10 numbers.

```
num=1
```

```
sum=0
```

```
while(num<=10):
```

```
    sum + num
```

```
    num + 1
```

```
print("The Sum of 1- 10 numbers: ",sum)
```

Python range() Function

The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.

Syntax:

range(**start** value, **stop** value, **step** value)

Where all 3 parameters are of integer type

- Start value is Lower Limit
- Stop value is Upper Limit
- Step value is Increment / Decrement

Note: The Lower Limit is included but Upper Limit is not included in result.

Example

`range(5)` => sequence of 0,1,2,3,4
`range(2,5)` => sequence of 2,3,4
`range(1,10,2)` => sequence of 1,3,5,7,9
`range(5,0,-1)` => sequence of 5,4,3,2,1
`range(0,-5)` => sequence of [] blank list
 (default Step is +1)
`range(0,-5,-1)` => sequence of 0, -1, -2, -3, -4
`range(-5,0,1)` => sequence of -5, -4, -3, -2, -1
`range(-5,1,1)` => sequence of -5, -4, -3, -2, -1, 0

Python for loop

A for loop is used for iterating over a sequence (that is either a list, a tuple, a string etc.) With for loop we can execute a set of statements, and for loop can also execute once for each element in a list, tuple, set etc.

Example: print 1 to 10 numbers

```
for num in range(1,11,1):  
    print(num, end=" ")
```

Output: 1 2 3 4 5 6 7 8 9 10

Un- Conditional Control Construct

(pass, break, continue, exit(), quit())

pass Statement (Empty Statement)

The pass statement does nothing, but it is used to complete the syntax of programming concepts. Pass is useful in the situation where the user does not require any action but syntax requires a statement. The Python compiler encounters a pass statement then it does nothing but transfer the control in flow of execution.

Example

```
a=int(input("Enter first Number: "))  
b=int(input("Enter Second Number: "))  
if(b==0):  
    pass  
else:  
    print("a/b=",a/b)
```

Jumping Statements

- break
- continue

break Statement

The jump- break statement enables you to skip over a part of code that is used in a loop even if the loop condition remains true. It terminates to that loop in which it lies. The execution continues from the statement which finds the loop terminated by break.

Continue Statement

Continue statement is also a jump statement. With the help of a continue statement, some of the statements in the loop skipped over and started the next iteration. It forcefully stop the current iteration and transfers the flow of control at the loop controlling condition.

2.3 LIST

Definition : A List is a collection of comma separated values within a square bracket. Items in a list need not to be the same.

Features of list

- A List is used to store a sequence of values / items.
- All Elements of a list are enclosed in [] square brackets.
- Items / values are separated by comma.
- Lists are mutable (changeable) in python.

Different type of lists

List of text

```
Fruit=['Mango','Orange','Apple']
```

#List of Characters

```
Grade=['A','B','C']
```

List of integers

```
Marks=[75,63,95]
```

List of floats

```
Amount=[101.11,125.81,99.99]
```

List with different data types

```
Record=[75,'Mango',101.11]
```

List within a List

```
list1=[2,3,[2,3]]
```

List with text splitted into chars

```
list2=list('IP&CS')
```

#Empty list

```
list3=list()
```

Creation of list from user input

eval()– this method can be used to accept tuples from users. Which can be converted to list, using the list() method.

E.g.

```
T=eval(input("Enter a set of numbers "))
```

```
print("Tuple is ",T)
```

```
L=list(T)
```

```
print("List is ",L)
```

Output

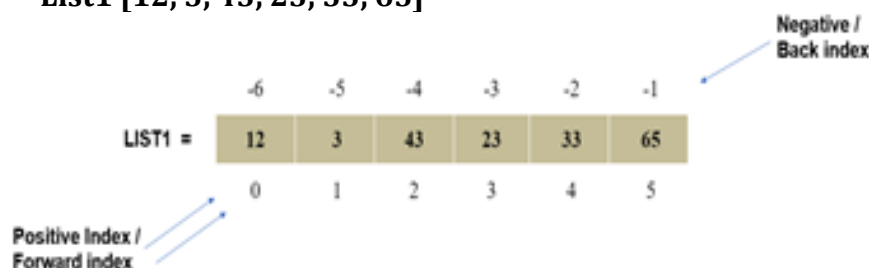
Enter a set of numbers 4,7,5,6,9,2

Tuple is(4,7,5,6,9,2)

List is=[4,7,5,6,9,2]

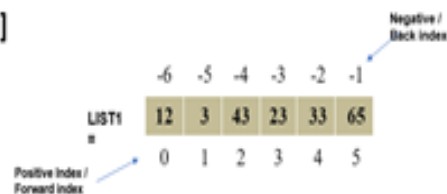
List Indexing

List1 [12, 3, 43, 23, 33, 65]



Accessing elements from a list

List1 = [12, 3, 43, 23, 33, 65]



List1[2]	=> 43
List1[0]	=> 12
List1[-3]	=> 23

Traversing of list elements (Iteration/Looping over a list)

List1=[12,3,43,23,33,65]

Method-1

List1 [12,3,43,23,33,65] both result in same O/P
for i in range(0,len(List1)):
 print(List[i])

12

3

43

Method-2

List1 [12,3,43,23,33,65]
for x in List1:
 print(x)

23

33

65

SLICING : Accessing a part of a list is known as slicing.

-9 -8 -7 -6 -5 -4 -3 -2 -1

A	M	I	T		J	A	I	N
0	1	2	3	4	5	6	7	8

List1 ['A', 'M', 'I', 'T', '', 'J', 'A', 'I', 'N']

Statement	Output	Explanation
print(List1[:])	['A', 'M', 'I', 'T', '', 'J', 'A', 'I', 'N']	<i>list_object[Start:End:Step]</i> Select from <u>Start index to end-1 index</u> , with <u>jump of step</u> for the next and subsequent element selection.
print(List1[2:])	['I', 'T', '', 'J', 'A', 'I', 'N']	
print(List1[:6])	['A', 'M', 'I', 'T', '', 'J']	
print(List1[0:4])	['A', 'M', 'I', 'T']	
print(List1[3:6])	['T', '', 'J']	
print(List1[-2:-5])	[]	
print(List1[-5:-2])	['', 'J', 'A']	
print(List1[1:7:2])	['M', 'T', 'J']	

ADDITION OF ELEMENTS IN LIST: *Two ways to add an item in the list*

1. Append command	
append() is used to add only one element at a time.	
ListF [44, 55]	
ListF	# [44, 55]
ListF.append(77)	
ListF	# [44, 55, 77]
ListF.append(88,88)	# Error
ListF.append([88, 99])	# [44, 55, 77, [88, 99]]

2. Extend command	
extend() is used to add one or more elements	
ListF [44, 55]	
List F	# [44, 55]
ListF.extend(77)	# Error
ListF.extend([77])	# [44, 55, 77]
ListF.extend([88, 99])	# [44, 55, 77, 88, 99]

MODIFICATION /UPDATION OF ITEM

ListD[36, 46, 56, 66, 76]	Output
ListD[2]	# 56
ListD[2] 1000	# 56
ListD[2]	# 1000
ListD	# [36, 46, 1000, 66, 76]
ListD[2:3]400,500	# [36, 46, 400, 500, 66, 76]

DELETION OF ELEMENTS FROM LIST

Using del command

O/P

```
List1=[44,55,66,77,88]
del List1[2]
print(List1)           [44,55,77,88]
del List1[1:3]
print(List1)           [44,88]
```

Using pop(index) method

O/P

```
L1=['K', 'V', '4']
print(L1.pop( ))       4
print(L1.pop(1))       V
print(L1)               ['K', '4']
print(L1.pop(-1))      4
```

OPERATIONS ON THE LIST

E.g. L1=[23,12,43,22,5,34]

L2=[4,3,5]

Sl. No.	Operator	For List L1 & L2	Output
1	Concatenation '+'	L1+L2	[23, 12, 43, 22, 5, 34, 4, 3, 5]
2	Replication/ Repetition '*'	L2*3	[4,3,5,4,3,5,4,3,5]
3	Membership 'in' and 'not in' (Check presence of element)	43 in L1 3 not in L2	True False

METHODS / FUNCTIONS

E.g. L1=[23,12,43,23,5,34]

L2=['K', 'V', 'S']

Sl. No.	Method / Function	Example For given list L1 & L2	Output
1	index(item) To display index of an item	L1.index(43)	2
2	insert(index, item) To add an item at given index	L2.insert(1, 'A')	['K','A','V','S']
3	reverse() Reverse the order of elements	L2.reverse()	['S','V','A','K']
4	len(List) Returns length of list	len(L1)	6
5	sort() Arrange the elements in ascending or descending Order	Ascending order L2.sort() Descending order L2.sort(reverse =True)	['A','K','S','V'] ['V','S','K','A']
6	count(item) Counts frequency of an item	L1.count(23)	2
7	remove(item) Remove the item	L2.remove('A')	['K','V','S']

8	max(list) Returns maximum value	max(L1)	43
9	min(list) Returns minimum value	min(L1)	5

2.4 DICTIONARY

Key points: -

- Python Dictionaries are a collection of some **key:value** pairs.
- Python Dictionaries are **unordered** collection
- Dictionaries are **mutable** means values in a dictionary can be changed using its key
- Keys are **unique**.
- Enclosed within brace { }

Working with dictionaries	
Creating Python Dictionary dict() method	# empty dictionary my_dict {} # dictionary with integer keys my_dict {1: 'apple', 2: 'ball'} # dictionary with mixed keys my_dict {'name': 'John', 1: [2, 4, 3]} # using dict() my_dict dict({1:'apple', 2:'ball'})
Accessing Elements from Dictionary get() method	my_dict {'name': 'Jack', 'age': 26} print(my_dict['name']) print(my_dict.get('age')) # Trying to access keys which doesn't exist returns None print(my_dict.get('address')) # KeyError print(my_dict['address']) <u>Output: -</u> Jack 26 None Traceback (most recent call last): File "<string>", line 15, in <module> print(my_dict['address']) KeyError: 'address'
Changing and Adding Dictionary elements	# Changing and adding Dictionary Elements my_dict {'name': 'Jack', 'age': 26} # update value my_dict['age'] 27 print(my_dict) # add item my_dict['address']= 'Downtown' print(my_dict) <u>Output: -</u> {'name': 'Jack', 'age': 27} {'name': 'Jack', 'age': 27, 'address': 'Downtown'}
Removing elements from Dictionary	# Removing elements from a dictionary squares {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

pop() method	# remove a particular item, returns its value print(squares.pop(4)) print(squares)
popitem method()	# remove an arbitrary item, return (key,value) print(squares.popitem()) print(squares)
clear() method	# remove all items squares.clear() print(squares)
del function	# delete the dictionary itself del squares <u>Output: -</u> 16 {1: 1, 2: 4, 3: 9, 5: 25} (5, 25) {1: 1, 2: 4, 3: 9} {}
len() - Finding number of items in dictionary	dict={'Name':'Aman','Age':3} print("Length: - ", len(dict)) <u>OUTPUT</u> Length:- 2
keys() - returns all the available keys	x=dict(name="Aman",age=37,country="India") print(x.keys()) <u>OUTPUT</u> dict_keys(['country','age','name'])
values() - returns all the available values	x=dict(name="Aman",age=37,country="India") print(x.values()) <u>OUTPUT</u> dict_values(['India',37,'Aman'])
items() - return the list with all dictionary keys with values.	x=dict(name="Aman",age=37,country="India") print(x.items()) <u>OUTPUT-</u> dict_items([('country','India'),('age',37),('name','Aman')])
update() - used to change the values of a key and add new keys	x=dict(name="Aman",age=37,country="India") d1=dict(age=39) x.update(d1,state="Rajasthan") print(x) <u>OUTPUT-</u> {'country':'India','age':39,'name':'Aman','state':'Rajasthan'}
fromkeys() i- is used to create dictionary from keys	keys={'a','e','i','o','u'} value="Vowel" vowels=dict.fromkeys(keys,value) print(vowels) <u>OUTPUT-</u> {'i':'Vowel','u':'Vowel','e':'Vowel','a':'Vowel','o':'Vowel'}

copy() - returns a shallow copy of the dictionary.	<pre>x=dict(name="Aman",age=37,country="India") y=x.copy() print(y) OUTPUT->{'country':'India','age':37,'name':'Aman'}</pre>
Dictionary Membership Test in not in	#Membership Test for Dictionary Keys squares {1: 1, 3: 9, 5: 25, 7: 49, 9: 81} <pre>print(1 in squares) print(2 not in squares) print(49 in squares)</pre> <p><u>Output -</u> True True False</p>
Iterating Through a Dictionary	# Iterating through a Dictionary squares {1: 1, 3: 9, 5: 25, 7: 49, 9: 81} <pre>for i in squares: print(squares[i])</pre> <p>Output- 1 9 25 49 81</p>

Unit 3: Database concepts and the Structured Query Language

- Database Concepts: Introduction to database concepts and its need, Database Management System.
- Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key
- Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types
- Data Definition: CREATE TABLE
- Data Query: SELECT, FROM, WHERE.
- Data Manipulation: INSERT

3.1 Database Concepts: Introduction to database concepts and its need, Database Management System.

Manual Record Keeping System : A System where records are maintained by hand, without using a computer system.

Advantages of Manual Record Keeping System :

1. It is less expensive.
2. Less risk of data loss.
3. No software specialised person is required.

Disadvantages of Manual Record Keeping System :

1. No sharing of data.
2. More chances of inconsistent data.
3. Making correction is very time consuming.

Electronic Record Keeping System : A System in which records are maintained in computer system instead of in paper.

Advantages of Electronic Record Keeping System :

1. Less paper wastage.
2. Searching of record is very simple.
3. Easy to backup the documents.

Disadvantages of Electronic Record Keeping System :

1. More expensive.
2. More risk to data loss.
3. A Software specialised person is required to manage this system.

Database Management System : A database management system (DBMS) is a software that can be used to create and manage databases. Some examples of open source and commercial DBMS include MySQL, Oracle, PostgreSQL, SQL Server, Microsoft Access, MongoDB etc.

3.2 Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key

RDBMS:

RDBMS stands for Relational Database Management System. RDBMS is the basis for SQL, and for all modern database systems like MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access. The data in RDBMS is stored in database objects called tables. A table is a collection of related data entries and it consists of columns and rows.

Common Terms used in DBMS :

Attributes : The columns of a relation are the attributes which are also referred to as fields.

Tuple : Each row of data in a relation (table) is called a tuple. It is also known as a record.

Domain : It is a set of values from which an attribute can take a value in each row. Usually, a data type is used to specify a domain for an attribute.

Degree : The number of attributes in a relation is called the Degree of the relation.

Cardinality : The number of tuples in a relation is called the Cardinality of the relation.

Key Concepts in DBMS :

Database Schema : It is the skeleton of the database that represents the structure (table names and their fields/columns), the type of data each column can hold, constraints on the data to be stored (if any), and the relationships among the tables.

Data Constraint : Certain restrictions or limitations on the type of data that can be inserted in one or more columns of a table during table creation is called data constraint. Constraints are used to ensure accuracy and reliability of data in the database.

Meta-data or Data Dictionary : The database schema along with various constraints on the data is stored by DBMS in a database catalog or dictionary, called meta-data. A meta-data is data about the data.

Database Instance : When we define database structure or schema, state of database is empty i.e. no data entry is there. After loading data, the state or snapshot of the database at any given time is the database instance.

Query : A query is a request to a database for obtaining information in a desired way. Query can be made to get data from one table or from a combination of tables.

Data Manipulation : Modification of database consists of three operations viz. Insertion, Deletion or Update. Insertion means adding a new record in a table. Deletion means removing an existing record from a table. Updation means editing an existing record in a table.

Database Engine : Database engine is the underlying component or set of programs used by a DBMS to create a database and handle various queries for data retrieval and manipulation.

Three Important Properties of a Relation : In relational data model, following three properties are observed with respect to a relation which makes a relation different from a data file or a simple table.

Property-1 : imposes following rules on an attribute of the relation.

1. Each attribute in a relation has a unique name.
2. Sequence of attributes in a relation is immaterial.

Property-2 : imposes following rules on tuples of the relation.

1. Each tuple in a relation is distinct.
2. Sequence of tuples in a relation is immaterial.

Property-3 : imposes following rules on the state of a relation.

1. All data values in an attribute must be from the same domain (same data type).
2. Each data value associated with an attribute must be atomic.
3. No attribute can have many data values in one tuple.
4. A special value Null is used to represent values that are unknown.

Keys in Relational Database :

Candidate Key : Those fields which can act as a primary key in a table are called candidate Key.

Primary Key : A field which uniquely identifies each and every record in the table is called primary key.

Composite Primary Key : If no single attribute in a relation is able to uniquely identify the tuples, then more than one attribute is taken together as primary key. Such a primary key consisting of more than one attribute is called Composite Primary key.

Foreign Key : A foreign key is used to represent the relationship between two relations. A foreign key is an attribute whose value is derived from the primary key of another relation.

Note: In some cases, foreign key can take a NULL value if it is not part of the primary key of the foreign table. The relation in which the referenced primary key is defined is called primary relation or master relation.

3.3 INTRODUCTION TO MYSQL

-Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types

-Data Definition: CREATE TABLE

-Data Query: SELECT, FROM, WHERE.

-Data Manipulation: INSERT

What is MySQL?:

MySQL is a open source Relational Database Management System. MySQL is very fast reliable and flexible Database Management System. It provides a very high performance and it is multi threaded and multi user Relational Database management system.

MySQL Features

1. MySQL are very fast and much reliable for any type of application.
2. MySQL is very Lightweight application.

3. MySQL command line tool is very powerful and can be used to run SQL queries against database.
4. MySQL supports indexing and binary objects.
5. It is allow changes to structure of table while server is running.
6. MySQL has a wide user base.
7. It is a very fast thread-based memory allocation system.
8. MySQL Written in C and C++ language.
9. MySQL code is tested with different compilers.
10. MySQL is available as a separate program for use in a client/server network environment.

Advantages of MySql:

- **Reliability and Performance** : MySQL is very reliable and high performance relational database management system. It can used to store many GB's of data into database.
- **Open Source**: MySQL source code is available that's why now you can recompile the source code.
- **Cross-Platform support**: MySQL supports more then twenty different platform including the major Linux distribution .Mac OS X, Unix and Microsoft windows.

Keep in Mind That...

- SQL is not case sensitive in windows but it is if you use linux based environment.
- Semicolon after SQL Statements

Classification of SQL statements

SQL provides many different types of commands used for different purposes. SQL can be divided into following parts:

1. Data Manipulation Language (DML) commands
2. Data Definition Language (DDL) commands.
3. Transaction Control Language (TCL)- **Not part of our syllabus**

1. DML commands: A DML is a language that enables users to access manipulated data as organized by the appropriate data model.

- SELECT - extracts data from a database (**DQL**)
- UPDATE - updates data in a database **Not part of our syllabus**
- DELETE - deletes data from a database **Not part of our syllabus**
- INSERT INTO - inserts new data into a database

2. DDL commands: The DDL commands, as the name suggests, allow you to perform tasks related to data definition. The DDL part of SQL permits database tables to be created or deleted. The most important DDL statements in SQL are:

- CREATE DATABASE - creates a new database
- ALTER DATABASE - modifies a database **Not part of our syllabus**
- CREATE TABLE - creates a new table
- ALTER TABLE - modifies a table **Not part of our syllabus**
- DROP TABLE - deletes a table **Not part of our syllabus**

MySQL Data Types

In MySQL there are three main data types: text, number, and Date/Time,

Text types:

Data type	Description
CHAR(size)	Holds a fixed length string (can contain letters, numbers, and special characters). The fixed size is specified in parenthesis. Can store up to 255 characters
VARCHAR(size)	Holds a variable length string. The maximum size: up to 255 characters. Note: If you put a greater value than 255 it will be converted to a TEXT type
TEXT	Holds a string with a maximum length of 65,535 characters

Number types:

Data type	Description
INT(size)	-2147483648 to 2147483647 normal. 0 to 4294967295 UNSIGNED*. The maximum number of digits may be specified in parenthesis
FLOAT(size,d)	A small number with a floating decimal point. The maximum number of digits may be specified in the size parameter. The maximum number of digits to the right of the decimal point is specified in the d parameter
DECIMAL(size,d)	A DOUBLE stored as a string, allowing for a fixed decimal point. The maximum number of digits may be specified in the size parameter. The maximum number of digits to the right of the decimal point is specified in the d parameter

*The integer types have an extra option called UNSIGNED. Normally, the integer goes from an negative to positive value. Adding the UNSIGNED attribute will move that range up so it starts at zero instead of a negative number.

Date types:

Data type	Description
DATE()	A date. Format: YYYY-MM-DD Note: The supported range is from '1000-01-01' to '9999-12-31'
DATETIME()	*A date and time combination. Format: YYYY-MM-DD HH:MM:SS Note: Range is from '1000-01-01 00:00:00' to '9999-12-31 23:59:59'
TIMESTAMP()	*A timestamp. TIMESTAMP values are stored as the number of seconds since the Unix epoch ('1970-01-01 00:00:00' UTC). Format: YYYY-MM-DD HH:MM:SS Range is from '1970-01-01 00:00:01' UTC to '2038-01-09 03:14:07' UTC
TIME()	A time. Format: HH:MM:SS Note: The supported range is from '-838:59:59' to '838:59:59'
YEAR()	A year in two-digit or four-digit format. Note: Values allowed in four-digit format: 1901 to 2155. Values allowed in two-digit format: 70 to 69, representing years from 1970 to 2069

*Even if DATETIME and TIMESTAMP return the same format, they work very differently. In an INSERT or UPDATE query, the TIMESTAMP automatically set itself to the current date and time. TIMESTAMP also accepts various formats, like YYYYMMDDHHMMSS, YYMMDDHHMMSS, YYYYMMDD, or YYMMDD.

The CREATE TABLE Statement (DDL)

The CREATE TABLE statement is used to create a table in a database.

SQL CREATE TABLE Syntax

```
CREATE TABLE table_name
(
  column_name1 data_type,
  column_name2 data_type,
  column_name3 data_type,
  ....
)
```

CREATE TABLE Example

Now we want to create a table called "Persons" that contains five columns: P_Id, LastName, FirstName, Address, and City.

We use the following CREATE TABLE statement:

```
CREATE TABLE Persons
(
  P_Id int,
  LastName varchar(255),
  FirstName varchar(255),
  Address varchar(255),
  City varchar(255)
)
```

The P_Id column is of type int and will hold a number. The LastName, FirstName, Address, and City columns are of type varchar with a maximum length of 255 characters.

The empty "Persons" table will now look like this:

P_Id	LastName	FirstName	Address	City

The empty table can be filled with data with the INSERT INTO statement.

SQL Constraints **(Not part of the syllabus)**

Constraints are used to limit the type of data that can go into a table. Constraints can be specified when a table is created (with the CREATE TABLE statement) or after the table is created (with the ALTER TABLE statement). We will focus on the following constraints:

- NOT NULL
- UNIQUE
- PRIMARY KEY
- FOREIGN KEY
- CHECK
- DEFAULT

SQL PRIMARY KEY Constraint

- The PRIMARY KEY constraint uniquely identifies each record in a database table.
- Primary keys must contain unique values. A primary key column cannot contain NULL values.
- Each table should have a primary key, and each table can have only one primary key.

SQL PRIMARY KEY Constraint on CREATE TABLE

The following SQL creates a PRIMARY KEY on the "P_Id" column when the "Persons" table is created:

Example:

```
CREATE TABLE Persons
(
P_Id int NOT NULL,
LastName varchar(255) NOT NULL,
FirstName varchar(255),
Address varchar(255),
City varchar(255),
PRIMARY KEY (P_Id)
)
```

Note: We will use the following table for subsequent queries:

Persons

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar
4	Nilsen	Johan	Bharat Nagar	Srinagar

The INSERT INTO Statement (DML)

The INSERT INTO statement is used to insert a new row in a table.

SQL INSERT INTO Syntax

It is possible to write the INSERT INTO statement in two forms.

The first form doesn't specify the column names where the data will be inserted, only their values:

```
INSERT INTO table_name
VALUES (value1, value2, value3,...)
```

The second form specifies both the column names and the values to be inserted:

```
INSERT INTO table_name (column1, column2, column3,...)
VALUES (value1, value2, value3,...)
```

SQL INSERT INTO Example

We have the following "Persons" table:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

Now we want to insert a new row in the "Persons" table.

We use the following SQL statement:

```
INSERT INTO Persons  
VALUES (4,'Nilsen', 'Johan', 'Bharat Nagar', 'Srinagar')
```

The "Persons" table will now look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar
4	Nilsen	Johan	Bharat Nagar	Srinagar

Insert Data Only in Specified Columns

It is also possible to only add data in specific columns.

The following SQL statement will add a new row, but only add data in the "P_Id", "LastName" and the "FirstName" columns:

```
INSERT INTO Persons (P_Id, LastName, FirstName)  
VALUES (5, 'Teja', 'Jaeb')
```

The "Persons" table will now look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar
4	Nilsen	Johan	Bharat Nagar	Srinagar
5	Teja	Jaeb		

5	Teja	Jaeb		
---	------	------	--	--

SQL SELECT Statement (DQL)

The SELECT statement is used to select data from a database. The result is stored in a result table, called the result-set.

Syntax:

SELECT column_name(s) *FROM* table_name;

and

SELECT * *FROM* table_name;

SQL SELECT Example

SELECT LastName, FirstName FROM Persons;

Output:

LastName	FirstName
Halwani	Oneer
Siddiqui	Taimur
Prasad	Kishan

SELECT * Example

Now we want to select all the columns from the "Persons" table. We use the following SELECT statement:

SELECT * FROM Persons; // The asterisk (*) is a quick way of selecting all columns

Output:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

The SQL SELECT DISTINCT Statement

In a table, some of the columns may contain duplicate values. This is not a problem, however, sometimes you will want to list only the different (distinct) values in a table. The DISTINCT keyword can be used to return only distinct (different) values.

SQL SELECT DISTINCT Syntax

```
SELECT          DISTINCT
column_name(s)
FROM table_name
```

SELECT DISTINCT Example

Example:

SELECT DISTINCT City FROM Persons

Output:

City
Surat
Srinagar

The WHERE Clause

The WHERE clause is used to extract only those records that fulfill a specified criterion.

SQL WHERE Syntax

```
SELECT <column_name(s)>
FROM <table_name>
WHERE <column_name> operator <value>
```

WHERE Clause Example

The "Persons" table:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

Now we want to select only the persons living in the city "Surat" from the table above. We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE City='Surat'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat

Quotes Around Text Fields

SQL uses single quotes around text values (most database systems will also accept double quotes). Although, numeric values should not be enclosed in quotes.

For text values:

This is correct:

```
SELECT * FROM Persons WHERE FirstName='Taimur'
```

This is wrong:

```
SELECT * FROM Persons WHERE FirstName=Taimur
```

For numeric values:

This is correct:

```
SELECT * FROM Persons WHERE Year=1965
```

This is wrong:

```
SELECT * FROM Persons WHERE Year='1965'
```

Operators Allowed in the WHERE Clause

With the WHERE clause, the following operators can be used:

Operator	Description
=	Equal
<>	Not equal
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal
BETWEEN	Between an inclusive range
LIKE	Search for a pattern
IN	If you know the exact value you want to return for at least one of the columns

Note: In some versions of SQL the <> operator may be written as !=

The AND & OR Operators

The AND & OR operators are used to filter records based on more than one condition. The AND operator displays a record if both the first condition and the second condition is true. And OR operator displays a record if either the first condition or the second condition is true.

AND Operator Example

```
SELECT * FROM Persons  
WHERE FirstName='Taimur'  
AND LastName='Siddiqui'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
2	Siddiqui	Taimur	23 Banjara Hills	Surat

OR Operator Example

Now we want to select only the persons with the first name equal to "Taimur" OR the first name equal to "Oneer":

We use the following SELECT statement:

```
SELECT * FROM Persons  
WHERE FirstName='Taimur'  
OR FirstName='Oneer'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat

SQL LIKE Operator

The LIKE operator is used in a WHERE clause to search for a specified pattern in a column. It is used to search for a specified pattern in a column.

SQL LIKE Syntax

```
SELECT column_name(s)  
FROM table_name  
WHERE column_name LIKE pattern
```

LIKE Operator Example

```
SELECT * FROM Persons  
WHERE City LIKE 's%'
```

Pattern (SQL Wildcards)

SQL wildcards can substitute for one or more characters when searching for data in a database.

SQL wildcards must be used with the SQL LIKE operator. With SQL, the following wildcards can be used:

Wildcard	Description
----------	-------------

%	A substitute for zero or more characters
_	A substitute for exactly one character
[charlist]	Any single character in charlist
[^charlist] or [!charlist]	Any single character not in charlist

SQL Wildcard Examples

Using the % Wildcard

Now we want to select the persons living in a city that starts with "sa" from the "Persons" table. We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE City LIKE 'su%'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat

Next, we want to select the persons living in a city that contains the pattern "nes" from the "Persons" table. We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE City LIKE '%rat%'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat

Using the _ Wildcard

Now we want to select the persons with a first name that starts with any character, followed by "la" from the "Persons" table.

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE FirstName LIKE '_neer'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
------	----------	-----------	---------	------

1	Halwani	Oneer	Tapovan 10	Surat
---	---------	-------	------------	-------

Next, we want to select the persons with a last name that starts with "S", followed by any character, followed by "end", followed by any character, followed by "on" from the "Persons" table.

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE LastName LIKE 'S_dd_ui'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
2	Siddiqui	Taimur	23 Banjara Hills	Surat

Using the [charlist] Wildcard

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE LastName LIKE '[qr]%'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE LastName LIKE '[!eqr]%'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat

The IN Operator

The IN operator allows you to specify multiple values in a WHERE clause.

SQL IN Syntax

```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1,value2,...)
```

IN Operator Example

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE LastName IN ('Halwani','Prasad')
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

The BETWEEN Operator

The BETWEEN operator selects a range of data between two values. The values can be numbers, text, or dates.

SQL BETWEEN Syntax

```
SELECT column_name(s)
FROM table_name
WHERE column_name
BETWEEN value1 AND value2
```

BETWEEN Operator Example

The "Persons" table:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

Now we want to select the persons with a last name alphabetically between "Halwani" and "Prasad" from the table above.

We use the following SELECT statement:

```
SELECT * FROM Persons
WHERE LastName
BETWEEN 'Halwani' AND
'Prasad'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
1	Halwani	Oneer	Tapovan 10	Surat

Note: The BETWEEN operator is treated differently in different databases.

In some databases, persons with the LastName of "Halwani" or "Prasad" will not be listed, because the BETWEEN operator only selects fields that are between and excluding the test values).

In other databases, persons with the LastName of "Halwani" or "Prasad" will be listed, because the BETWEEN operator selects fields that are between and including the test values).

And in other databases, persons with the LastName of "Halwani" will be listed, but "Prasad" will not be listed (like the example above), because the BETWEEN operator selects fields between the test values, including the first test value and excluding the last test value.

Therefore: Check how your database treats the BETWEEN operator.

Example 2

To display the persons outside the range in the previous example, use NOT BETWEEN:

```
SELECT * FROM Persons
WHERE LastName
NOT BETWEEN 'Halwani' AND 'Prasad'
```

The result-set will look like this:

P_Id	LastName	FirstName	Address	City
2	Siddiqui	Taimur	23 Banjara Hills	Surat
3	Prasad	Kishan	Shonitpuram	Srinagar

SQL Alias (Not part of the syllabus)

You can give a table or a column another name by using an alias. This can be a good thing to do if you have very long or complex table names or column names. An alias name could be anything, but usually it is short.

SQL Alias Syntax for Columns

```
SELECT column_name AS alias_name
FROM table_name;
```


Unit 4: Introduction to the Emerging Trends

Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology

4.1 Artificial Intelligence (AI): Artificial intelligence, or I, refers to devices or programmes that resemble human intelligence in order to carry out tasks and have the ability to iteratively improve themselves based on the data they gather.

Artificial intelligence aims to imitate human intelligence naturally in machines so that they will act intelligently. An intelligent machine should be able to mimic some of the cognitive processes that people use to learn, make decisions, and solve problems.

Machines are trained to build a knowledge base and base judgments off of it in order to complete jobs with the least amount of human involvement. In order to make new judgments, AI systems can also learn from their prior actions or results.

4.1.1 Machine Learning: Machine learning is a branch of artificial intelligence that enables computers to learn from data using statistical methods without explicit human programming. It includes algorithms that use information to learn on their own and anticipate the future.

4.1.2 Natural Language Processing (NLP): Natural Language Processing (NLP) It deals with how people and computers communicate using human spoken languages like Hindi, English, etc. In fact, using our voice to conduct a web search, use a device, or control another device is achievable. NLP has made all of this feasible. An NLP system can convert speech to text and text to speech.

4.2 Immersive Experiences: Now movies are three dimensional, video games are also being developed to provide immersive experiences to the player. Immersive experiences allow us to visualize, feel and react by stimulating our senses. It enhances our interaction and involvement, making them more realistic and engaging. Immersive experiences have been used in the field of training, such as driving simulators , flight simulators and so on.

- **Virtual Reality** – Virtual Reality (VR) is a three-dimensional, computer-generated situation that simulates the real world. The user can interact with and explore that environment by getting immersed in it while interacting with the objects and other actions of the user.
- **Augmented Reality** – The term “augmented reality” refers to the superimposition of computer-generated perceptual information over the actual physical surroundings (AR). Consider Pokémon Go as an illustration, where players look for animated characters that appear in their real-world surroundings on their phone or tablet.

4.3 Robotics: A robot is essentially a machine that can complete one or more activities accurately and precisely on its own. A robot is programmable by a computer, which implies it can obey commands supplied by computer programmes, unlike other devices.

Mars Exploration Rover (MER) is a robotic space mission launched by NASA to learn more about the planet Mars. Sophia is a humanoid robot that mimics human

movements and facial expressions and uses artificial intelligence, visual data processing, and facial recognition.

An unmanned aircraft called a drone can be remotely piloted or can fly on its own using software-controlled flight plans in embedded systems in conjunction with onboard sensors and GPS.

4.4 Big Data: Every day, over 2.5 quintillion bytes of data are generated, and the rate is rising due to the Internet of Things' ongoing development (IoT). As a result, big data, data sets with a large volume and high level of complexity are created.

Such data cannot be handled and analyzed using conventional data processing methods because it is not only large but also unstructured, such as our posts, conversations, and instant messages, as well as the pictures.

This data is highly valuable in the businesses, So, there is a strong focus on developing tools and processes to process and analyze big data.

Characteristics of Big Data There are five different types of characteristics of Big Data –

1. **Volume** – Size presents the biggest challenge for large data. It will be challenging to process a certain dataset if it is large.
2. **Velocity** – Velocity is the term used to describe the speed with which information must be processed after being input into a system. For example, Amazon record every click of the mouse when the shoppers are browsing on its website.
3. **Variety** – All the organized and unstructured data that could be produced by either people or machines is referred to as variety in big data.
4. **Veracity** – Big data can occasionally be inaccurate, distorted, noisy, or contain errors. It can also have problems with the methods used to obtain the data. Veracity relates to how reliable the data is.
5. **Value** – Big data is more than just a large collection of data; it also contains hidden patterns and insightful information that may be highly valuable to businesses.

4.5 Data Analytics: The practice of analysing datasets to make judgments about the information they contain is known as data analytics. You can take raw data and use data analytical tools to find patterns and gain insightful conclusions from it.

“Data analytics is the process of examining data sets in order to draw conclusions about the information they contain, with the aid of specialised systems and software.

4.6 "Internet of Things (IoT) The “Internet of Things” is a collection of interconnected devices that can connect to one another and exchange data in the same network or you can say, It is an overall network of interconnected devices as well as the technology that enables communication between them.

4.7 Web of Things (WoT) Internet of Things allows us to interact with different devices through the Internet with the help of smartphones or computers, Web of Things (WoT) allows use of web services to connect anything in the physical world, besides human identities on the web. It will pave the way for creating smart homes, smart offices, smart cities and so on.

4.8 Sensors: Sensors are frequently used as monitoring and observing components. The development of IoT is being greatly aided by the evolution of smart electronic sensors. It will result in the development of fresh, intelligent systems with sensors.

A smart sensor is a device that receives input from the physical world and uses internal computer power to carry out predetermined tasks when a certain input is detected. The data is then processed before being transmitted. Smart Cities A smart city use the information and communication technologies (ICT), for creating, implementing, and promoting sustainable development methods to handle the issues of expanding urbanisation.

4.9 Smart City: handle transportation systems, power plants, water supply networks, waste management, law enforcement, information systems, schools, libraries, hospitals and other community services work in unison to optimise the efficiency of city operations and services through the information and communication technologies.

4.10 Cloud Computing: Cloud computing is a new trend where computer-based services are supplied via the Internet or the cloud and are accessible to the user from any location using any device.

Cloud computing is the distribution of computer services over the Internet (“the cloud”), including servers, storage, databases, networking, software, analytics, and intelligence. Cloud Services.

There are three standard models to categorise different computing services delivered through the cloud.

1. Infrastructure as a Service (IaaS)
2. Platform as a Service (PaaS)
3. Software as a Service (SaaS)

1. Infrastructure as a Service (IaaS) – IaaS is a particular kind of cloud computing service that provides necessary computation, storage, and networking resources on demand for example different types of computer infrastructure, such as servers, virtual machines (VM), storage and backup facilities, network components, operating systems, or any other hardware or software, can be offered by IaaS providers.

2. Platform as a Service (PaaS) – a cloud-based service that enables users to install and run applications without worrying about their setup or underlying infrastructure. In other words, PaaS offers a platform or setting for creating, testing, and distributing software applications.

3. Software as a Service (SaaS) – SaaS offers on-demand access to application software; often, this service requires user licencing or subscription. We utilise SaaS from the cloud when using Google Doc, Microsoft Office 365, Drop Box, etc. to modify a document online.

4.11 Grid Computing: Grid computing refers to a network of computers from various administrative domains cooperating to complete a task. Grid computing enables simple completion of complicated tasks that may be intractable for a single computer machine.

Grid can be of two types:

1. **Data grid:** used to manage large and distributed data having required multi-user access
2. **CPU or Processor grid:** where processing is moved from one PC to another as needed or a large task is divided into subtasks and divided to various nodes for parallel processing.

4.12 Blockchains: The blockchain technology is based on the idea of a shared, decentralised database that is replicated on every computer. A block is a safeguarded section of data or a legitimate transaction. Only the block's owner has access to the block's private data, which is hidden behind the header of each block, which is visible to all other nodes. These blocks come together to form the blockchain.

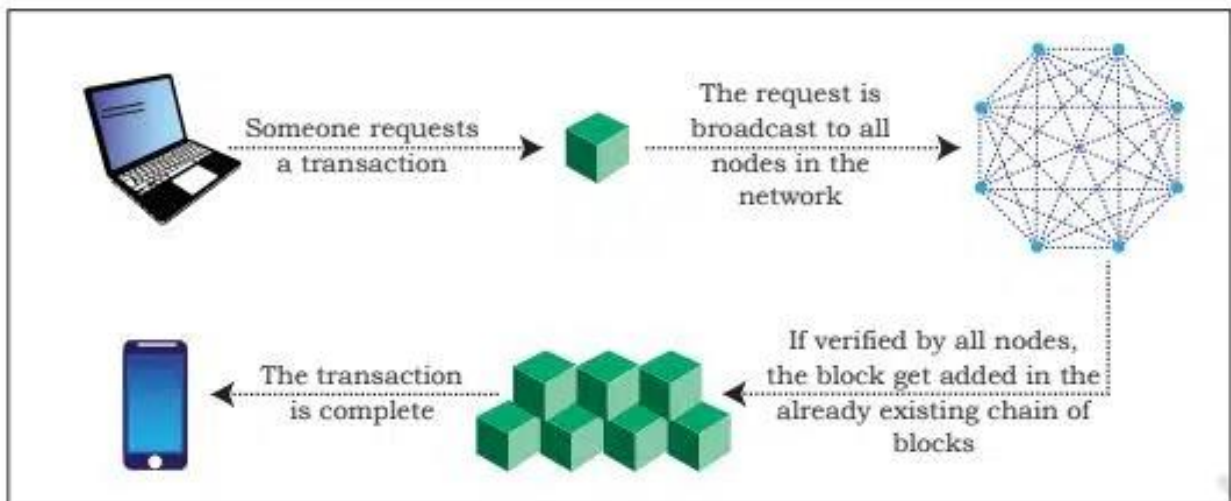


Image via NCERT

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION
CLASS: XI SESSION: 2022-23 (SET-1)
INFORMATION PRACTICES (CODE 065)

TIME: 3 HRS

M M: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	SECTION A	Marks
1	What was the name of the first computer designed by Charlse Babbage? A. Analytical Engine B. Difference Engine C. Colossus D. ENIAC	1
2	Which statement is correct? A. List is immutable && Tuple is mutable B. List is mutable && Tuple is immutable C. Both are Mutable. D. Both are Immutable	1
3	What is a database? A. Organized collection of information that cannot be accessed, updated, and managed B. Collection of data or information without organizing C. Organized collection of data or information that can be accessed, updated, and managed D. Organized collection of data that cannot be updated	1
4	_____ is a subsystem of Artificial Intelligence, wherein computers have the ability to learn from data using statistical techniques, without being explicitly programmed by a human being. A. Artificial Intelligence B. Machine Learning C. Data Science D. None of the above	1
5	What is the full form of DDL out of the following? A. Drive Dilution Language	1

	B. Data Deletion Language C. Data Definition Language D. Data Defragmentation Language	
6	Which statement does not show any error after execution? Given L=[1,2,3,4] A. print(L+L) B. print(L*L) C. print(L-L) D. All of the mentioned	1
7	Which of the followings is a type of Primary memory: - A. Memory Card B. Compact Disk C. ROM D. Pen Drive	1
8	SQL INSERT statement adds records to any single table in a relational database A. One B. One or More C. only two D. None of Above	1
9	Rows of a Relation are called? A. Attributes B. Tuples C. Degree D. Cardinality	1
10	_____ is designed to solve a specific problem or to do a specific task. A. Application Software B. System Software C. Utility Software D. User	1
11	Which is the full form of SQL out of the following? A. Standard Query language B. Standard Quantum Language C. Structured Query language D. Structured Quantum language	1
12	Which line of code correctly adds an item to the fruits dictionary with a key of 'Blackberry' and a value of 20? fruits = {'Apples':1, 'Bananas':4, 'Grapes':17, 'Oranges':14} A. fruits['Blackberry'] = 20 B. add fruits['Blackberry'] = 20 C. insert 'Blackberry':20 in fruits D. fruits[20] = 'Blackberry'	1
13	A * symbol in the SQL Select statement signifies A. All rows to be selected from a given table. B. All columns of the given table to be included in the query result. C. Complete Table to be displayed.	1

	D. None of the above	
14	<p>In MySQL, statements should be written in</p> <p>A. upper case only</p> <p>B. lower case only</p> <p>C. title case</p> <p>D. MySQL statements are not case sensitive</p>	1
15	<p>For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute..</p> <p>A. Relation</p> <p>B. Domain</p> <p>C. Tuple</p> <p>D. Degree</p>	1
16	<p>MySQL is software</p> <p>A. RDBMS</p> <p>B. DBMS</p> <p>C. Proprietary</p> <p>D. Spreadsheet</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions.</p> <p>Mark the correct choice as</p> <p>i. Both A and R are true and R is the correct explanation for A</p> <p>ii. Both A and R are true and R is not the correct explanation for A</p> <p>iii. A is True but R is False</p> <p>iv. A is false but R is True.</p>	
17	<p>A: Loops are used to repeat a group of statements under a condition.</p> <p>R: Two commonly used loops in python are for loop and while loop.</p>	1
18	<p>Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.</p> <p>A: In Machine Learning, computers have the ability to learn from data using statistical techniques.</p> <p>R: After successive training, ML Models are used to make predictions about new and unknown data.</p>	1
	SECTION B	
19	<p>Find out the error(s) in the following python code:</p> <pre>a,b=9,56 if(a<b) print('a is smaller than b') OR What will be the output of following program x=1234 while x%10: x=x//10 print(x)</pre>	2
20	Define DDL commands of SQL with examples.	2
21	Write down any four advantages of using computer	2
22	A list in python is Mutable or Immutable? Justify your answer with an	2

	example?	
23	<p>What is the SELECT command? Write down its basic syntax.</p> <p>OR</p> <p>Ms. Namita is trying to add a new record in a table named PERSON. she wrote following query but got an error: -</p> <p style="text-align: center;">INSERT RECORD INTO PERSON VALUE [101,"Sandeep", 9955882200]</p> <p>Write a correct query to add the above record?</p>	2
24	Classify the following operators as logical, relational or assignment operator > , = , ==, and	2
25	1. What will be units in bytes for following: 1KB, 1MB, 1GB, 1 TB	2
	SECTION C	
26	Differentiate between software System and Application software ? Give an example in each case.	3
27	Write a program to take user input and find number is odd or even	3
28	Write a python program to display the largest of 3 numbers using if..elif..else statement(s).	3
29	<p>Artificial Intelligence (AI) is a discipline that aims to create robots that are intelligent enough to do jobs that are typically performed by humans only. Identify aspects which are still beyond the capabilities of artificial intelligence</p> <p>OR</p> <p>A new initiative named PMSHREE is being implemented in various schools across India. The scheme is to make the IOT enabled, smart and model schools. Please suggest three IoT enabled solutions to make the school smart.</p>	3
30	<p>Write down name of commands for followings: -</p> <p>i) Making a new database in MySql</p> <p>ii) Obtaining a list of existing databases</p> <p>iii) Opening a database</p> <p>OR</p> <p>What do you understand by the term database? Write any four advantages of using a database over the traditional file system.</p>	3
	SECTION D	
31	<p>Write a python program to create a dictionary where the keys are numbers (between 1 to 10) and the values are sum of the first keyth (1 to key) natural numbers.</p> <p>OR</p> <p>a) Define a Dictionary with an example in respect of Python?</p> <p>b) Write down any two characteristics of a python Dictionary?</p> <p>c) What is the purpose of the dict() method?</p>	5
32	<p>Write a SQL statement to create a table jobhistory in job database with following structure</p> <pre> +-----+-----+-----+-----+-----+ Field Type Null Key Default Extra +-----+-----+-----+-----+-----+ JOB_ID varchar(10) NO </pre>	5

	<div><div> JOB_TITLE varchar(35) NO NULL </div><div> MIN_SALARY decimal(6,0) YES NULL </div><div> MAX_SALARY decimal(6,0) YES NULL </div><div>+-----+-----+-----+-----+-----+-----+</div><div>Write Sql statement for following</div><div>a. Create a database job</div><div>b. Before creation of table open the newly created database job</div><div>c. create a table jobhistory with above structure</div><div>d. Which field can be created as Primary key</div><div>e. What will be the degree of table/relation jobhistory</div></div> <td></td>																																																													
33	<div>Answer the question (a) to (e) based on the table, PLAYER given below:</div> <div>Player</div> <table><tr><th>PID</th><th>PName</th><th>Gender</th><th>Game</th><th>Rank</th></tr><tr><td>P01</td><td>Sunny Paji</td><td>Male</td><td>Cricket</td><td>5</td></tr><tr><td>P02</td><td>Marry Kaun</td><td>Female</td><td>Boxing</td><td>3</td></tr><tr><td>P03</td><td>Saniya Mircha</td><td>Female</td><td>Tennis</td><td>5</td></tr><tr><td>P04</td><td>Sachin Reelkar</td><td>Male</td><td>Cricket</td><td>1</td></tr><tr><td>P05</td><td>Vijender Maohawk</td><td>Male</td><td>Boxing</td><td>Null</td></tr></table> <div>a) Display details of all Male players.</div> <div>b) Display player name and game whose rank is 1 to 3</div> <div>c) Show PID,PName and Rank whose game is either Boxing or Cricket.</div> <div>d) Add a new record in the table ("P06", "Abhinav","Male","Shooting",1)</div> <div>e) What will be the output of the following Query:</div> <div>SELECT Pname as Player_Name, Game</div> <div>FROM Player</div> <div>WHERE Game='Tennis';</div> <div>OR</div> <div>Consider the table -TICKET given below. Write the output for (i) to (iv) and answer the question (v)</div> <table><tr><th>TKTNO</th><th>PNAME</th><th>SOURCE</th><th>DESTINATIO N</th><th>FARE</th></tr><tr><td>1725</td><td>Amrit Jain</td><td>Jaipur</td><td>Kota</td><td>340</td></tr><tr><td>1425</td><td>Vimal Kumar</td><td>Jaipur</td><td>Mumbai</td><td>570</td></tr><tr><td>1121</td><td>Vickey Kaushal</td><td>Kota</td><td>Mumbai</td><td>660</td></tr><tr><td>1252</td><td>Vikek Shah</td><td>Karauli</td><td>Jaipur</td><td>190</td></tr><tr><td>1251</td><td>Urmila Pandey</td><td>Banswada</td><td>Udhampur</td><td>850</td></tr></table> <div>i. Select * from TICKET where TKTNO=1425;</div> <div>ii. Select PNAME, SOURCE, DESTINATION from TICKET where price between 300 and 660);</div> <div>iii. Select * from TICKET where SOURCE = 'AJMER';</div> <div>iv. Select PNAME from TICKET where PNAME like 'vi%';</div> <div>v. What is the degree of the above table?</div>	PID	PName	Gender	Game	Rank	P01	Sunny Paji	Male	Cricket	5	P02	Marry Kaun	Female	Boxing	3	P03	Saniya Mircha	Female	Tennis	5	P04	Sachin Reelkar	Male	Cricket	1	P05	Vijender Maohawk	Male	Boxing	Null	TKTNO	PNAME	SOURCE	DESTINATIO N	FARE	1725	Amrit Jain	Jaipur	Kota	340	1425	Vimal Kumar	Jaipur	Mumbai	570	1121	Vickey Kaushal	Kota	Mumbai	660	1252	Vikek Shah	Karauli	Jaipur	190	1251	Urmila Pandey	Banswada	Udhampur	850	5
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	SECTION E																									
34	<p>Mr. Tushar Kapoor, is a games teacher. He needs to prepare a list of students who are selected for regional level sports meets. later he needs to perform some actions on the list so prepared. He is of the view that the task can be accomplished easily using python lists data structure. Help him to perform the following task using lists in Python programming language.</p> <ul style="list-style-type: none">a. create a list named 'Regional' with the following values :- 'Amrit', 'Kanika', 'Salman', 'Vivek', 'Anita', 'Vipin'b. print the number of students in the ist.c. remove the student at the third index.d. Display last three elements in the list	4																								
35	<p>Mr Vanaram has opened a coaching institute in his home city Yalahanka. He has a bit of experience with database design but forgot a few things here and there. He has called his best buddy Ramanatham for help. Let's assume you are Ramnatham, help out your friend to set up and test the database thus created.</p> <p>Course</p> <table><tr><th>C_ID</th><th>F_ID</th><th>Cname</th><th>Fees</th></tr><tr><td>C21</td><td>102</td><td>Grid Computing</td><td>40000</td></tr><tr><td>C22</td><td>106</td><td>System Design</td><td>16000</td></tr><tr><td>C23</td><td>104</td><td>Network Security</td><td>80000</td></tr><tr><td>C24</td><td>106</td><td>Human Biology</td><td>150000</td></tr><tr><td>C25</td><td>102</td><td>Computer Network</td><td>20000</td></tr></table> <ul style="list-style-type: none">a) Help Vanaram by filling out the missing bits in the table creation process: CREATE ____ (i) ____ Course(C_ID CHAR(3), F_ID ____ (ii) ____, Cname VARCHAR (20), Fees INT);b) Vanaram: Hey Rama, would you please write the INSERT query for the first row? I'll follow and write the subsequent one myself.c) Vanaram: I want to see the data of the table but the query: SELECT ALL FROM TABLE Course; is not working. Can you fix it?	C_ID	F_ID	Cname	Fees	C21	102	Grid Computing	40000	C22	106	System Design	16000	C23	104	Network Security	80000	C24	106	Human Biology	150000	C25	102	Computer Network	20000	4
C_ID	F_ID	Cname	Fees																							
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KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION
QUESTION PAPER (SET - 02)
CLASS: XI SESSION: 2022-23
INFORMATION PRACTICES (CODE 065)

TIME: 3 HRS

M M: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q. N.	SECTION A	Marks
1	Which of the following groups are only input devices? A. Mouse, Keyboard, Monitor, Joystick B. Mouse, Keyboard, Printer, Light-Pen C. Mouse, Keyboard, Scanner, Joystick, Light-Pen D. Mouse, Keyboard, Trackball, Speaker, Microphone	1
2	Which of the following characters is used to give single-line comments in Python? A. // B. # C. ! D. /*	1
3	What is the full form of DBMS? A. Data of Binary Management System B. Database Management System C. Database Management Service D. Data Backup Management System	1
4	_____ deals with the interaction between humans and computers using human spoken languages, such as Hindi, English, etc. A. Data Science B. Neuroscience C. Natural Language Processing D. All of the above	1
5	Which one is the command to add a new column in an already existing relation in SQL? A. Add B. Alter C. Insert	1

	D. Change	
6	Which of the following commands will sort list1 in descending order? A. list1.sort(reverse=0) B. list1.sort() C. list1.sort(reverse='True') D. list1.sort(reverse=1)	1
7	"..... is memory." Select the most appropriate to fill in the blanks of the given statement. A. RAM, Non-volatile B. RAM, Volatile C. RAM, Secondary D. ROM, Volatile	1
8	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 Columns(Col1, Col2,Col3) VALUE (Val1, Val2,Val3) Into ; D. None of the above.	1
9	Columns of a Relation are called? A. Attributes B. Tuples C. Degree D. Cardinality	1
10	OSS stands for _____. A. Open System Service B. Open Source Software C. Open System Software D. Open Synchronized Software	1
11	A column is declared with char (10) size, and assigned 4 characters only. How many total characters will this column occupy? A. 4 B. 5 C. 10 D. 11	1
12	Suppose my_dict = {"Name":"Aakash", "Age":35, "Gender":"Male"}. To delete the entry for "Age", what command do we use? A. my_dict.delete("Age":35) B. my_dict.delete("Age") C. del my_dict["Age"] D. del my_dict["Age":35]	1
13	Which of the following clauses is used in the SQL select statement to filter rows to be included in the query result. A. Order By B. Group by C. Having D. Where	1
14	Which of the following is not a feature of MySQL? A. Cross Platform	1

	B. User Friendly C. Open source D. License fee s to be paid for use	
15	In the relational model, the number of attributes and number of tuples of a relation are termed as _____ and _____ respectively. A. cardinality, domain B. domain, degree C. degree, cardinality D. cardinality, degree	1
16	Which is/are the sublanguage(s) of SQL: - A. DML B. DDL C. DCL D. All of the above	1
	Q17 and 18 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.	
17	A: if..elif.. else is a form of if statement used when we have a large number of conditions connected to each other. R: In an if..elif..else statement one condition is evaluated, if it is found incorrect, another set of conditions is tested and the process continues. If none of the given conditions is found to be true, the statements associated with the else part are executed.	1
18	A: Virtual Reality (VR) is athree-dimensional, computer-generated situation that simulates the real world. R: It adds components of the digital world to the physical world, along with the associated tactile and other sensory requirements, thereby making the reality interactive and digitally manipulable.	1
	SECTION B	
19	Find out the error(s) in the following python code: <pre>print(area of circle calculator) r = 7 area = pi * r ** 2 OR What will be the output of following program x=10 for i in range(x): if x==5: break print("H") print(x)</pre>	2
20	An organization named Gaurav wants to put all the data in the form of records. The records are stored in a table and tables are stored in a database. Which DDL command is used to create a database name Gaurav? Write down the SQL Statement to create	2

	the database.	
21	Write down the full form of following i/o devices: OCR, MICR, OMR, VR	2
22	Find output of the following code fragment L = [10, 20, 30, 40, 50] for idx in range(0, len(L), 2): print(L[idx], end="#")	2
23	Consider the table Student {S_Id, S_Name, S_Age, S_Class, S_Fee}. Write the command to display S_Id, S_Name and S_Class of the students who are studying in class 5, 9, 10 and 12. OR What is the purpose of the INSERT command? Explain briefly with an example?	2
24	Predict the output of the following a. 100 + 34//11%3 b. True and True or False and not True	2
25	Arrange the following memory units in decreasing order: Exabyte, Tera byte, Peta byte, Giga byte	2
	SECTION C	
26	Differentiate between generic and special purpose software. Give an example in each case.	3
27	Write a program to check if the number is positive or negative or zero and display an appropriate message. (input: num=3.4, 0 and -4.5)	3
28	Write a python program to check whether the given character is a vowel or not.	3
29	A news channel broadcasts information on a wide range of topics. The news channel permits people to submit breaking news, which is subject to verification by the channel's reporters. It may be difficult to distinguish between real news and fake news, which can lead to confusion among readers and threaten a news organization's reputation. Which domain is used to detect fake news so that the audience has a high level of trust in the news channel? Write in brief about this domain. OR A company interested in cloud computing is looking for a provider who offers a set of basic services such as virtual server provisioning and on-demand storage that can be combined into a platform for deploying and running customized applications. What type of cloud computing model fits these requirements? a) Platform as a Service b) Software as a Service c) Infrastructure as a Service Also, Explain your choice.	3
30	Mr. Khan wants to view the structure of an existing table - STUDENT in a database SCHOOL. So he started Mysql, write down the sequence of the commands he should use as he is not sure about the name of the table also. OR Mitali is confused with the terms Domain, Tuple and Attribute. Help her to understand the terms with a suitable example of each.	3

	SECTION D																																														
31	Write a python program to count the frequency of each character using a dictionary of a string (string should be entered by the user). OR Explain the use of get() and pop() methods in respect of Python Dictionary with examples.	5																																													
32	Write a SQL statement to create a table customer in shop database with following structure +-----+-----+-----+-----+-----+ Field Type Null Key Default Extra +-----+-----+-----+-----+-----+ ID int(11) NO NAME varchar(20) NO AGE int(11) NO ADDRESS char(25) YES NULL +-----+-----+-----+-----+-----+ Write SQL statements for following a. Create a database shop b. Before creation of table open the newly created database shop c. Create a table customer with above structure d. Which field can be created as Primary key e. What will be the degree of table/relation customer	5																																													
33	Answer the question (a) to (e) based on the table, Book given below: Book <table><tr><td>BNo</td><td>Title</td><td>Author</td><td>Date_Purchased</td><td>Price</td></tr><tr><td>B01</td><td>IP CLASS XI</td><td>A ARORA</td><td>2020-01-05</td><td>350</td></tr><tr><td>B02</td><td>COMP SCI</td><td>P ARORA</td><td>2020-10-15</td><td>250</td></tr><tr><td>B03</td><td>CS CLASS XII</td><td>NCERT</td><td>2021-06-30</td><td>NULL</td></tr><tr><td>B04</td><td>IP With PYTHON</td><td>NCERT</td><td>2021-12-01</td><td>400</td></tr></table> a. Display details of the books whose price not mentioned b. Display title and date of purchase of the books having “IP” in their title. c. Display all the details of books by NCERT. d. Add a new tuple (B05, Anaconda,Nickey M, 2022-01-01,550). e. What will be the output of the following Query: SELECT Author, Title FROM Book WHERE Price BETWEEN 100 AND 250; OR Consider the table -PLAYER given below. Write the output for (i) to (iv) and write sql query for question (v) <table><tr><td>PID</td><td>PName</td><td>Gender</td><td>Game</td><td>Rank</td></tr><tr><td>P01</td><td>Sunny Paji</td><td>Male</td><td>Cricket</td><td>5</td></tr><tr><td>P02</td><td>Marry Kaun</td><td>Female</td><td>Boxing</td><td>3</td></tr><tr><td>P03</td><td>Saniya Mircha</td><td>Female</td><td>Tennis</td><td>5</td></tr></table>	BNo	Title	Author	Date_Purchased	Price	B01	IP CLASS XI	A ARORA	2020-01-05	350	B02	COMP SCI	P ARORA	2020-10-15	250	B03	CS CLASS XII	NCERT	2021-06-30	NULL	B04	IP With PYTHON	NCERT	2021-12-01	400	PID	PName	Gender	Game	Rank	P01	Sunny Paji	Male	Cricket	5	P02	Marry Kaun	Female	Boxing	3	P03	Saniya Mircha	Female	Tennis	5	5
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P04	Sachin Reelkar	Male	Cricket	1																						
P05	Vijender Maohawk	Male	Boxing	Null																						
	SECTION E																									
34	<p>Miss Anita Bhati is a mathematics teacher. She often needs to evaluate her students and analyze her scores to plan her teaching pedagogies. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a list named 'scores' having following values: 10, 7, 9, 11, 12, 15, 19, 20, 18, 4 b. Add the following values in the list using a single command. 15, 20, 45 c. Print the name of the value at index number 3. d. Display the minimum sore from the list.</p>	4																								
35	<p>Ashwarekha is an enthusiastic science student. She wants to know about the professional life of her favorite scientists and mathematicians. She decided to create a table named Professor in the digital database named MyHerors. She asked her friend Varahi to come up with a few questions, which can be answered using SQL queries.</p> <p>Professor</p> <table><tr><td>P_ID</td><td>PName</td><td>Department</td><td>Salary</td></tr><tr><td>1729</td><td>Ramanujam</td><td>MATHEMATICS</td><td>500</td></tr><tr><td>1803</td><td>Heigenberg</td><td>PHYSICS</td><td>150000</td></tr><tr><td>1704</td><td>Eular</td><td>MATHEMATICS</td><td>6000</td></tr><tr><td>1610</td><td>Neils B</td><td>CHEMISTRY</td><td>4000</td></tr><tr><td>1935</td><td>Allen T</td><td>MATHEMATICS</td><td>101010</td></tr></table> <p>a. Varahi: Can you tell me the name of Professors of Mathematics with a salary less than 10000? (write down the SQL query) b. Varahi: In your table the monthly salary is stored. Can you display the name and Annual Salary of these professors? (Write the query and use the alias "Annual Income" for the resultant column).</p>	P_ID	PName	Department	Salary	1729	Ramanujam	MATHEMATICS	500	1803	Heigenberg	PHYSICS	150000	1704	Eular	MATHEMATICS	6000	1610	Neils B	CHEMISTRY	4000	1935	Allen T	MATHEMATICS	101010	4
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KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION
QUESTION PAPER (SET-3)
CLASS: XI SESSION: 2022-23
INFORMATION PRACTICES (CODE 065)

TIME: 3 HRS

M M: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	SECTION A	Marks
1	Which of the following is the correct sequence? A. Gigabyte > Terabyte > Megabyte > Kilobyte B. Kilobyte > Megabyte > Byte > Terabyte C. Megabyte > Kilobyte > Terabyte > Gigabyte D. Terabyte > Gigabyte > Byte > Nibble	1
2	Which one of the following is False regarding data types in Python? A. In python, explicit data type conversion is possible B. Mutable data types are those that can be changed. C. Immutable data types are those that cannot be changed. D. None of the above	1
3	What is DBMS? A. DBMS is a collection of queries B. DBMS is a high-level language C. DBMS is a programming language D. DBMS stores, modifies and retrieves data	1
4	Virtual Reality has been used in the field of _____. A. Military training B. Psychology C. Medical procedures D. All of the above	1
5	What one of the following is not a DDL Command? A. Delete B. Alter C. Drop D. Create	1

6	<p>Given a string: s='String', Which statement converts string 's' into List 'L'.</p> <p>A. L=s B. L=list(s) C. L=s[:] D. all of the mentioned</p>	1
7	<p>Process of accessing or fetching data from storage device as per requirement is known as :-</p> <p>A. Data Retrieval B. Data Capturing C. Data Recovery D. Data Backup</p>	1
8	<p>How is Column wise insertion of data different from simply passing values to a table?</p> <p>A. Column wise data leads in populating data on an optional basis i.e. whether the user wanted to insert data in a column or not. B. We can't pass value to a table without mentioning column names in an insert statement. C. Passing values to a table without column names is always safe. D. None of the above.</p>	1
9	<p>Total number of Columns of a Relation is called?</p> <p>A. Attribute B. Tuple C. Degree D. Cardinality</p>	1
10	<p>Which of the following is not an operating system?</p> <p>a) Windows b) Linux c) Oracle d) Mac OS</p>	1
11	<p>MySQL is-</p> <p>A. Proprietary Software B. Free and Open Source Software C. Shareware D. None</p>	1
12	<p>Suppose d_emp = {"Name": "Roshni", "Age": 27, "Gender": "Female"}. To obtain the number of entries in the dictionary, which command do we use?</p> <p>A. d_emp.size() B. len(d_emp) C. size(d_emp) D. d_emp.len()</p>	1
13	<p>Which of the following SQL statement is invalid :</p> <p>A. Select * from emp where empid= 121; B. Select * from emp; C. Select * where empid=121 from emp; D. Select ename, empid from emp;</p>	1
14	<p>Which of the following is not a DBMS ?</p> <p>A. MySQL B. Ms-Excel</p>	1

	C. Oracle D. DB/2	
15	An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation. A. Candidate B. Alternate C. Super D. Primary	1
16	Choose odd one out: - A. SELECT B. UPDATE C. DROP TABLE D. DELETE	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.	
17	A: for loop is a compact loop. R: for loop is a compact loop as it is much faster than the while loop.	1
18	A: The data in Big Data is not only voluminous, but also unstructured like posts, instant messages, chats, photographs, tweets, blog articles, news items, comments, audio/video chats, etc. R: Such data can be analyzed using traditional data analysis tools like DBMS, spreadsheets etc.	1
	SECTION B	
19	Find out the error(s) in the following python code: print('even odd checker') n=input('enter the number') if(n%2==0): print('even') else: print('odd') OR What will be the output of following program a = True b = False c = False if a or b and c: print ("PYTHON PROGRAMMING") else: print ("python programming")	2
20	Explain CREATE command also Write down the syntax to create a table.	2
21	Write down the use of following: Printer,Plotter,Projector,Monitor	2

22	Find output of the following code fragment Lst=[10,20,30,40] Lst[1]=50 Lst[-1]=100 print(L) print(Lst[1:3])	2
23	Consider the table Student {S_Id, S_Name, S_Age, S_Class, S_Fee}. Write the command to display S_Id, S_Name and S_Age of the students whose Age is in the range 10 to 16 (both inclusive). OR A table EMP has attributes EmpID, First_Name, Last_Name, Salary. Write down command to add following data in the EMP table i) 1111, NAVNEET, SHARMA, 60000 ii) 2222, NARESH, 50000	2
24	Assume a=100, b = 20 , find the value of each of the following :- a. $a//3+b^2$ b. $a+b > a+20$	2
25	A gigabyte is equal to A. 1024 bytes B.1024 megabytes C. Million megabytes D. Thousand kilobytes	2
	SECTION C	
26	Classify as special purpose and generic software a. Google Chrome: b. Windows 8 c. Word-Processing Software d. Ms-Excel e. Notes f. Avast Antivirus	3
27	What will be the output of the following python statements? a,b,c = 10,40,20 a,c,b = b+10, a+20, c-10 print(a,b,c) print(a+b//c**2)	3
28	Write a python program to display the sum of first n natural numbers (Note: Value of n should be entered by the user).	3
29	Aman, an industrialist, wants to start a plant where production of Cars is to be done.He wants his plant to be in this manner that less man power is used and cars are produced through automated system.What kind of emerging trend will be applicable here and how? OR An incubator cell present in a university, provides the students the opportunity to create the prototype of products/services that they seek to implement. It provides them necessary hardware and software resources as well as access to the investors through various tech fares. A group of students in such an incubator cell are trying to create an emergency alert system that processes the data locally in real time instead of keeping and	3

	processing it in the cloud. What kind of technology should they use to make use of each smart device as a node, for sharing the data and processing. List down its one advantage and one disadvantage.																										
30	i) Write down the name of the SQL command by which one can modify the structure of a table? A table PRODUCT has attributes PID, PNAME, PRICE, DESCRIPTION. ii) Write a command to add a new attribute QUANTITY of Integer type in this table? OR What are the constraints? Explain any two constraints.	3																									
	SECTION D																										
31	Write a python program to create a dictionary called fruits with below data: "Banana":60, "Apple":80, "Orange":55, "Pineapple":80 Using loop, print out all the key along with its price and in the following format: Fruit = Apple and Price = 2 Also print the total amount one would need to purchase all of your fruits. OR What is the purpose of pop(), popitem(), clear() methods used with dictionaries in python?	5																									
32	Perform following operation using SQL commands 1. Create a database employee 2. Open this database 3. create tables empmaster with schema<empcode,name,address,salary> 4. Suppose database administrator has inserted 12 records in empmaster then what will be the cardinality and degree of empmaster	5																									
33	Write the queries (a) to (e) based on the table given below: Investor: <table><tr><th>ID</th><th>Name</th><th>Age</th><th>Village</th><th>Income</th></tr><tr><td>1</td><td>Rangsa Marak</td><td>32</td><td>Kala Bakra</td><td>85000</td></tr><tr><td>2</td><td>Modi Sarkar</td><td>25</td><td>Badami</td><td>150000</td></tr><tr><td>3</td><td>M.G. Cholera</td><td>27</td><td>Lotte Golla Halli</td><td>65000</td></tr><tr><td>4</td><td>Jamesbond Singh</td><td>33</td><td>Nagina</td><td>85000</td></tr></table> a) Display Name of Investor from Village Badami and Nagia b) Show Name and Age of Investor, whose Age is either 32 or 33. c) Display unique Incomes of the Investors d) Add a new record Like Ika of age 23 from Village Clutter Buck Ganj. e) What will be the output of the following Query: SELECT Name,Village FROM Investor WHERE Name LIKE='%M%k'; OR	ID	Name	Age	Village	Income	1	Rangsa Marak	32	Kala Bakra	85000	2	Modi Sarkar	25	Badami	150000	3	M.G. Cholera	27	Lotte Golla Halli	65000	4	Jamesbond Singh	33	Nagina	85000	5
ID	Name	Age	Village	Income																							
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3	M.G. Cholera	27	Lotte Golla Halli	65000																							
4	Jamesbond Singh	33	Nagina	85000																							

	<p>Consider the table - CUSTOMER given below. Write the output for (i) to (iv) and write sql query for question (v)</p> <table><tr><th>CID</th><th>CNAME</th><th>LIMIT</th><th>DOA</th><th>BALANCE</th></tr><tr><td>1501</td><td>Sunder Garg</td><td>80000</td><td>2021-12-12</td><td>63524</td></tr><tr><td>1502</td><td>Kapil Jain</td><td>75000</td><td>2022-01-17</td><td>45284</td></tr><tr><td>1503</td><td>Anita Bhati</td><td>75200</td><td>2021-10-17</td><td>42517</td></tr><tr><td>1509</td><td>Vipul Patel</td><td>83500</td><td>2019-15-22</td><td>12482</td></tr><tr><td>1624</td><td>Seema Pratap</td><td>95000</td><td>2019-07-12</td><td>0</td></tr></table> <p>i. Select * from CUSTOMER where CID=1502; ii. Select CNAME, LIMIT, DOA from CUSTOMER where BALANCE > 45000; iii. Select * from CUSTOMER where LIMIT>75000 and BALANCE<15000; iv. Select CNAME from CUSTOMER where DOA like '2019%'; v. Two more rows are added to the above table. What will be the new cardinality of the table?</p>	CID	CNAME	LIMIT	DOA	BALANCE	1501	Sunder Garg	80000	2021-12-12	63524	1502	Kapil Jain	75000	2022-01-17	45284	1503	Anita Bhati	75200	2021-10-17	42517	1509	Vipul Patel	83500	2019-15-22	12482	1624	Seema Pratap	95000	2019-07-12	0	
CID	CNAME	LIMIT	DOA	BALANCE																												
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1624	Seema Pratap	95000	2019-07-12	0																												
	SECTION E																															
34	<p>Ms. Preeti Sexena is a Class Teacher of VIII. She often needs to maintain the health records of her students and analyze her scores to plan her pedagogies. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a List named - height with the following values : 4 b. sort the elements of the list in ascending order c. Find how many times the value 4.4 appeared in the list. d. Display the maximum value from the list.</p>	4																														
35	<p>Huma is a sports fan. She wants to make a career as a sports journalist. She was given a job as a sports columnist for her college magazine. She decided to present a featurette about the Arjuna Award and the award receivers in the year 2022. She consulted her friend Semim for preparation of the database. Here's the conversation between them.</p> <p>Huma: Hello Semim, would you please help me out with this project? Semim: Sure. I would love to be a part of it. What would I get in return? Huma: Garma Garam Jalebis made by Amma. Semim: Wow, you sure know how to treat your bestie. Cheppa (tell me), what are your queries? Huma: Hmmm.. first of all we need to collect the data from https://pib.gov.in/, an official website of the Ministry of Youth Affairs and Sports. We will then create a database and various tables to perform the analysis. Semim: Okay, let's do it. (They successfully obtained the data from the website and created the database and tables.) Huma: Thanks a ton but wait can you tell me how do I access this data when I am all by myself?</p> <p>a) How do I use the database named Sports? b) How to find the list of various tables in the database? c) I want to know the details of Arjuna Awardee players for the year 2022. What query</p>	4																														

	<p>should I use in the table Arjuna_Puraskar_22?</p> <p>d) Can you tell me the syntax of Insert Query?</p> <p>Write down the answers for the above queries/questions.</p>	
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KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**CLASS: XI SESSION: 2022-23 (SET-4)****INFORMATION PRACTICES (CODE 065)****TIME: 3 HRS****M M: 70****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	SECTION A	
1	Which of the following processes is used to reinstall/restore data from a copy when the original data has been lost? A. Update B. Backup C. Recovery D. None of these	1
2	What will be the value of the following Python expression? $4 + 3 \% 5$ A. 7 B. 2 C. 4 D. 1	1
3	Which of the following is not an example of DBMS? A. MySQL B. Microsoft Access C. IBM DB2 D. Google	1
4	Network of interconnected items with integrated sensors that can gather and transmit data in real time is known as the _____. A. Internet of Things B. Big Data C. Model D. None of the above	1
5	What is the DDL command out of the following to remove a table? A. Remove	1

	B. Delete C. Drop D. Pop	
6	What will be the output of the following code segment? <pre>l=['A', 'a', 'Aa', 'aA'] print(max(l))</pre> A. 'A' B. 'a' C. 'Aa' D. 'aA'	1
7	DVD stands for : - A. Digital Versatile Drive B. Digital Video Drive C. Digital Volume Drive D. Digital Versatile Disk	1
8	How can you insert a new row into the "STORE" table A. INSERT ROW (1," RAM SINGH") INTO STORE; B. INSERT VALUES (1," RAM SINGH") INTO STORE; C. INSERT INTO (1," RAM SINGH") STORE; D. INSERT INTO STORE VALUES (1," RAM SINGH")	1
9	Total number of Rows of a Relation is called? A. Attribute B. Tuple C. Degree D. Cardinality	1
10	The _____ acts as an interface between the device and the operating system. A. Device Conductor B. Device Driver C. Hardware Drive D. Hardware Conductor	1
11	MySQL is Case Sensitive- A. Yes B. No C. Keywords/Commands are Case Sensitive D. All of Above	1
12	What will be the output of the following Python code snippet? <pre>fruits = {'Apples':1, 'Bananas':4, 'Grapes':17, 'Oranges':14} print(list(fruits.keys()))</pre> A. (1, 4, 17, 14) B. ('Apples', 'Bananas', 'Grapes', 'Oranges') C. [1, 4, 17, 14] D. ['Apples', 'Bananas', 'Grapes', 'Oranges']	1
13	Identify the odd one out A. Select B. Desc C. From D. Where	1

14	<p>A _____ is a collection of attributes alligned vertically in a table.</p> <p>A. Column B. Row C. Cell D. Data</p>	1
15	<p>_____ is a set of one or more attributes taken collectively to uniquely identify a record.</p> <p>A. Primary Key B. Foreign key C. Super key D. Candidate key</p>	1
16	<p>Mr. Rajan wants to add a new attribute in an existing table in MySql, which command he should use : -</p> <p>A. DESCRIBE B. ALTER TABLE C. DELETE D. INSERT ATTRIBUTE</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>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.</p>	
17	<p>A: When we place a loop inside another loop it is called a nested loop. R: Programming language supports the concept of nesting. for example if we place an if statement inside another if statement statement, it is called a nested if statement.</p>	1
18	<p>A: Web of Things (WoT) allows the user to browse the web using anything in the physical world like a toaster, an oven or a fan.No need of a phone or a PC. R: The 'Internet of Things' is a network of devices that have embedded hardware and software to communicate (connect and exchange data) with other devices on the same network.</p>	1
	SECTION B	
19	<p>Find out the error(s) in the following python code:</p> <pre>if(4>9): print('4 is greater than 9') else if(9>4): print('4 is smaller than 9') else(4==9): print('4 is equal to 9')</pre> <p>OR</p> <p>What will be the output of following program</p> <pre>num = 5 sum = 0 while num> 0: sum += num num -= 2 print(sum)</pre>	2

20	Consider the following SQL statement. S1: CREATE TABLE employee (eno CHAR(3), name VARCHAR(20)); S2: INSERT INTO employee VALUES ('E01',RAHUL DRAVID'); From S1 and S2, which one is DDL and which one is DML?	2
21	Define computer,draw block diagram of computer.	2
22	Find output of the following code fragment Lst=[10,20,30] Lst.append(50) Lst.pop(0) print(Lst) Lst.pop() Lst.append(60) print(Lst)	2
23	Consider the table Employee {EId, EName, Age, Designation, Salary, Department}. Write the command to display EId, EName, Designation and Department of the employees whose name start with A and department is IT. OR State True or False in reference with INSERT INTO command of SQL? i) INSERT is not a part of DDL? ii) While adding tuples using the INSERT command, one must specify values for all the attributes of the table.	2
24	Give two examples each of Logical and Relational Operators in Python.	2
25	Rearrange the following units in increasing order: MB bit TB byte KB	2
SECTION C		
26	Classify the following software as System software and Application software a. Adobe PhotoShop b. Windows 10 c. Disk Defragmenter d. Ms-Word e. Google Chrome f. Avast Antivirus	3
27	Evaluate (to true or false)each of the following expression: 14<=14 14<14 -14 > -15 -15 >=15	3
28	Write a python program to print the factorial of a number (Note: number should be entered by the user).	3
29	The Air LMN Airlines Group want to train pilot. The trainees can take the headset	3

	<p>home and train for as long as they need. This includes them familiarizing the aircraft and 360-degree walkarounds.What kind of emerging trend is useful here</p> <p>OR</p> <p>CBSE has started to provide the digital copy of the marksheets online. Which technology can be used to provide the decentralized data sharing architecture? One in which safety and security of the transactions are ensured because all the members in the network keep a copy of the file and so it is not possible for a single member of the network to make changes or alter data. Can the same tech be applied in other areas? (If yes, Write the names of two such areas)</p>																									
30	<p>A table PRODUCT has attributes PID, PNAME, PRICE, DESCRIPTION. Write commands for followings: -</p> <p>i) Make the PID attribute as the Primary key of this table.</p> <p>ii) Change the data type of PRICE column to FLOAT(7,2)</p> <p>iii) Remove the attribute DESCRIPTION</p> <p>OR</p> <p>Explain the concept of Primary Key, Candidate Key and Alternate Key.</p>	3																								
	SECTION D																									
31	<p>Write a python program to create a dictionary of students to store the record of n students with marks obtained in 5 subjects for each student. Print the name and average marks in alphabetical order.</p> <p>OR</p> <p>Explain the use of following methods: -</p> <p>a) keys()</p> <p>b) values()</p>	5																								
32	<p>Perform following operation using SQL commands</p> <p>1. Create a database company</p> <p>2. Open this database</p> <p>3. create tables product with schema<productid,name,price></p> <p>Suppose database administrator has inserted 33 records in product table then removed 4 records from it.what will be the cardinality and degree of product.</p>	5																								
33	<p>Write the queries (a) to (e) based on the table given below:</p> <p>Table: Professor</p> <table><tr><td>P_ID</td><td>PName</td><td>Department</td><td>Tinkha</td></tr><tr><td>1729</td><td>Ramanujam</td><td>MATHEMATICS</td><td>500</td></tr><tr><td>1803</td><td>Heigenberg</td><td>PHYSICS</td><td>150000</td></tr><tr><td>1704</td><td>Eular</td><td>MATHEMATICS</td><td>6000</td></tr><tr><td>1610</td><td>Neils B</td><td>CHEMISTRY</td><td>4000</td></tr><tr><td>1935</td><td>Allen T</td><td>MATHEMATICS</td><td>101010</td></tr></table> <p>a) Display details of all Professors From the Mathematics Department.</p> <p>b) Display the names of different departments without repetition.</p> <p>c) Show P_ID and Tinkha whose department is not chemistry.</p>	P_ID	PName	Department	Tinkha	1729	Ramanujam	MATHEMATICS	500	1803	Heigenberg	PHYSICS	150000	1704	Eular	MATHEMATICS	6000	1610	Neils B	CHEMISTRY	4000	1935	Allen T	MATHEMATICS	101010	5
P_ID	PName	Department	Tinkha																							
1729	Ramanujam	MATHEMATICS	500																							
1803	Heigenberg	PHYSICS	150000																							
1704	Eular	MATHEMATICS	6000																							
1610	Neils B	CHEMISTRY	4000																							
1935	Allen T	MATHEMATICS	101010																							

	<p>d) Add a new Professor with Id: 1995,Name: H. C. Verma, Tinkha:19999</p> <p>e) What will be the output of the following Query:</p> <p>SELECT P_ID as Joining_Year, PName</p> <p>FROM Professor</p> <p>WHERE Tinkha<>6000 AND Department='Physics';</p> <p>OR</p> <p>Consider the table - TRANSACTION given below. Write the output for (i) to (iv) and write sql query for question (v)</p> <table><tr><th>TNO</th><th>ACNO</th><th>TTYPE</th><th>DOT</th><th>AMOUNT</th></tr><tr><td>143</td><td>12513</td><td>Deposit</td><td>2021-12-12</td><td>15000</td></tr><tr><td>149</td><td>12545</td><td>Withdraw</td><td>2022-01-17</td><td>12514</td></tr><tr><td>145</td><td>12548</td><td>DD</td><td>2021-10-17</td><td>12514</td></tr><tr><td>153</td><td>14587</td><td>Withdraw</td><td>2019-15-22</td><td>12545</td></tr><tr><td>142</td><td>12546</td><td>Deposit</td><td>2019-07-12</td><td>25245</td></tr></table> <p>i. Select * from TRANSACTION where TNO=142';</p> <p>ii. Select ACNO, TTYPE, DOT from TRANSACTION where rTTYPE in ('DD','Withdraw');</p> <p>iii. Select * from TRANSACTION where AMOUNT <= 1500 and AMOUNT >= 5000;</p> <p>iv. Select distinct TTYPE from TRANSACTION;</p> <p>v. Two more rows are added to the above table. What will this change- degree or cardinality of the table?</p>	TNO	ACNO	TTYPE	DOT	AMOUNT	143	12513	Deposit	2021-12-12	15000	149	12545	Withdraw	2022-01-17	12514	145	12548	DD	2021-10-17	12514	153	14587	Withdraw	2019-15-22	12545	142	12546	Deposit	2019-07-12	25245	
TNO	ACNO	TTYPE	DOT	AMOUNT																												
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149	12545	Withdraw	2022-01-17	12514																												
145	12548	DD	2021-10-17	12514																												
153	14587	Withdraw	2019-15-22	12545																												
142	12546	Deposit	2019-07-12	25245																												
	SECTION E																															
34	<p>Ms. Anjana is a Super Store Manager. She often needs to maintain the records of products in the store and analyze data to plan her sales targets. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a List named - 'price' with the following values 780, 390, 110,145, 224, 390, 165, 390, 444, 254, 77</p> <p>b. remove the last added element in the list.</p> <p>c. Delete the first occurance of 390 from the list.</p> <p>d. Sort the elements of the list in descending order.</p>	4																														
35	<p>Hemachndra Rawat likes to play competitive video games and he also records his gaming session on twitch. One day his cousin Shrea calls him to help her out with a school project about esports. Here's the snippet of their conversation.</p> <p>Shrea: I would like to create a digital database about recent and popular game titles. Can you help me out with that?</p> <p>Hemachandra: Why not. Just let me know what the details are you looking for.</p> <p>Shrea: I want to know the names of popular games, their production companies, Genre, Download count, followers on social media etc.</p> <p>Hemachandra: I think I can work with that. I'll create a database and a few tables, you can populate them with the data later on.</p> <p>Shrea: Great. Can you tell me how to check the results?</p> <p>Hemachandra: Of course. I'll tell you how to create and manage your database.</p>	4																														

	<p>We will use MySQL for this purpose.</p> <p>They created the database and the tables and now Shrea is ready with some queries to test the database. Answer her query on Hemchandra's behalf:</p> <ul style="list-style-type: none">a) How do I list various databases in MySQL?b) Which command to use in order to see the table structure?c) Can I insert the values in a table without following the sequence? <p>If yes, Can you tell me the syntax to insert (Overwatch, FPS, 3300000) in a table having 3 columns: (Name, Followers, Genre).</p> <p>If not, can you tell me the way/query to do so the right way?</p>	
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KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION
QUESTION PAPER (SET-5)
CLASS: XI SESSION: 2022-23
INFORMATION PRACTICES (CODE 065)

TIME: 3 HRS

M M: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	SECTION-A	Marks
1	Software programs developed for performing particular tasks related to managing computer resources is called A. System software B. Utility software C. Application software D. Helper software	1
2	Process of removing errors called A. Error Free B. Debug C. Syntax Error D. Exception	1
3	Which of the following is not a function of the database? A. Managing stored data B. Manipulating data C. Security for stored data D. Analysing code	1
4	What are the characteristics of big data? A. Volume & Velocity B. Variety & Veracity C. Value D. All of the above	1
5	What is the DDL command out of the following to rename a column? A. Change Name B. Rename C. Modify Name D. Alter Name	1

6	<p>which command we use can use To remove string "hello" from list1, Given, list1=["hello"]</p> <p>A. list1.remove("hello") B. list1.pop(list1.index("hello")) C. both a & b D. none of these</p>	1
7	<p>Which one of the followings is true in the context of Memory: -</p> <p>A. Secondary memory is faster than Primary memory B. All Primary memories are volatile in nature C. Secondary memory is portable D. Cache memory decreases the performance of the computer</p>	1
8	<p>When using the SQL INSERT statement:</p> <p>A. rows can be modified according to criteria only. B. rows cannot be copied in mass from one table to another only. C. rows can be inserted into a table only one at a time only. D. rows can either be inserted into a table one at a time or in groups.</p>	1
9	<p>A relation is having 5 columns and 6 rows, find out the Degree and Cardinality of this Relation-</p> <p>A. 1 Degree and 1 Cardinality B. 6 Degree and 5 Cardinality C. 5 Degree and 6 Cardinality D. 2 Degree and 2 Cardinality</p>	1
10	<p>Which of the following are examples of Proprietary Software?</p> <p>A. MS Office B. Talley C. Both A and B D. None</p>	1
11	<p>Which is not a valid Data Type of SQL?</p> <p>A.int B. Varchar C. Date D. Time</p>	1
12	<p>What will be the output of the following Python code snippet?</p> <pre>d1 = {"abc":234, "xyz":567} d2 = {"abc":123, "xyz":567} print(d1 > d2)</pre> <p>A. False B. True C. Error D. None</p>	1
13	<p>SQL Statement used to extract data from one or more tables is</p> <p>A. Select B. From C. Where D. Describe / Desc</p>	1
14	<p>Which of the following is/are a need to use DBMS?</p>	1

	A. Store large volume of data B. Effective way to retrieve meaningful data C. Avoids redundancy of data. D. All of the above.	
15	Which of the following(s) can be a composite key? A. Primary B. Alternate C. Candidate D. All of these	1
16	Select correct pair of DML commands out of followings: - A. CREATE TABLE, INSERT B. DROP TABLE, SELECT C. DELETE, DROP TABLE D. INSERT, UPDATE	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.	
17	A: Jump statements in python are used to alter the flow of a control statement like you want to skip a part of a loop or a condition R: break, continue and pause are three jump statements available in a python.	1
18	A: In cloud computing, computer-based services are delivered over the Internet or the cloud, they are accessible from anywhere using any smart device. R: The cloud services comprise software, hardware (servers), databases, storage, etc. These services can be used as a pay per use basis, just like we use electricity.	1
	SECTION B	
19	Find out the error(s) in the following python code: <pre>print('enter a number between 1 and 9') num=int(input())) if(num>9): print('the number is greater than 9') elif(num<0): print('the number is less than '0') else: print('good buoy/garl')</pre> OR What will be the output of following program <pre>n=0 while n < 5: n+=1 if n==3: continue print (n,end=' ') print("Loop Over")</pre>	2

20	<p>Choose an appropriate answer with respect to the following code snippet.</p> <pre>CREATE TABLE Staff (StaffID CHAR (5) PRIMARY KEY, FirstName VARCHAR (20) NOT NULL, LastName VARCHAR (15), IsQualified CHAR(4)));</pre> <p>i) What will be the degree of this table? ii) What does 'IsQualified' represent in the above code snippet?</p>	2
21	Write down any four features of 5th generation computers	2
22	Differentiate append() and extend() methods used with lists? Illustrate with an example of both?	2
23	<p>Consider the table Employee {EId, EName, Age, Designation, Salary, Department}. Write the command to display EId, EName, Age, Designation and Department of the employees whose Age is greater than 18 or department is not HR.</p> <p>OR</p> <p>Name the command to add new tuples into a table? State the information one needs before adding a new tuple into a table?</p>	2
24	Differentiate between the interactive mode and script mode available with python IDLE.	2
25	<p>A nibble is composed of-</p> <p>A. 8 bits B. 2 bits C. 4 bits D. 6 bits</p>	2
SECTION C		
26	<p>Give an example of software for each the following purpose:</p> <ol style="list-style-type: none"> Typing a Novel Editing a Photograph Protecting computer system from virus Creating Graphs on available numeric data Joining a data source with a fixed letter format to create multiple letters Creating a poster 	3
27	Write python code to convert the time given in minutes into hours and minutes.	3
28	<p>Write a python program to print the below shown pattern where no. of rows should be entered by the user (Note: no. of rows should be less than equal to 20 else show error).</p> <pre>* * * * * * * * * *</pre>	3

29	<p>Mr. Anil Mohan is a computer teacher ,he want to explain about use of machine learning through some example.Suggest any 3 suitable example or application area where machine learning can be used.</p> <p>OR</p> <p>The new addition of the Apple watch has a feature called “Crash Detection”. Which can send an SOS to the emergency contact and the emergency services. This can be a life saving feature for many unfortunate people who otherwise lose their lives due to the lack of immediate emergency support at the time of the need. The crash detection algorithm needs data to process and identify the situation. How do you think that data is provided to the algorithm? Can you list two such data/input providers in a wearable?</p>	3												
30	<p>Write down SQL commands for following tasks: -</p> <p>i) Open a database ii) Remove/Delete a database iii) Remove/Delete a table from a database</p> <p>OR</p> <p>Explain the concept of DDL, DML and DQL commands.</p>	3												
	SECTION D													
31	<p>Consider the below data, Write a python program to perform below tasks.</p> <p>"Banana":60, "Apple":80, "Orange":55, "Pineapple":80</p> <p>(a) Print the list of values (b) Remove 'Orange' from the dictionary (c) Create the copy of the dictionary (d) Update the price for Apple to 100 (e) Remove all the items from the dictionary</p> <p>OR</p> <p>Explain the use of following methods: -</p> <p>a) items() b) update()</p>	5												
32	<p>Table SALE</p> <table><tr><td>PRODID</td><td>QTY</td><td>RATE</td><td>AMOUNT</td></tr><tr><td>1</td><td>10</td><td>100</td><td>1000</td></tr><tr><td>2</td><td>5</td><td>50</td><td>250</td></tr></table> <p>a. Write sql commands create above table SALE with suitable datatype b. Can we take the QTY column of SALE table as Primary Key? If no give reason c. Which column is best suitable for applying Primary Key?</p>	PRODID	QTY	RATE	AMOUNT	1	10	100	1000	2	5	50	250	5
PRODID	QTY	RATE	AMOUNT											
1	10	100	1000											
2	5	50	250											

	d. what is the cardinality of above table e. what is the degree of above table																																																											
33	<p>Write the queries (a) to (e) based on the table given below:</p> <table><tr><th colspan="4">Course</th></tr><tr><th>C_ID</th><th>F_ID</th><th>Cname</th><th>Fees</th></tr><tr><td>C21</td><td>102</td><td>Grid Computing</td><td>40000</td></tr><tr><td>C22</td><td>106</td><td>System Design</td><td>16000</td></tr><tr><td>C23</td><td>104</td><td>Network Security</td><td>80000</td></tr><tr><td>C24</td><td>106</td><td>Human Biology</td><td>150000</td></tr><tr><td>C25</td><td>102</td><td>Computer Network</td><td>20000</td></tr></table> <p>a) Display details of all courses having string 'comp'. b) Display C_ID and F_ID whose Fee is less than 50000. c) Show CName and Fee taken by Faculty 106 and 102. d) Add a new record in the table ('C26',NULL,'AI with Python',60000) e) What will be the output of the following Query: SELECT DISTINCT F_ID FROM Course;</p> <p>OR</p> <p>Consider the table - RESTAURANT given below. Write the output for (i) to (iv) and write sql query for question (v)</p> <table><tr><th>SNO</th><th>NAME</th><th>TYPE</th><th>DOA</th><th>COST</th></tr><tr><td>561</td><td>Chinese Bhel</td><td>Fast Food</td><td>2021-12-12</td><td>150</td></tr><tr><td>761</td><td>Veg Manchurian</td><td>Filler</td><td>2022-01-17</td><td>80</td></tr><tr><td>987</td><td>Veg Kofta</td><td>Main Course</td><td>2021-10-17</td><td>260</td></tr><tr><td>345</td><td>Malai Paneer</td><td>Main Course</td><td>2019-15-22</td><td>230</td></tr><tr><td>234</td><td>Rava Idli</td><td>Fast Food</td><td>2019-07-12</td><td>120</td></tr></table> <p>i. Select * from RESTAURANT where SNO= 761; ii. Select NAME, TYPE, DOA from RESTAURANT where cost in (230, 260, 300); iii. Select * from RESTAURANT where NAME like = '%roti%'; iv. Select NAME from RESTAURANT where DOA between '2022-01-01 and '2022-12-31"; v. Add one more row to the above table with the following data SNO- 111; NAME: Tawa Roti, Cost : 20. Values for the other attributes not available</p>	Course				C_ID	F_ID	Cname	Fees	C21	102	Grid Computing	40000	C22	106	System Design	16000	C23	104	Network Security	80000	C24	106	Human Biology	150000	C25	102	Computer Network	20000	SNO	NAME	TYPE	DOA	COST	561	Chinese Bhel	Fast Food	2021-12-12	150	761	Veg Manchurian	Filler	2022-01-17	80	987	Veg Kofta	Main Course	2021-10-17	260	345	Malai Paneer	Main Course	2019-15-22	230	234	Rava Idli	Fast Food	2019-07-12	120	5
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	SECTION E																																																											
34	<p>Ms. Vijeta is a climatologist. She often needs to maintain the records of temperature of the area under study and analyze data to forecast weather. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a list named 'temp', with the following values :</p>	4																																																										

	<p>27,29,33,34,28,26,27,28,30,31,32,28</p> <p>b. Reverse the order of the elements in the list</p> <p>c. Display the first three elements of the list.</p> <p>d. Add 32 as a new element at the last of list</p>	
35	<p>A shop called Rainbow Garments that sells school uniforms, maintains a database SCHOOL_UNIFORM. It consisted of two relations — UNIFORM and PRICE. They made UniformCode as the primary key for UNIFORM relations. Specify SQL queries to rectify the following anomalies.</p> <p>a) There's a new product, a Handkerchief. The colors are Red and White. The Price is Rs. 100. The PID is 'hkcf2004' and 'hkcf2005' respectively. Insert the above data in the Relation Product(PID, Name, Color, Size, Price).</p> <p>b) Write down the query to check the table contents.</p> <p>c) Write down the query to display all the products with size "S" and color "Blue".</p>	4

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**Marking Scheme SET-1****CLASS: XI SESSION: 2022-23****INFORMATION PRACTICES (CODE 065)****TIME: 3 HRS****M M: 70****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	Part-A	Marks
1	What was the name of the first computer designed by Charlse Babbage? A. Analytical Engine B. Difference Engine C. Colossus D. ENIAC Ans. B. Difference Engine	1
2	Which statement is correct? A. List is immutable && Tuple is mutable B. List is mutable && Tuple is immutable C. Both are Mutable. D. Both are Immutable Ans. B. List is mutable && Tuple is immutable	1
3	What is a database? A. Organized collection of information that cannot be accessed, updated, and managed B. Collection of data or information without organizing C. Organized collection of data or information that can be accessed, updated, and managed D. Organized collection of data that cannot be updated Ans. C. Organized collection of data or information that can be accessed, updated, and managed	1
4	_____ is a subsystem of Artificial Intelligence, wherein computers have the ability to learn from data using statistical techniques, without being explicitly programmed by a human being. A. Artificial Intelligence B. Machine Learning	1

	C. Data Science D. None of the above Ans. B. Machine Learning	
5	What is the full form of DDL out of the following? A. Drive Dilution Language B. Data Deletion Language C. Data Definition Language D. Data Defragmentation Language Ans. C. Data Definition Language	1
6	Which statement does not show any error after execution? Given L=[1,2,3,4] A. print(L+L) B. print(L*L) C. print(L-L) D. All of the mentioned Ans. A. print(L+L)	1
7	Which of the followings is a type of Primary memory: - A. Memory Card B. Compact Disk C. ROM D. Pen Drive Ans. C. ROM	1
8	SQL INSERT statement adds records to any single table in a relational database A. One B. One or More C. only two D. None of Above Ans. B. One or More	1
9	Rows of a Relation are called? A. Attributes B. Tuples C. Degree D. Cardinality Ans. Tuple	1
10	_____ is designed to solve a specific problem or to do a specific task. A. Application Software B. System Software C. Utility Software D. User Ans. A. Application Software	1
11	Which is the full form of SQL out of the following? A. Standard Query language B. Standard Quantum Language C. Structured Query language D. Structured Quantum language Ans. Structured Query language	1
12	Which line of code correctly adds an item to the fruits dictionary with a key	1

	<p>of 'Blackberry' and a value of 20?</p> <p>fruits = {'Apples':1, 'Bananas':4, 'Grapes':17, 'Oranges':14}</p> <p>A. fruits['Blackberry'] = 20</p> <p>B. add fruits['Blackberry'] = 20</p> <p>C. insert 'Blackberry':20 in fruits</p> <p>D. fruits[20] = 'Blackberry'</p> <p>Ans. A. fruits['Blackberry'] = 20</p>	
13	<p>A * symbol in the SQL Select statement signifies</p> <p>A. All rows to be selected from a given table.</p> <p>B. All columns of the given table to be included in the query result.</p> <p>C. Complete Table to be displayed.</p> <p>D. None of the above</p> <p>Ans. B. All columns of the given table to be included in the query result.</p>	1
14	<p>In MySQL, statements should be written in</p> <p>A. upper case only</p> <p>B. lower case only</p> <p>C. title case</p> <p>D. MySQL statements are not case sensitive</p> <p>Ans. D. MySQL statements are not case sensitive</p>	1
15	<p>For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute..</p> <p>A. Relation</p> <p>B. Domain</p> <p>C. Tuple</p> <p>D. Degree</p> <p>Ans. B. Domain</p>	1
16	<p>MySQL is software</p> <p>A. RDBMS</p> <p>B. DBMS</p> <p>C. Proprietary</p> <p>D. Spreadsheet</p> <p>Ans. A. RDBMS</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>i. Both A and R are true and R is the correct explanation for A</p> <p>ii. Both A and R are true and R is not the correct explanation for A</p> <p>iii. A is True but R is False</p> <p>iv. A is false but R is True.</p>	
17	<p>A: Loops are used to repeat a group of statements under a condition. R: Two commonly used loops in python are for loop and while loop.</p> <p>Ans. ii Both A and R are true and R is not the correct explanation for A</p>	1
18	<p>Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.</p> <p>A: In Machine Learning, computers have the ability to learn from data using statistical techniques.</p> <p>R: After successive training, ML Models are used to make predictions about new and unknown data.</p> <p>Ans. (i) Both A and R are true and R is the correct explanation for A</p>	1

	Part-B	
19	<p>Find out the error(s) in the following python code: a,b=9,56 if(a<b) print('a is smaller than b')</p> <p>Ans. errors in the code: a,b=9,56 <u>if(a<b)</u> # : symbol is missing <u>print('a is smaller than b')</u> #indentation is missing</p> <p>correct code: a,b=9,56 if(a<b): print('a is smaller than b')</p> <p>OR</p> <p>What will be the output of following program x=1234 while x%10: x=x//10 print(x)</p> <p>Ans. 123 12 1 0</p>	2
20	<p>Define DDL commands of SQL with examples. Ans. DDL: - Data Definition Language (DDL) provides commands for defining relation schemas, deleting relations, creating indexes, and modifying relation schemas. For example: CREATE, ALTER, DROP etc.</p>	2
21	<p>Write down any four advantages of using computer Ans. Speed,Accuracy,Multi tasking,Large storage etc.</p>	2
22	<p>A list in python is Mutable or Immutable? Justify your answer with an example? Ans. List in python is <u>Mutable</u> List is mutable because its individual elements can be modified. Example L=[10,20,30] print(L) L[0]=50 print(L) output will be [10,20,30] [50,20,30]</p>	2
23	<p>What is the SELECT command? Write down its basic syntax. Ans. The SELECT command is used to retrieve the data from a database. SELECT column1, column2, ...</p>	2

	<p>FROM table_name; OR Ms. Namita is trying to add a new record in a table named PERSON. she wrote following query but got an error: - INSERT RECORD INTO PERSON VALUE [101,"Sandeep", 9955882200] Write a correct query to add the above record?</p> <p>Ans. INSERT INTO PERSON VALUES(101,"Sandeep", 9955882200)</p>	
24	<p>Classify the following operators as logical, relational or assignment operator > , = , ==, and Ans: > : Relational = : assignment ==: Relational and : Logical</p>	2
25	<p>1. What will be units in bytes for following: 1KB, 1MB, 1GB, 1 TB Ans: 1KB=2 raise to power 10 byte , 1MB=2 raise to power 20 byte, 1GB=2 raise to power 30 byte, 1 TB=2 raise to power 40 byte</p>	2
	Part-C	
26	<p>Differentiate between software System and Application software ? Give an example in each case. Ans:The system software is used for operating computer hardware. On the other hand, Application software are installed according to the user's requirements.</p> <p>1 Mark for each correct explanation of system and Application Software. ½ mark each for the correct example.</p>	3
27	<p>Write a program to take user input and find number is odd or even Ans- inp_num = input("Enter a number: ") #Convert string to int inp_num = int(inp_num) if inp_num == 0: print(inp_num, "is Even") elif inp_num%2==0: print(inp_num, "is Even") else: print(inp_num, "is Odd")</p>	3
28	<p>Write a python program to display the largest of 3 numbers using if..elif..else statement(s). Ans. num_first = int(input("Enter first number: ")) num_second = int(input("Enter second number: ")) num_third = int(input("Enter third number: ")) if (num_first > num_second) and (num_first > num_third): print(num_first, "is largest") elif (num_second > num_first) and (num_second > num_third):</p>	3

	<pre>print(num_second, "is largest") else: print(num_third, "is largest")</pre>	
29	<p>Artificial Intelligence (AI) is a discipline that aims to create robots that are intelligent enough to do jobs that are typically performed by humans only. Identify aspects which are still beyond the capabilities of artificial intelligence</p> <p>Ans: High processing power, emotional intelligence, it cannot learn to think outside the box</p> <p>OR</p> <p>A new initiative named PMSHREE is being implemented in various schools across India. The scheme is to make the IOT enabled, smart and model schools. Please suggest three IoT enabled solutions to make the school smart.</p> <p>Ans.</p> <ol style="list-style-type: none"> e-textbooks Smart boards Online tests using personal smart devices Wifi sensors on classrooms doors Sensors in buses to monitor their location Wearables (watches or smart belts) for attendance monitoring 	3
30	<p>Write down name of commands for followings: -</p> <ol style="list-style-type: none"> Making a new database in MySql Obtaining a list of existing databases Opening a database <p>Ans</p> <ol style="list-style-type: none"> CREATE DATABASE Show Databases USE <p>OR</p> <p>What do you understand by the term database? Write any four advantages of using a database over the traditional file system.</p> <p>Ans.</p> <p>A database is an organized collection of structured information, or data, typically stored electronically in a computer system.</p> <p>Its advantages are data redundancy and inconsistency, data sharing, data security and data integrity etc.</p>	3
	Part-D	
31	<p>Write a python program to create a dictionary where the keys are numbers (between 1 to 10) and the values are sum of the first keyth (1 to key) natural numbers.</p> <p>Ans.</p> <pre>my_dict = {} sum = 0 for i in range(1, 11): sum += i my_dict[i] = sum print(my_dict)</pre>	5

	<p>OR</p> <p>a) Define a Dictionary with an example in respect of Python?</p> <p>b) Write down any two characteristics of a python Dictionary?</p> <p>c) What is the purpose of the dict() method?</p> <p>Ans</p> <p>a) Python Dictionaries are a collection of some <u>key:value</u> pairs enclosed within {}.</p> <p>Example - {'Rollno':101, 'Name': 'Jordan', 'Age':25}</p> <p>b)</p> <p>i) Dictionary is mutable but keys are immutable</p> <p>ii)keys are unique</p> <p>c)</p> <p>dict() method is used to create a blank dictionary.</p> <p>D1=dict()</p>																										
32	<p>Write a SQL statement to create a table jobhistory in job database with following structure</p> <pre>+-----+-----+-----+-----+-----+ Field Type Null Key Default Extra +-----+-----+-----+-----+-----+ JOB_ID varchar(10) NO JOB_TITLE varchar(35) NO NULL MIN_SALARY decimal(6,0) YES NULL MAX_SALARY decimal(6,0) YES NULL +-----+-----+-----+-----+-----+</pre> <p>Write Sql statement for following</p> <p>a. Create a database job</p> <p>b. Before creation of table open the newly created database job</p> <p>c. create a table jobhistory with above structure</p> <p>d. Which field can be created as Primary key</p> <p>e. What will be the degree of table/relation jobhistory</p> <p>Ans.</p> <p>a. create database job;</p> <p>b. use job;</p> <p>c. create table jobhistory(JOB_ID varchar(10), JOB_TITLE varchar(35) NULL , MIN_SALARY decimal(6,0) NULL decimal(6,0));</p> <p>d. JOB_ID</p> <p>e. 4</p>	5																									
33	<p>Answer the question (a) to (e) based on the table, PLAYER given below:</p> <p style="text-align: center;">Player</p> <table><tr><th>PID</th><th>PName</th><th>Gender</th><th>Game</th><th>Rank</th></tr><tr><td>P01</td><td>Sunny Paji</td><td>Male</td><td>Cricket</td><td>5</td></tr><tr><td>P02</td><td>Marry Kaun</td><td>Female</td><td>Boxing</td><td>3</td></tr><tr><td>P03</td><td>Saniya Mircha</td><td>Female</td><td>Tennis</td><td>5</td></tr><tr><td>P04</td><td>Sachin Reelkar</td><td>Male</td><td>Cricket</td><td>1</td></tr></table>	PID	PName	Gender	Game	Rank	P01	Sunny Paji	Male	Cricket	5	P02	Marry Kaun	Female	Boxing	3	P03	Saniya Mircha	Female	Tennis	5	P04	Sachin Reelkar	Male	Cricket	1	5
PID	PName	Gender	Game	Rank																							
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P02	Marry Kaun	Female	Boxing	3																							
P03	Saniya Mircha	Female	Tennis	5																							
P04	Sachin Reelkar	Male	Cricket	1																							

P05	Vijender Maohawk	Male	Boxing	Null
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- Display details of all Male players.
- Display player name and game whose rank is 1 to 3
- Show PID,PName and Rank whose game is either Boxing or Cricket.
- Add a new record in the table ("P06", "Abhinav","Male","Shooting",1)
- What will be the output of the following Query:

SELECT Pname as Player_Name, Game

FROM Player

WHERE Game='Tennis';

Ans.

- SELECT * FROM Player WHERE Gender='Male';
- SELECT Pname,Game FROM Player WHERE Rank BETWEEN 1 AND 3;
- SELECT PID,PName,Rank FROM Player
WHERE Game IN ('Boxing','Cricket');
- INSERT INTO Player VALUES ("P06", "Abhinav","Male","Shooting",1);
-

Player_Name	Game
Saniya Mircha	Tennis

OR

Consider the table -TICKET given below. Write the output for (i) to (iv) and answer the question (v)

TKTN O	PNAME	SOURCE	DESTINATIO N	FARE
1725	Amrit Jain	Jaipur	Kota	340
1425	Vimal Kumar	Jaipur	Mumbai	570
1121	Vickey Kaushal	Kota	Mumbai	660
1252	Vikek Shah	Karauli	Jaipur	190
1251	Urmila Pandey	Banswada	Udhampur	850

- Select * from TICKET where TKTNO=1425;
- Select PNAME, SOURCE, DESTINATION from TICKET where price between 300 and 660);
- Select * from TICKET where SOURCE = 'AJMER';
- Select PNAME from TICKET where PNAME like 'vi%';
- What is the degree of the above table?

ANS:

i.

TKTN O	PNAME	SOURCE	DESTINATION	FARE
1425	Vimal Kumar	Jaipur	Mumbai	570

ii.

	<table><tr><th>PNAME</th><th>SOURCE</th><th>DESTINATION</th></tr><tr><td>Amrit Jain</td><td>Jaipur</td><td>Kota</td></tr><tr><td>Vimal Kumar</td><td>Jaipur</td><td>Mumbai</td></tr><tr><td>Vickey Kaushal</td><td>Kota</td><td>Mumbai</td></tr></table> <p>iii Empty set</p> <p>iv</p> <table><tr><th>PNAME</th></tr><tr><td>Vimal Kumar</td></tr><tr><td>Vickey Kaushal</td></tr><tr><td>Vikek Shah</td></tr></table> <p>v. 5 1 mark for correct output. ½ mark for partial correct output.</p>	PNAME	SOURCE	DESTINATION	Amrit Jain	Jaipur	Kota	Vimal Kumar	Jaipur	Mumbai	Vickey Kaushal	Kota	Mumbai	PNAME	Vimal Kumar	Vickey Kaushal	Vikek Shah	
PNAME	SOURCE	DESTINATION																
Amrit Jain	Jaipur	Kota																
Vimal Kumar	Jaipur	Mumbai																
Vickey Kaushal	Kota	Mumbai																
PNAME																		
Vimal Kumar																		
Vickey Kaushal																		
Vikek Shah																		
	Part-E																	
34	<p>Mr. Tushar Kapoor, is a games teacher. He needs to prepare a list of students who are selected for regional level sports meets. later he needs to perform some actions on the list so prepared. He is of the view that the task can be accomplished easily using python lists data structure. Help him to perform the following task using lists in Python programming language.</p> <p>a. create a list named 'Regional' with the following values :- 'Amrit', 'Kanika', 'Salman', 'Vivek', 'Anita', 'Vipin'</p> <p>b. print the number of students in the ist.</p> <p>c. remove the student at the third index.</p> <p>d. Display last three elements in the list</p> <p>Ans:</p> <p>a. Regional = ['Amrit', 'Kanika', 'Salman', 'Vivek', 'Anita', 'Vipin']</p> <p>b. len(Regional)</p> <p>c. Regional.pop(3)</p> <p>d. Regional[-1:-4:-1]</p> <p>1 mark for each correct answer. ½ mark, for recognition of proper command/ function.</p>	4																
35	<p>Mr Vanaram has opened a coaching institute in his home city Yalahanka. He has a bit of experience with database design but forgot a few things here and there. He has called his best buddy Ramanatham for help. Let's assume you are Ramnatham, help out your friend to set up and test the database thus created.</p> <p>Course</p> <table><tr><th>C_ID</th><th>F_ID</th><th>Cname</th><th>Fees</th></tr><tr><td>C21</td><td>102</td><td>Grid Computing</td><td>40000</td></tr><tr><td>C22</td><td>106</td><td>System Design</td><td>16000</td></tr></table>	C_ID	F_ID	Cname	Fees	C21	102	Grid Computing	40000	C22	106	System Design	16000	4				
C_ID	F_ID	Cname	Fees															
C21	102	Grid Computing	40000															
C22	106	System Design	16000															

C23	104	Network Security	80000
C24	106	Human Biology	150000
C25	102	Computer Network	20000

a) Help Vanaram by filling out the missing bits in the table creation process:

CREATE ___(i)___ Course(
C_ID CHAR(3),
F_ID ___(ii)___,
Cname VARCHAR (20),
Fees INT);

b) Vanaram: Hey Rama, would you please write the INSERT query for the first row? I'll follow and write the subsequent one myself.

c) Vanaram: I want to see the data of the table but the query: SELECT ALL FROM TABLE Course; is not working. Can you fix it?

Ans.

a) (i) TABLE (ii) INT

b) INSERT INTO Course VALUES('C21',102,'Grid Computing',40000);

c) SELECT * FROM Course;

2+1+1=4 Marks

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION
MARKING SCHEME (SET - 02)
CLASS: XI SESSION: 2022-23
INFORMATION PRACTICES (CODE 065)

TIME: 3 HRS

M M: 70

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q. N.	Part-A	Marks
1	<p>Which of the following groups are only input devices?</p> <p>A. Mouse, Keyboard, Monitor, Joystick</p> <p>B. Mouse, Keyboard, Printer, Light-Pen</p> <p>C. Mouse, Keyboard, Scanner, Joystick, Light-Pen</p> <p>D. Mouse, Keyboard, Trackball, Speaker, Microphone</p> <p>Ans. C. Mouse, Keyboard, Scanner, Joystick, Light-Pen</p>	1
2	<p>Which of the following characters is used to give single-line comments in Python?</p> <p>A. //</p> <p>B. #</p> <p>C. !</p> <p>D. /*</p> <p>Ans. B. #</p>	1
3	<p>What is the full form of DBMS?</p> <p>A. Data of Binary Management System</p> <p>B. Database Management System</p> <p>C. Database Management Service</p> <p>D. Data Backup Management System</p> <p>Ans. B. Database Management System</p>	1
4	<p>_____ deals with the interaction between humans and computers using human spoken languages, such as Hindi, English, etc.</p> <p>A. Data Science</p> <p>B. Neuroscience</p> <p>C. Natural Language Processing</p> <p>D. All of the above</p> <p>Ans. C. Natural Language Processing</p>	1

5	<p>Which one is the command to add a new column in an already existing relation in SQL?</p> <p>A. Add B. Alter C. Insert D. Change</p> <p>Ans. B. Alter</p>	1
6	<p>Which of the following commands will sort list1 in descending order?</p> <p>A. list1.sort(reverse=0) B. list1.sort() C. list1.sort(reverse='True') D. list1.sort(reverse=1)</p> <p>Ans. D. list1.sort(reverse=1)</p>	1
7	<p>"..... is memory." Select the most appropriate to fill in the blanks of the given statement.</p> <p>A. RAM, Non-volatile B. RAM, Volatile C. RAM, Secondary D. ROM, Volatile</p> <p>Ans. B. RAM, Volatile</p>	1
8	<p>Which one is correct syntax for Insert Statement?</p> <p>A. Insert Columns(Col1, Col2,Col3); B. Insert into (Col1, Col2,Col3) VALUES (Val1,Val2,Val3); C. Insert Columns(Col1, Col2,Col3) VALUE (Val1, Val2,Val3) Into ; D. None of the above.</p> <p>Ans. D. None of the above.</p>	1
9	<p>Columns of a Relation are called?</p> <p>A. Attributes B. Tuples C. Degree D. Cardinality</p> <p>Ans. A. Attribute</p>	1
10	<p>OSS stands for _____.</p> <p>A. Open System Service B. Open Source Software C. Open System Software D. Open Synchronized Software</p> <p>Ans. B. Open Source Software</p>	1
11	<p>A column is declared with char (10) size, and assigned 4 characters only. How many total characters will this column occupy?</p> <p>A. 4 B. 5 C. 10 D. 11</p> <p>Ans. C. 10</p>	1
12	<p>Suppose my_dict = {"Name": "Aakash", "Age": 35, "Gender": "Male"}. To delete the entry for "Age", what command do we use?</p> <p>A. my_dict.delete("Age":35)</p>	1

	<p>B. my_dict.delete("Age") C. del my_dict["Age"] D. del my_dict["Age":35] Ans. C. del my_dict["Age"]</p>	
13	<p>Which of the following clauses is used in the SQL select statement to filter rows to be included in the query result.</p> <p>A. Order By B. Group by C. Having D. Where Ans. D. Where</p>	1
14	<p>Which of the following is not a feature of MySQL?</p> <p>A. Cross Platform B. User Friendly C. Open source D. License fee s to be paid for use Ans. D. License fee s to be paid for use</p>	1
15	<p>In the relational model, the number of attributes and number of tuples of a relation are termed as _____ and _____ respectively.</p> <p>A. cardinality, domain B. domain, degree C. degree, cardinality D. cardinality, degree Ans. C. degree, cardinality</p>	1
16	<p>Which is/are the sublanguage(s) of SQL: -</p> <p>A. DML B. DDL C. DCL D. All of the above Ans. D. All of the above</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>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.</p>	
17	<p>A: if..elif.. else is a form of if statement used when we have a large number of conditions connected to each other. R: In an if.elif..else statement one condition is evaluated, if it is found incorrect, another set of conditions is tested and the process continues. If none of the given conditions is found to be true, the statements associated with the else part are executed. Ans. A. Both A and R are true and R is the correct explanation for A</p>	1
18	<p>A: Virtual Reality (VR) is athree-dimensional, computer-generated situation that simulates the real world. R: It adds components of the digital world to the physical world, along with the associated tactile and other sensory requirements, thereby making the reality interactive and digitally manipulable</p>	1

	Ans. B. Both A and R are true and R is not the correct explanation for A	
	Part-B	
19	<p>Find out the error(s) in the following python code: print(area of circle calculator) r = 7 area = pi * r ** 2 Ans. Errors in the code: <u>print(area of circle calculator)</u> # string parameter should be enclosed in '<str>' r=7 <u>area=pi*r**2</u> # pi variable is not defined</p> <p>Correct code: print('area of circle calculator') r=7 pi=3.14 area=pi*r**2 OR What will be the output of following program x=10 for i in range(x): if x==5: break print("H") print(x) Ans. 10</p>	2
20	<p>An organization named Gaurav wants to put all the data in the form of records. The records are stored in a table and tables are stored in a database. Which DDL command is used to create a database name Gaurav? Write down the SQL Statement to create the database. Ans. i. CREATE ii. CREATE DATABASE Gaurav;</p>	2
21	<p>Write down the full form of following i/o devices: OCR, MICR, OMR, VR Ans. OCR- optical character reader MICR- magnetic ink character recognition OMR- Optical Mark Reader VR- Virtual reality</p>	2
22	<p>Find output of the following code fragment L = [10, 20, 30, 40, 50] for idx in range(0, len(L), 2): print(L[idx], end="#") Ans. 10#30#50#</p>	2
23	<p>Consider the table Student {S_Id, S_Name, S_Age, S_Class, S_Fee}. Write the command to display S_Id, S_Name and S_Class of the students who are studying in class 5, 9, 10 and 12. Ans. SELECT S_Id, S_Name, S_Class</p>	2

	<p>FROM Student WHERE S_Class IN (5, 9, 10, 12); OR What is the purpose of the INSERT command? Explain briefly with an example? Ans. INSERT is a DML command that is used to add a new record/tuple in a table Syntax: INSERT INTO <Tablename>[Attribtelist] VALUES(Value1,Value2,,,,,, value n); Example: INSERT INTO PERSON(ID,NAME,Mobile) VALUES(101,"Sandeep", 9955882200);</p>	
24	<p>Predict the output of the following a. 100 + 34//11%3 b. True and True or False and not True Ans. a. 100 b. True</p>	2
25	<p>Arrange the following memory units in decreasing order: Exa byte, Tera byte, Peta byte, Giga byte Ans. Exa byte, Peta byte, Tera byte, Giga byte</p>	2
	Part-C	
26	<p>Differentiate between generic and special purpose software. Give an example in each case. Ans: General purpose application software is a kind of application that can be used for a variety of tasks. It is not limited to one particular function. They provide large no of features for its users. For example, a word processor could be classed as general purpose software as it would allow a user to write a novel, create a restaurant menu or even make a poster. Special purpose application software is a type of software created to execute one specific task. For example, a camera application on your phone will only allow you to take and share pictures Generic: Word Processing Application, Spreadsheet etc. Specific: Adobe Photoshop, Corel Draw etc.</p>	3
27	<p>Write a program to check if the number is positive or negative or zero and display an appropriate message. (input: num=3.4, 0 and -4.5) Ans. num = 3.4 # Try these two variations as well: # num = 0 # num = -4.5 if num > 0: print("Positive number") elif num == 0: print("Zero") else: print("Negative number")</p>	3
28	<p>Write a python program to check whether the given character is a vowel or not. Ans. my_ch = input("Enter a character: ")</p>	3

	<pre> if my_ch in ['a', 'A', 'e', 'E', 'i', 'I', 'o', 'O', 'u', 'U']: print(my_ch, 'is a vowel') else: print(my_ch, 'is not a vowel') </pre>	
29	<p>A news channel broadcasts information on a wide range of topics. The news channel permits people to submit breaking news, which is subject to verification by the channel's reporters. It may be difficult to distinguish between real news and fake news, which can lead to confusion among readers and threaten a news organization's reputation. Which domain is used to detect fake news so that the audience has a high level of trust in the news channel? Write in brief about this domain.</p> <p>Ans. Natural Language Processing. It refers to the branch of computer science and more specifically, the branch of artificial intelligence with giving computers the ability to understand text and spoken words in much the same way human beings can.</p> <p>OR</p> <p>A company interested in cloud computing is looking for a provider who offers a set of basic services such as virtual server provisioning and on-demand storage that can be combined into a platform for deploying and running customized applications. What type of cloud computing model fits these requirements?</p> <p>a) Platform as a Service b) Software as a Service c) Infrastructure as a Service</p> <p>Also, Explain your choice.</p> <p>Ans.</p> <p>c) Infrastructure as a Service because The IaaS providers can offer different kinds of computing infrastructure, such as servers, virtual machines (VM), storage and backup facility, network components, operating systems or any other hardware or software. Using IaaS from the cloud, a user can use the hardware infrastructure located at a remote location to configure, deploy and execute any software application on that cloud infrastructure.</p>	3
30	<p>Mr. Khan wants to view the structure of an existing table - STUDENT in a database SCHOOL. So he started Mysql, write down the sequence of the commands he should use as he is not sure about the name of the table also.</p> <p>Ans.</p> <p>i) Use SCHOOL ii) Show tables iii) Describe STUDENT</p> <p>OR</p> <p>Mitali is confused with the terms Domain, Tuple and Attribute. Help her to understand the terms with a suitable example of each.</p> <p>Ans.</p> <p>Domain: A domain is a set of allowable values for one or more attributes. Tuple: A tuple is a row of a relation. Total no. of tuples (rows) is called the cardinality of the relation. Attribute: An attribute is a named column of the relation. Total no. of attributes (columns) is called the degree of the relation.</p>	3
	Part-D	
31	<p>Write a python program to count the frequency of each character using a dictionary of a string (string should be entered by the user).</p> <p>Ans.</p> <pre> text = input("Enter the text: ") </pre>	5

	<pre>my_dict = {} for ch in text: if ch in my_dict: my_dict[ch] += 1 else: my_dict[ch] = 1 print(my_dict) OR Explain the use of get() and pop() methods in respect of Python Dictionary with examples. Ans. get() → to access an element from a dictionary by specifying a key. my_dict {'name': 'Jack', 'age': 26} print(my_dict.get('age')) pop() → remove a particular item from dictionary and returns its value squares {1: 1, 2: 4, 3: 9, 4: 16, 5: 25} print(squares.pop(4)) print(squares)</pre>																										
32	<p>Write a SQL statement to create a table customer in shop database with following structure</p> <pre>+-----+-----+-----+-----+ Field Type Null Key Default Extra +-----+-----+-----+-----+ ID int(11) NO NAME varchar(20) NO AGE int(11) NO ADDRESS char(25) YES NULL +-----+-----+-----+-----+</pre> <p>Write SQL statements for following</p> <ol style="list-style-type: none">Create a database shopBefore creation of table open the newly created database shopCreate a table customer with above structureWhich field can be created as Primary keyWhat will be the degree of table/relation customer <p>Ans.</p> <ol style="list-style-type: none">create database shop;use shop;create table customer(ID int(11), NAME varchar(20), AGE int(11), ADDRESS char(25) DEFAULT NULL);ID4	5																									
33	<p>Answer the question (a) to (e) based on the table, Book given below:</p> <table><caption>Book</caption><tr><th>BNo</th><th>Title</th><th>Author</th><th>Date_Purchased</th><th>Price</th></tr><tr><td>B01</td><td>IP CLASS XI</td><td>A ARORA</td><td>2020-01-05</td><td>350</td></tr><tr><td>B02</td><td>COMP SCI</td><td>P ARORA</td><td>2020-10-15</td><td>250</td></tr><tr><td>B03</td><td>CS CLASS XII</td><td>NCERT</td><td>2021-06-30</td><td>NULL</td></tr><tr><td>B04</td><td>IP With PYTHON</td><td>NCERT</td><td>2021-12-01</td><td>400</td></tr></table>	BNo	Title	Author	Date_Purchased	Price	B01	IP CLASS XI	A ARORA	2020-01-05	350	B02	COMP SCI	P ARORA	2020-10-15	250	B03	CS CLASS XII	NCERT	2021-06-30	NULL	B04	IP With PYTHON	NCERT	2021-12-01	400	5
BNo	Title	Author	Date_Purchased	Price																							
B01	IP CLASS XI	A ARORA	2020-01-05	350																							
B02	COMP SCI	P ARORA	2020-10-15	250																							
B03	CS CLASS XII	NCERT	2021-06-30	NULL																							
B04	IP With PYTHON	NCERT	2021-12-01	400																							

- Display details of the books whose price not mentioned
- Display title and date of purchase of the books having "IP" in their title.
- Display all the details of books by NCERT.
- Add a new tuple (B05, Anaconda, Nickey M, 2022-01-01, 550).
- What will be the output of the following Query:

SELECT Author, Title

FROM Book

WHERE Price BETWEEN 100 AND 250;

Ans.

- SELECT * FROM Book WHERE Price IS NULL;
- SELECT Pname, Game FROM Player WHERE Rank BETWEEN 1 AND 3;
- SELECT PID, PName, Rank FROM Player
WHERE Game IN ('Boxing', 'Cricket');
- INSERT INTO Player VALUES

("B06", "Anaconda", "Nickey M", "2022-01-01", 550);

e.

Author	Title
NCERT	CS CLASS XII

OR

Consider the table -PLAYER given below. Write the output for (i) to (iv) and write sql query for question (v)

PID	PName	Gender	Game	Rank
P01	Sunny Paji	Male	Cricket	5
P02	Marry Kaun	Female	Boxing	3
P03	Saniya Mircha	Female	Tennis	5
P04	Sachin Reelkar	Male	Cricket	1
P05	Vijender Maohawk	Male	Boxing	Null

- Select * from PLAYER where PID='P05';
- Select PNAME, GENDER, GAME from PLAYER where rank between 1 and 4;
- Select * from PLAYER where Rank= 6;
- Select PNAME from PLAYER where PNAME like 'Sa%';
- Insert one more row in the above table having the following data:
- P10, Kanika Gautam, Female, Hockey, 5

Ans:

a.

PID	PName	Gender	Game	Rank
P05	Vijender Maohawk	Male	Boxing	Null

b.

PNAME	GENDER	GAME
Marry Kaun	Female	Boxing
Sachin Reelkar	Male	Cricket

- Empty set

	<p>d.</p> <table><tr><td>PNAME</td></tr><tr><td>Saniya Mircha</td></tr><tr><td>Sachin Reelkar</td></tr></table> <p>e. insert into PLAYER values('P10', 'Kanika Gautam', 'Female', 'Hockey', 5)</p>	PNAME	Saniya Mircha	Sachin Reelkar																						
PNAME																										
Saniya Mircha																										
Sachin Reelkar																										
	Part-E																									
34	<p>Miss Anita Bhati is a mathematics teacher. She often needs to evaluate her students and analyze her scores to plan her teaching pedagogies. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a list named 'scores' having following values: 10, 7, 9, 11, 12, 15, 19, 20, 18, 4</p> <p>b. Add the following values in the list using a single command. 15, 20, 45</p> <p>c. Print the name of the value at index number 3.</p> <p>d. Display the minimum score from the list.</p> <p>Ans:</p> <p>a. scores=[0,7,9,11,12,15,19,20,18, 4]</p> <p>b. scores.extend([15, 20,45])</p> <p>c. scores[3]</p> <p>d. min(scores)</p>	4																								
35	<p>Ashwarekha is an enthusiastic science student. She wants to know about the professional life of her favorite scientists and mathematicians. She decided to create a table named Professor in the digital database named MyHeros. She asked her friend Varahi to come up with a few questions, which can be answered using SQL queries.</p> <p>Professor</p> <table><tr><td>P_ID</td><td>PName</td><td>Department</td><td>Salary</td></tr><tr><td>1729</td><td>Ramanujam</td><td>MATHEMATICS</td><td>500</td></tr><tr><td>1803</td><td>Heigenberg</td><td>PHYSICS</td><td>150000</td></tr><tr><td>1704</td><td>Eular</td><td>MATHEMATICS</td><td>6000</td></tr><tr><td>1610</td><td>Neils B</td><td>CHEMISTRY</td><td>4000</td></tr><tr><td>1935</td><td>Allen T</td><td>MATHEMATICS</td><td>101010</td></tr></table> <p>a. Varahi: Can you tell me the name of Professors of Mathematics with a salary less than 10000? (write down the SQL query)</p> <p>b. Varahi: In your table the monthly salary is stored. Can you display the name and Annual Salary of these professors? (Write the query and use the alias "Annual Income" for the resultant column).</p> <p>Ans.</p> <p>a. SELECT Pname FROM Professor WHERE Department='Mathematics' AND Salary<10000;</p> <p>b. SELECT Pname, Salary*12 AS 'Annual Income' FROM Professor;</p>	P_ID	PName	Department	Salary	1729	Ramanujam	MATHEMATICS	500	1803	Heigenberg	PHYSICS	150000	1704	Eular	MATHEMATICS	6000	1610	Neils B	CHEMISTRY	4000	1935	Allen T	MATHEMATICS	101010	4
P_ID	PName	Department	Salary																							
1729	Ramanujam	MATHEMATICS	500																							
1803	Heigenberg	PHYSICS	150000																							
1704	Eular	MATHEMATICS	6000																							
1610	Neils B	CHEMISTRY	4000																							
1935	Allen T	MATHEMATICS	101010																							

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**Marking Scheme SET -3****CLASS: XI SESSION: 2022-23****INFORMATION PRACTICES (CODE 065)****TIME: 3 HRS****M M: 70****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	Part-A	Marks
1	<p>Which of the following is the correct sequence?</p> <p>A. Gigabyte > Terabyte > Megabyte > Kilobyte</p> <p>B. Kilobyte > Megabyte > Byte > Terabyte</p> <p>C. Megabyte > Kilobyte > Terabyte > Gigabyte</p> <p>D. Terabyte > Gigabyte > Byte > Nibble</p> <p>Ans. D. Terabyte > Gigabyte > Byte > Nibble</p>	1
2	<p>Which one of the following is False regarding data types in Python?</p> <p>A. In python, explicit data type conversion is possible</p> <p>B. Mutable data types are those that can be changed.</p> <p>C. Immutable data types are those that cannot be changed.</p> <p>D. None of the above</p> <p>Ans. D. None of the above</p>	1
3	<p>What is DBMS?</p> <p>A. DBMS is a collection of queries</p> <p>B. DBMS is a high-level language</p> <p>C. DBMS is a programming language</p> <p>D. DBMS stores, modifies and retrieves data</p> <p>Ans. D. DBMS stores, modifies and retrieves data</p>	1
4	<p>Virtual Reality has been used in the field of _____.</p> <p>A. Military training</p> <p>B. Psychology</p> <p>C. Medical procedures</p> <p>D. All of the above</p> <p>Ans. D. All of the above</p>	1
5	<p>What one of the following is not a DDL Command?</p>	1

	A. Delete B. Alter C. Drop D. Create Ans. A. Delete	
6	Given a string: s='String', Which statement converts string 's' into List 'L'. A. L=s B. L=list(s) C. L=s[::] D. all of the mentioned Ans. B. L=list(s)	1
7	Process of accessing or fetching data from storage device as per requirement is known as :- A. Data Retrieval B. Data Capturing C. Data Recovery D. Data Backup Ans. A. Data Retrieval	1
8	How is Column wise insertion of data different from simply passing values to a table? A. Column wise data leads in populating data on an optional basis i.e. whether the user wanted to insert data in a column or not. B. We can't pass value to a table without mentioning column names in an insert statement. C. Passing values to a table without column names is always safe. D. None of the above. Ans. A. Column wise data leads in populating data on optional basis i.e. whether the user wanted to insert data in a column or not.	1
9	Total number of Columns of a Relation is called? A. Attribute B. Tuple C. Degree D. Cardinality Ans. Degree	1
10	Which of the following is not an operating system? a) Windows b) Linux c) Oracle d) Mac OS Ans. C. Oracle	1
11	MySQL is- A. Proprietary Software B. Free and Open Source Software C. Shareware D. None Ans. Free and Open Source Software	1
12	Suppose d_emp = {"Name": "Roshni", "Age": 27, "Gender": "Female"}. To obtain the number of entries in the dictionary, which command do we use?	1

	<p>A. d_emp.size() B. len(d_emp) C. size(d_emp) D. d_emp.len() Ans. B. len(d_emp)</p>	
13	<p>Which of the following SQL statement is invalid : A. Select * from emp where empid= 121; B. Select * from emp; C. Select * where empid=121 from emp; D. Select ename, empid from emp; Ans. C. Select * where empid=121 from emp;</p>	1
14	<p>Which of the following is not a DBMS ? A. MySQL B. Ms-Excel C. Oracle D. DB/2 Ans. B. Ms-Excel</p>	1
15	<p>An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation. A. Candidate B. Alternate C. Super D. Primary Ans. D. Primary</p>	1
16	<p>Choose odd one out: - A. SELECT B. UPDATE C. DROP TABLE D. DELETE Ans. C. DROP TABLE</p>	1
	<p>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.</p>	
17	<p>A: for loop is a compact loop. R: for loop is a compact loop as it is much faster than the while loop. Ans: A is True but R is False</p>	1
18	<p>A: The data in Big Data is not only voluminous, but also unstructured like posts, instant messages, chats, photographs, tweets, blog articles, news items, comments, audio/video chats, etc. R: Such data can be analyzed using traditional data analysis tools like DBMS, spreadsheets etc. Ans. (iii) A is True but R is False</p>	1
	Part-B	

19	<p>Find out the error(s) in the following python code:</p> <pre>print('even odd checker') n=input('enter the number') if(n%2==0): print('even') else: print('odd')</pre> <p>Ans. errors in the code:</p> <pre>print('even odd checker') n=input('enter the number') if(<u>n%2==0</u>): # here n is a string, as the input function returns a string by default print('even') <u>else:</u> # else without if, it should be in the same level as if (indentation) print('odd')</pre> <p>correct code:</p> <pre>print('even odd checker') n=int(input('enter the number')) if(n%2==0): print('even') else: print('odd')</pre> <p>OR</p> <p>What will be the output of following program</p> <pre>a = True b = False c = False</pre> <p>if a or b and c:</p> <pre>print ("PYTHON PROGRAMMING") else: print ("python programming")</pre> <p>Ans. PYTHON PROGRAMMING</p>	2
20	<p>Explain CREATE command also Write down the syntax to create a table.</p> <p>Ans. To define relations (create tables) in the database and specify attributes for each relation along with data types for each attribute. This is done using the CREATE TABLE statement.</p> <p>Syntax:</p> <pre>CREATE TABLE tablename (attributename1 datatype constraint, attributename2 datatype constraint, : attributenameN datatype constraint);</pre>	2
21	<p>Write down the use of following: Printer,Plotter,Projector,Monitor</p> <p>Ans.</p> <p>Printer- prints a hard copy of the electronic data that is stored in the computer</p> <p>Plotter- printer that makes line drawings using automated pens</p>	2

	Projector- projects an image (or moving images) onto a surface Monitor- displays information in pictorial or textual form	
22	Find output of the following code fragment <pre> Lst=[10,20,30,40] Lst[1]=50 Lst[-1]=100 print(L) print(Lst[1:3]) </pre> Ans. <pre> [10,50,30,100] [50,30] </pre>	2
23	Consider the table Student {S_Id, S_Name, S_Age, S_Class, S_Fee}. Write the command to display S_Id, S_Name and S_Age of the students whose Age is in the range 10 to 16 (both inclusive). Ans. <pre> SELECT S_Id, S_Name, S_Age FROM Student WHERE S_Age BETWEEN 10 AND 16; OR </pre> A table EMP has attributes EmpID, First_Name, Last_Name, Salary. Write down command to add following data in the EMP table i) 1111, NAVNEET, SHARMA, 60000 ii) 2222, NARESH, 50000 Ans. <pre> i) INSERT INTO EMP VALUES(1111, "NAVNEET", "SHARMA", 60000); ii) INSERT INTO EMP(EmpID,First_Name,Salary) VALUES(2222,"NARESH",50000); </pre>	2
24	Assume a=100, b = 20 , find the value of each of the following :- a. $a//3+b^2$ b. $a+b > a+20$ Ans. a. 433 b. False	2
25	Arrange the following memory units in increasing order: Exa byte, Tera byte, Peta byte, Giga byte Ans: Giga byte, Tera byte, Peta byte, Exa byte	2
	Part-C	
26	Classify as special purpose and generic software a. Google Chrome: b. Windows 8 c. Word-Processing Software d. Ms-Excel e. Notes f. Avast Antivirus Ans: a. Google Chrome : Generic	3

	<p>b. Windows 8 : Special c. Word-Processing Software : Generic d. Ms-Excel: Generic e. Notes : Generic f. Avast Antivirus : Special</p> <p>½ mark for each correct answer</p>	
27	<p>What will be the output of the following python statements?</p> <pre>a,b,c = 10,40,20 a,c,b = b+10, a+20, c-10 print(a,b,c) print(a+b//c**2)</pre> <p>Ans: 50 10 30 50</p>	3
28	<p>Write a python program to display the sum of first n natural numbers (Note: Value of n should be entered by the user).</p> <p>Ans.</p> <pre>n = int(input("Enter the number of terms: ")) sum = 0 for i in range (1, n+1): sum += i print(sum)</pre>	3
29	<p>Aman, an industrialist, wants to start a plant where production of Cars is to be done. He wants his plant to be in this manner that less man power is used and cars are produced through automated system. What kind of emerging trend will be applicable here and how?</p> <p>Ans. Robotics. In the process of assembling mechanical parts, there is a huge impact of using robotics. In most automotive manufacturing plants, light robotic arms assemble smaller parts such as motors and pumps at high speed. Other tasks, such as screw driving, wheel mounting, and windshield installation, are all done by robot arms</p> <p>OR</p> <p>An incubator cell present in a university, provides the students the opportunity to create the prototype of products/services that they seek to implement. It provides them necessary hardware and software resources as well as access to the investors through various tech fares. A group of students in such an incubator cell are trying to create an emergency alert system that processes the data locally in real time instead of keeping and processing it in the cloud. What kind of technology should they use to make use of each smart device as a node, for sharing the data and processing. List down its one advantage and one disadvantage.</p> <p>Ans.</p> <p>Grid Computing: A grid is a computer network of geographically dispersed and heterogeneous computational resources. Unlike cloud, whose primary focus is to provide services, a grid is more application specific and creates a sense of a virtual supercomputer with an enormous processing power and storage.</p> <p>Advantage:</p> <p>Nowadays, countless computational nodes ranging from hand-held mobile devices to personal computers and workstations are connected to Local Area Network (LAN) or Internet. Therefore, it is economically feasible to reuse or utilise their resources like memory as well as processing power. The grid provides an</p>	3

	<p>opportunity to solve computationally intense scientific and research problems without actually procuring costly hardware.</p> <p>Disadvantage: To set up a grid, by connecting numerous nodes in terms of data as well as CPU, a middleware is required to implement the distributed processor architecture. The setup provides some challenges in the form of security, resource management, data management, communication, fault detection, etc.</p>	
30	<p>i) Write down the name of the SQL command by which one can modify the structure of a table? A table PRODUCT has attributes PID, PNAME, PRICE, DESCRIPTION. ii) Write a command to add a new attribute QUANTITY of Integer type in this table?</p> <p>Ans ALTER TABLE Command ALTER TABLE PRODUCT ADD QUANTITY INT; OR What are the constraints? Explain any two constraints. Ans. Constraints are the rules enforced on the data columns of a table. These are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the database. NOT NULL: It prevents null values from being entered into one or more columns within a table. UNIQUE (also referred to as a unique key constraint): It forbids duplicate values in one or more columns within a table. NOTE: PRIMARY KEY the combination of both NOT NULL and UNIQUE constraints.</p>	3
	Part-D	
31	<p>Write a python program to create a dictionary called fruits with below data: "Banana":60, "Apple":80, "Orange":55, "Pineapple":80 Using loop, print out all the key along with its price and in the following format: Fruit = Apple and Price = 2 Also print the total amount one would need to purchase all of your fruits. Ans. fruits = {"Banana":60, "Apple":80, "Orange":55, "Pineapple":80} total_price = 0 for fruit in fruits: print("Fruit =", fruit, "and Price =", fruits[fruit]) total_price += fruits[fruit] print("Total price:", total_price) OR What is the purpose of pop(), popitem(), clear() methods used with dictionaries in python? Ans - pop() → remove a particular item from dictionary and returns its value squares {1: 1, 2: 4, 3: 9, 4: 16, 5: 25} print(squares.pop(4)) print(squares)</p>	5

	<p>popitem() → remove an arbitrary item, return (key,value)</p> <p>squares {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}</p> <p>print(squares.popitem())</p> <p>print(squares)</p> <p>clear() → remove all items of the dictionary</p> <p>squares {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}</p> <p>squares.clear()</p> <p>print(squares)</p>																														
32	<p>Perform following operation using SQL commands</p> <p>1. Create a database employee</p> <p>2. Open this database</p> <p>3. create tables empmaster with schema<empcode,name,address,salary></p> <p>Suppose database administrator has inserted 12 records in empmaster then what will be the cardinality and degree of empmaster</p>	5																													
33	<p>Write the queries (a) to (e) based on the table given below:</p> <p>Investor:</p> <table><tr><th>ID</th><th>Name</th><th>Age</th><th>Village</th><th>Income</th></tr><tr><td>1</td><td>Rangsa Marak</td><td>32</td><td>Kala Bakra</td><td>85000</td></tr><tr><td>2</td><td>Modi Sarkar</td><td>25</td><td>Badami</td><td>150000</td></tr><tr><td>3</td><td>M.G. Cholera</td><td>27</td><td>Lotte Golla Halli</td><td>65000</td></tr><tr><td>4</td><td>Jamesbond Singh</td><td>33</td><td>Nagina</td><td>85000</td></tr></table> <p>a) Display Name of Investor from Village Badami and Nagia</p> <p>b) Show Name and Age of Investor, whose Age is either 32 or 33.</p> <p>c) Display unique Incomes of the Investors</p> <p>d) Add a new record Like Ika of age 23 from Village Clutter Buck Ganj.</p> <p>e) What will be the output of the following Query:</p> <p>SELECT Name,Village</p> <p>FROM Investor</p> <p>WHERE Name LIKE='%M%k';</p> <p>Ans.</p> <p>a) SELECT Name FROM Investor WHERE Village IN("Badami,'Nagina');</p> <p>b) SELECT Name,Age FROM Investor WHERE Age=32 OR Age=33;</p> <p>c) SELECT Distinct Income FROM Investor;</p> <p>d) INSERT INTO Investor('ID','Name','Age','Village')</p> <p>VALUES (5, "Like Ika",23,"Clutter Buck Gunj");</p> <p>e)</p> <table><tr><th>Name</th><th>Village</th></tr><tr><td>Rangsa Marak</td><td>Kala Bakra</td></tr></table> <p>OR</p> <p>Consider the table - CUSTOMER given below. Write the output for (i) to (iv) and write sql query for question (v)</p>	ID	Name	Age	Village	Income	1	Rangsa Marak	32	Kala Bakra	85000	2	Modi Sarkar	25	Badami	150000	3	M.G. Cholera	27	Lotte Golla Halli	65000	4	Jamesbond Singh	33	Nagina	85000	Name	Village	Rangsa Marak	Kala Bakra	5
ID	Name	Age	Village	Income																											
1	Rangsa Marak	32	Kala Bakra	85000																											
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3	M.G. Cholera	27	Lotte Golla Halli	65000																											
4	Jamesbond Singh	33	Nagina	85000																											
Name	Village																														
Rangsa Marak	Kala Bakra																														

CID	CNAME	LIMIT	DOA	BALANCE
1501	Sunder Garg	80000	2021-12-12	63524
1502	Kapil Jain	75000	2022-01-17	45284
1503	Anita Bhati	75200	2021-10-17	42517
1509	Vipul Patel	83500	2019-15-22	12482
1624	Seema Pratap	95000	2019-07-12	0

- Select * from CUSTOMER where CID=1502;
- Select CNAME, LIMIT, DOA from CUSTOMER where BALANCE > 45000;
- Select * from CUSTOMER where LIMIT>75000 and BALANCE<15000;
- Select CNAME from CUSTOMER where DOA like '2019%';
- Two more rows are added to the above table. What will be the new cardinality of the table?

ANS:

i.

CID	CNAME	Limit	DOA	Balance
1502	Kapil Jain	75000	2022-01-17	45284

ii.

CNAME	LIMIT	DOA
Sunder Garg	80000	2021-12-12
Kapil Jain	75000	2022-01-17

iii

Empty set

iv.

CNAME
Vipul Patel
Seema Pratap

v. 7

1 mark for correct output. ½ mark for partial correct output.

Part-E

34

Ms. Preeti Sexena is a Class Teacher of VIII. She often needs to maintain the health records of her students and analyze her scores to plan her pedagogies. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.

- Create a List named - height with the following values : 4
- sort the elements of the list in ascending order
- Find how many times the value 4.4 appeared in the list.
- Display the maximum value from the list.

Ans:

4

	<p>a. height=[4.4, 5.1, 5.4, 4.4, 3.9, 5.10, 6.0] b. height.sort() c. height.count(4.4) d. max(height)</p> <p>1 mark for each correct answer. ½ mark, for recognition of proper command/function.</p>	
35	<p>Huma is a sports fan. She wants to make a career as a sports journalist. She was given a job as a sports columnist for her college magazine. She decided to present a featurette about the Arjuna Award and the award receivers in the year 2022. She consulted her friend Semim for preparation of the database. Here's the conversation between them.</p> <p>Huma: Hello Semim, would you please help me out with this project? Semim: Sure. I would love to be a part of it. What would I get in return? Huma: Garma Garam Jalebis made by Amma. Semim: Wow, you sure know how to treat your bestie. Cheppa (tell me), what are your queries? Huma: Hmmm.. first of all we need to collect the data from https://pib.gov.in/, an official website of the Ministry of Youth Affairs and Sports. We will then create a database and various tables to perform the analysis. Semim: Okay, let's do it. (They successfully obtained the data from the website and created the database and tables.) Huma: Thanks a ton but wait can you tell me how do I access this data when I am all by myself?</p> <p>a) How do I use the database named Sports? b) How to find the list of various tables in the database? c) I want to know the details of Arjuna Awardee players for the year 2022. What query should I use in the table Arjuna_Puraskar_22? d) Can you tell me the syntax of Insert Query?</p> <p>Write down the answers for the above queries/questions.</p> <p>Ans.</p> <p>a) USE DATABASE Sports; b) SHOW TABLES; c) SELECT * FROM Arjuna_Puraskar_22; d) INSERT INTO <table_name> VALUES(val1,val2,.....valN);</p> <p>1+1+1+1=4 Marks</p>	4

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**Marking Scheme SET-4****CLASS: XI SESSION: 2022-23****INFORMATION PRACTICES (CODE 065)****TIME: 3 HRS****M M: 70****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	Part-A	Marks
1	Introduction to computer and computing Which of the following processes is used to reinstall/restore data from a copy when the original data has been lost? A. Update B. Backup C. Recovery D. None of these Ans. C. Recovery	1
2	What will be the value of the following Python expression? $4 + 3 \% 5$ A. 7 B. 2 C. 4 D. 1 Ans. A. 7	1
3	Which of the following is not an example of DBMS? A. MySQL B. Microsoft Access C. IBM DB2 D. Google Ans. D. Google	1
4	Network of interconnected items with integrated sensors that can gather and transmit data in real time is known as the ____. A. Internet of Things B. Big Data C. Model	1

	D. None of the above Ans. A. Internet of Things	
5	What is the DDL command out of the following to remove a table? A. Remove B. Delete C. Drop D. Pop Ans. C. Drop	1
6	What will be the output of the following code segment? l=['A', 'a', 'Aa', 'aA'] print(max(l)) A. 'A' B. 'a' C. 'Aa' D. 'aA' Ans. D. 'aA'	1
7	DVD stands for : - A. Digital Versatile Drive B. Digital Video Drive C. Digital Volume Drive D. Digital Versatile Disk Ans. D. Digital Versatile Disk	1
8	How can you insert a new row into the "STORE" table A. INSERT ROW (1," RAM SINGH") INTO STORE; B. INSERT VALUES (1," RAM SINGH") INTO STORE; C. INSERT INTO (1," RAM SINGH") STORE; D. INSERT INTO STORE VALUES (1," RAM SINGH"); Ans. D. INSERT INTO STORE VALUES (1," RAM SINGH");	1
9	Total number of Rows of a Relation is called? A. Attribute B. Tuple C. Degree D. Cardinality Ans. Cardinality	1
10	The _____ acts as an interface between the device and the operating system. A. Device Conductor B. Device Driver C. Hardware Drive D. Hardware Conductor Ans. B Device Driver	1
11	MySQL is Case Sensitive- A. Yes B. No C. Keywords/Commands are Case Sensitive D. All of Above	1

	Ans. No	
12	<p>What will be the output of the following Python code snippet?</p> <pre>fruits = {'Apples':1, 'Bananas':4, 'Grapes':17, 'Oranges':14} print(list(fruits.keys()))</pre> <p>A. (1, 4, 17, 14) B. ('Apples', 'Bananas', 'Grapes', 'Oranges') C. [1, 4, 17, 14] D. ['Apples', 'Bananas', 'Grapes', 'Oranges']</p> <p>Ans. D. ['Apples', 'Bananas', 'Grapes', 'Oranges']</p>	1
13	<p>Identify the odd one out</p> <p>A. Select B. Desc C. From D. Where</p> <p>Ans. B. Desc</p>	1
14	<p>A _____ is a collection of attributes alligned vertically in a table.</p> <p>A. Column B. Row C. Cell D. Data</p> <p>Ans. A. Column</p>	1
15	<p>_____ is a set of one or more attributes taken collectively to uniquely identify a record.</p> <p>A. Primary Key B. Foreign key C. Super key D. Candidate key</p> <p>Ans. A. Primary Key</p>	1
16	<p>Mr. Rajan wants to add a new attribute in an existing table in MySql, which command he should use :-</p> <p>A. DESCRIBE B. ALTER TABLE C. DELETE D. INSERT ATTRIBUTE</p> <p>Ans. B. ALTER TABLE</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>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.</p>	
17	<p>A: When we place a loop inside another loop it is called a nested loop. R: Programming language supports the concept of nesting. for example if we place an if statement inside another if statement statement, it is called a nested if statement.</p> <p>Ans. i. Both A and R are true and R is the correct explanation for A</p>	1
18	<p>A: Web of Things (WoT) allows the user to browse the web using anything in the</p>	1

	<p>physical world like a toaster, an oven or a fan.No need of a phone or a PC.</p> <p>R: The 'Internet of Things' is a network of devices that have embedded hardware and software to communicate (connect and exchange data) with other devices on the same network.</p> <p>Ans. (iv) A is false but R is True</p>	
	Part-B	
19	<p>Find out the error(s) in the following python code:</p> <pre>if(4>9): print('4 is greater than 9') else if(9>4): print('4 is smaller than 9') else(4==9): print('4 is equal to 9')</pre> <p>Ans. errors in the code: if(4>9): print('4 is greater than 9') <u>else if(9>4):</u> # it should be elif instead of else if print('4 is smaller than 9') <u>else(4==9):</u> # else doesn't accept any argument print('4 is equal to 9')</p> <p>correct code:</p> <pre>if(4>9): print('4 is greater than 9') elif(9>4): print('4 is smaller than 9') else: print('4 is equal to 9')</pre> <p>OR</p> <p>What will be the output of following program</p> <pre>num = 5 sum = 0 while num> 0: sum += num num -= 2 print(sum)</pre> <p>Ans. 9</p>	2
20	<p>Consider the following SQL statement.</p> <p>S1: CREATE TABLE employee (eno CHAR(3), name VARCHAR(20));</p> <p>S2: INSERT INTO employee VALUES ('E01',RAHUL DRAVID');</p> <p>From S1 and S2, which one is DDL and which one is DML?</p> <p>Ans.</p>	2

	S1: DDL S2: DML	
21	Define computer, draw block diagram of computer Ans. a machine or device that performs processes, calculations and operations based on instructions provided	2
22	Find output of the following code fragment <pre> Lst=[10,20,30] Lst.append(50) Lst.pop(0) print(Lst) Lst.pop() Lst.append(60) print(Lst) </pre> Ans. <pre> [20,30,50] [20,30,60] </pre>	2
23	Consider the table Employee {EId, EName, Age, Designation, Salary, Department}. Write the command to display EId, EName, Designation and Department of the employees whose name start with A and department is IT. Ans. SELECT EId, EName, Designation, Department FROM Employee WHERE EName LIKE "A%" AND Departement = "IT"; OR State True or False in reference with INSERT INTO command of SQL? i) INSERT is not a part of DDL? ii) While adding tuples using the INSERT command, one must specify values for all the attributes of the table. Ans i) True ii) False	2
24	Give two example each of Logical and Relational Operators in Python: Ans. Logical Operators : and , or , not Relational Operator >, <, <=, >=, == ½ mark for each correct operator	2
25	Rearrange the following units in increasing order MB bit TB byte KB Ans: bit, byte, KB, MB TB	2
	Part-C	
26	Classify the following software as System software and Application software a. Adobe PhotoShop	3

	b. Windows 10 c. Disk Defragmenter d. Ms-Word e. Google Chrome f. Avast Antivirus Ans: a. Adobe PhotoShop : Application software b. Windows 10 : System Software c. Disk Defragmenter : System Software d. Ms-Word: Application software e. Google Chrome: Application software f. Avast Antivirus: System Software ½ mark for each correct answer	
27	Evaluate (to true or false) each of the following expression: $14 \leq 14$ $14 < 14$ $-14 > -15$ $-15 \geq 15$ Ans: True, False, True, True	3
28	Write a python program to print the factorial of a number (Note: number should be entered by the user). Ans. <pre>n = int(input("Enter a positive integer: ")) fact = 1 for i in range(2, n + 1): fact *= i print(fact)</pre>	3
29	<p>The Air LMN Airlines Group want to train pilot. The trainees can take the headset home and train for as long as they need. This includes them familiarizing the aircraft and 360-degree walkarounds. What kind of emerging trend is useful here</p> <p>Ans. VR. A traditional VR home simulator generally consists of the same flight control setup</p> <p>OR</p> <p>CBSE has started to provide the digital copy of the marksheets online. Which technology can be used to provide the decentralized data sharing architecture? One in which safety and security of the transactions are ensured because all the members in the network keep a copy of the file and so it is not possible for a single member of the network to make changes or alter data. Can the same tech be applied in other areas? (If yes, Write the names of two such areas)</p> <p>Ans. Blockchain: The blockchain technology works on the concept of decentralized and shared database where each computer has a copy of the database. Yes, The blockchain technology can be used in diverse sectors, such as banking, media, telecom, travel and hospitality and other areas.</p>	3
30	A table PRODUCT has attributes PID, PNAME, PRICE, DESCRIPTION. Write commands for followings: - i) Make the PID attribute as the Primary key of this table.	3

	<p>ii) Change the data type of PRICE column to FLOAT(7,2) iii) Remove the attribute DESCRIPTION</p> <p>Ans i) ALTER TABLE PRODUCT ADD PRIMARY KEY(PID) ii) ALTER TABLE PRODUCT MODIFY PRICE FLOAT(7,2) iii) ALTER TABLE PRODUCT DROP DESCRIPTION</p> <p>OR</p> <p>Explain the concept of Primary Key, Candidate Key and Alternate Key. Ans. Candidate Key – A candidate key is an attribute or set of attributes that can uniquely identify a tuple. Primary Key: It is one of the keys selected from candidate keys that uniquely identify every row in that table. Alternate Key – One key is chosen as the Primary Key from candidate keys, and the remaining candidate keys, if exists, are called as the alternate keys.</p>	
	Part-D	
31	<p>Write a python program to create a dictionary of students to store the record of n students with marks obtained in 5 subjects for each student. Print the name and average marks in alphabetical order.</p> <p>Ans. dict_stu = dict() n = int(input("Enter number of students: ")) for i in range(n): sname = input("Enter names of the student: ") marks = [] for j in range(5): marks.append(float(input("Enter marks: "))) dict_stu[sname] = marks print("Dictionary of student:", dict_stu) sname_sorted = sorted(dict_stu.keys()) for sname in sname_sorted: print(sname, ":", sum(dict_stu[sname])/len(dict_stu[sname]))</p> <p>OR</p> <p>Explain the use of following methods: - a) keys() b) values()</p> <p>Ans - a)keys() - returns all the available keys x=dict(name="Aman",age=37,country="India") print(x.keys()) OUTPUT dict_keys(['country','age','name'])</p> <p>b)values()- returns all the available values x=dict(name="Aman",age=37,country="India") print(x.values())</p>	5

	OUTPUT dict_values(['India',37,'Aman'])																																												
32	Perform following operation using SQL commands 1. Create a database company 2. Open this database 3. create tables product with schema<productid,name,price> Suppose database administrator has inserted 33 records in product table then removed 4 records from it.what will be the cardinality and degree of product.	5																																											
33	<p>4. Write the queries (a) to (e) based on the table given below: Table: Professor</p> <table><tr><td>P_ID</td><td>PName</td><td>Department</td><td>Tinkha</td></tr><tr><td>1729</td><td>Ramanujam</td><td>MATHEMATICS</td><td>500</td></tr><tr><td>1803</td><td>Heigenberg</td><td>PHYSICS</td><td>150000</td></tr><tr><td>1704</td><td>Eular</td><td>MATHEMATICS</td><td>6000</td></tr><tr><td>1610</td><td>Neils B</td><td>CHEMISTRY</td><td>4000</td></tr><tr><td>1935</td><td>Allen T</td><td>MATHEMATICS</td><td>101010</td></tr></table> <p>a) Display details of all Professors From the Mathematics Department. b) Display the names of different departments without repetition. c) Show P_ID and Tinkha whose department is not chemistry. d) Add a new Professor with Id: 1995,Name: H. C. Verma, Tinkha:19999 e) What will be the output of the following Query: SELECT P_ID as Joining_Year, PName FROM Professor WHERE Tinkha<>6000 AND Department='Physics'; Ans. a) SELECT * FROM Professor WHERE Department='Mathematics'; b) SELECT DISTINCT Department FROM Professor; c) SELECT P_ID,Tinkha FROM Professor WHERE Department <> 'Chemistry'; d) INSERT INTO Professor (P_ID,PName,Tinkha) VALUES (1995, "H. C. Verma",19999); e)</p> <table><tr><td>Joining_Year</td><td>PName</td></tr><tr><td>1803</td><td>Heigenberg</td></tr></table> <p>OR Consider the table - TRANSACTION given below. Write the output for (i) to (iv) and write sql query for question (v)</p> <table><tr><td>TNO</td><td>ACNO</td><td>TTYPE</td><td>DOT</td><td>AMOUNT</td></tr><tr><td>143</td><td>12513</td><td>Deposit</td><td>2021-12-12</td><td>15000</td></tr><tr><td>149</td><td>12545</td><td>Withdraw</td><td>2022-01-17</td><td>12514</td></tr></table>	P_ID	PName	Department	Tinkha	1729	Ramanujam	MATHEMATICS	500	1803	Heigenberg	PHYSICS	150000	1704	Eular	MATHEMATICS	6000	1610	Neils B	CHEMISTRY	4000	1935	Allen T	MATHEMATICS	101010	Joining_Year	PName	1803	Heigenberg	TNO	ACNO	TTYPE	DOT	AMOUNT	143	12513	Deposit	2021-12-12	15000	149	12545	Withdraw	2022-01-17	12514	5
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145	12548	DD	2021-10-17	12514
153	14587	Withdraw	2019-15-22	12545
142	12546	Deposit	2019-07-12	25245

- Select * from TRANSACTION where TNO=142';
- Select ACNO, TTYPE, DOT from TRANSACTION where rTTYPE in ('DD','Withdraw');
- Select * from TRANSACTION where AMOUNT <= 1500 and AMOUNT >= 5000;
- Select distinct TTYPE from TRANSACTION;
- Two more rows are added to the above table. What will this change- degree or cardinality of the table?

Ans:

i.

TNO	ACNO	TTYPE	DOT	AMOUNT
142	12546	Deposit	2019-07-12	25245

ii.

ACNO	TTYPE	DOT
12545	Withdraw	2022-01-17
12548	DD	2021-10-17
14587	Withdraw	2019-15-22

iii

Empty set

iv

TTYPE
Deposit
Withdraw
DD

v.

Cardinality

1 mark for correct output. ½ mark for partial correct output.

Part-E

34

Ms. Anjana is a Super Store Manager. She often needs to maintain the records of products in the store and analyze data to plan her sales targets. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.

- Create a List named - 'price' with the following values 780, 390, 110,145, 224, 390, 165, 390, 444, 254, 77
- remove the last added element in the list.
- Delete the first occurrence of 390 from the list.
- Sort the elements of the list in descending order.

Ans:

4

	<p>a. price=[780, 390, 110,145, 224, 390, 165, 390, 444, 254, 77]</p> <p>b. price.pop()</p> <p>c. price.remove(390)</p> <p>d. price.sort(reverse=True)</p> <p>1 mark for each correct answer. ½ mark, for recognition of proper command/function.</p>	
35	<p>Hemachndra Rawat likes to play competitive video games and he also records his gaming session on twitch. One day his cousin Shrea calls him to help her out with a school project about esports. Here's the snippet of their conversation.</p> <p>Shrea: I would like to create a digital database about recent and popular game titles. Can you help me out with that?</p> <p>Hemachandra: Why not. Just let me know what the details are you looking for.</p> <p>Shrea: I want to know the names of popular games, their production companies, Genre, Download count, followers on social media etc.</p> <p>Hemachandra: I think I can work with that. I'll create a database and a few tables, you can populate them with the data later on.</p> <p>Shrea: Great. Can you tell me how to check the results?</p> <p>Hemachandra: Of course. I'll tell you how to create and manage your database. We will use MySQL for this purpose.</p> <p>They created the database and the tables and now Shrea is ready with some queries to test the database. Answer her query on Hemchandra's behalf:</p> <p>a) How do I list various databases in MySQL?</p> <p>b) Which command to use in order to see the table structure?</p> <p>c) Can I insert the values in a table without following the sequence?</p> <p>If yes, Can you tell me the syntax to insert (Overwatch, FPS, 3300000) in a table having 3 columns: (Name, Followers, Genre).</p> <p>If not, can you tell me the way/query to do so the right way?</p> <p>Ans.</p> <p>a) SHOW DATABASES;</p> <p>b) DESCRIBE <Name of the table></p> <p>c) Yes</p> <p>INSERT INTO (col1,col3,col2) VALUES(val1,val3,val2);1</p> <p>1+1+2=4 Marks</p>	4

KENDRIYA VIDYALAYA SANGATHAN JAIPUR REGION**Marking Scheme SET-5****CLASS: XI SESSION: 2022-23****INFORMATION PRACTICES (CODE 065)****TIME: 3 HRS****M M: 70****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
Internal choice is given in two questions (19 and 23).
5. Section C has 05 Short Answer type questions carrying 03 marks each.
Internal choice is given in two questions (29 and 30).
6. Section D has 03 Long Answer type questions carrying 05 marks each.
Internal choice is given in two questions (31 and 33).
7. Section E has 02 questions carrying 04 marks each.
One internal choice is given in Q 34 and 35 against part c only.
8. All programming questions are to be answered using Python Language only.

Q	Part-A	Marks
1	Software programs developed for performing particular tasks related to managing computer resources is called A. System software B. Utility software C. Application software D. Helper software Ans. C. Application software	1
2	Process of removing errors called A. Error Free B. Debug C. Syntax Error D. Exception Ans. B. Debug	1
3	Which of the following is not a function of the database? A. Managing stored data B. Manipulating data C. Security for stored data D. Analysing code Ans. D. Analysing code	1
4	What are the characteristics of big data? A. Volume & Velocity B. Variety & Veracity C. Value D. All of the above Ans. D. All of the Above	1
5	What is the DDL command out of the following to rename a column? A. Change Name	1

	B. Rename C. Modify Name D. Alter Name Ans. B. Rename	
6	which command we use can use To remove string "hello" from list1, Given, list1=["hello"] A. list1.remove("hello") B. list1.pop(list1.index("hello")) C. both a & b D. none of these Ans. C. both a & b	1
7	Which one of the followings is true in the context of Memory: - A. Secondary memory is faster than Primary memory B. All Primary memories are volatile in nature C. Secondary memory is portable D. Cache memory decreases the performance of the computer Ans. C. Secondary memory is portable	1
8	When using the SQL INSERT statement: A. rows can be modified according to criteria only. B. rows cannot be copied in mass from one table to another only. C. rows can be inserted into a table only one at a time only. D. rows can either be inserted into a table one at a time or in groups. Ans. D. rows can either be inserted into a table one at a time or in groups.	1
9	A relation is having 5 columns and 6 rows, find out the Degree and Cardinality of this Relation- A. 1 Degree and 1 Cardinality B. 6 Degree and 5 Cardinality C. 5 Degree and 6 Cardinality D. 2 Degree and 2 Cardinality Ans. 5 Degree and 6 Cardinality	1
10	Which of the following are examples of Proprietary Software? A. MS Office B. Talley C. Both A and B D. None Ans. C. Both A and B	1
11	Which is not a valid Data Type of SQL? A.int B. Varchar C. Date D. Time Ans. Time	1
12	What will be the output of the following Python code snippet? d1 = {"abc":234, "xyz":567} d2 = {"abc":123, "xyz":567} print(d1 > d2)	1

	<p>A. False B. True C. Error D. None</p> <p>Ans. C. Error</p>	
13	<p>SQL Statement used to extract data from one or more tables is</p> <p>A. Select B. From C. Where D. Describe / Desc</p> <p>Ans. A. Select</p>	1
14	<p>Which of the following is/are a need to use DBMS?</p> <p>A. Store large volume of data B. Effective way to retrieve meaningful data C. Avoids redundancy of data. D. All of the above.</p> <p>Ans. D. All of the above.</p>	1
15	<p>Which of the following(s) can be a composite key?</p> <p>A. Primary B. Alternate C. Candidate D. All of these</p> <p>Ans. D. All of these</p>	1
16	<p>Select correct pair of DML commands out of followings: -</p> <p>A. CREATE TABLE, INSERT B. DROP TABLE, SELECT C. DELETE, DROP TABLE D. INSERT, UPDATE</p> <p>Ans. D. INSERT, UPDATE</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>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.</p>	
17	<p>A: Jump statements in python are used to alter the flow of a control statement like you want to skip a part of a loop or a condition R: break, continue and pause are three jump statements available in a python. Ans: iii. A is True but R is False</p>	1
18	<p>A: In cloud computing, computer-based services are delivered over the Internet or the cloud, they are accessible from anywhere using any smart device. R: The cloud services comprise software, hardware (servers), databases, storage, etc. These services can be used as a pay per use basis, just like we use electricity. Ans. (i) Both A and R are true and R is the correct explanation for A</p>	1
	Part-B	
19	<p>Find out the error(s) in the following python code: print('enter a number between 1 and 9')</p>	2

	<pre> num=int(input())) if(num>9): print('the number is greater than 9') elif(num<0): print('the number is less than '0') else: print('good buoy/garl') Ans. errors in the code: print('enter a number between 1 and 9') num=int(input())) # remove extra closing bracket) if(num>9): print('the number is greater than 9') elif(num<0): print('the number is less than '0') # start and end quote utilization issue else: print('good buoy/garl') correct code: print('enter a number between 1 and 9') num=int(input()) if(num>9): print('the number is greater than 9') elif(num<0): print('the number is less than \'0\'') else: print('good buoy/garl') OR What will be the output of following program n=0 while n < 5: n+=1 if n==3: continue print (n,end=' ') print("Loop Over") Ans. 1 2 4 5 Loop Over </pre>	
20	<p>Choose an appropriate answer with respect to the following code snippet.</p> <pre> CREATE TABLE Staff (StaffID CHAR (5) PRIMARY KEY, FirstName VARCHAR (20) NOT NULL, LastName VARCHAR (15), IsQualified CHAR(4))); </pre> <p>i) What will be the degree of this table? ii) What does 'IsQualified' represent in the above code snippet?</p> <p>Ans. i) Degree:4 ii) 'IsQualified' is the name of an attribute/column in the table Staff.</p>	2
21	<p>Write down any four features of 5th generation computers</p> <p>Ans.</p>	2

	ULSI technology Development of true artificial intelligence. Development of Natural language processing. Advancement in Parallel Processing. Advancement in Superconductor technology.	
22	<p>Differentiate append() and extend() methods used with lists? Illustrate with an example of both?</p> <p>Ans. append() → it used to add a single element at the end of a list. example</p> <pre>Lst=[10,20,30] Lst.append(50) print(Lst)</pre> <p>extend() → used to add multiple elements at the end of a list or add a list at the end of an existing list example</p> <pre>Lst=[10,20,30] lst1=[40,50] Lst.extend(lst1) print(Lst)</pre>	2
23	<p>Consider the table Employee {EId, EName, Age, Designation, Salary, Department}. Write the command to display EId, EName, Age, Designation and Department of the employees whose Age is greater than 18 or department is not HR.</p> <p>Ans. SELECT EId, EName, Age, Designation, Department FROM Employee WHERE Age > 18 AND Department <> "HR";</p> <p>OR</p> <p>Name the command to add new tuples into a table? State the information one needs before adding a new tuple into a table?</p> <p>Ans.</p> <p>INSERT Command is used to add a new tuple.</p> <p>One must know the correct attribute name, their data types and constraints to add new tuples.</p>	2
24	<p>Differentiate between the interactive mode and script mode available with python IDLE.</p> <p>Ans: Interactive mode is where you type commands and they are immediately executed. Script mode is where you put a bunch of commands into a file (a script), and then tell Python to run the file.</p> <p>1 mark each for for correct explanation of Interactive mode and Script mode</p>	2
25	<p>Rearrange the following units in decreasing order MB bit TB byte KB</p> <p>Ans: TB MB KB byte bit</p>	2

	Part-C	
26	<p>Give an example of software for each the following purpose:</p> <ol style="list-style-type: none"> Typing a Novel Editing a Photograph Protecting computer system from virus Creating Graphs on available numeric data Joining a data source with a fixed letter format to create multiple letters Creating a poster <p>Ans:</p> <ol style="list-style-type: none"> Typing a Novel : Ms-Word, Page-Maker, Write etc (any one) Editing a Photograph: Photoshop Protecting computer systems from viruses : Avast, McAfee etc. (any one) Creating Graphs on available numeric data : Ms-Excel, Calc etc. (any one) Joining a data source with a fixed letter format to create multiple letters : Ms-word Creating a poster : Corel-Draw, Drawit , Ms-word etc. (any one) <p>½ Mark for each correct answer</p>	3
27	<p>Write python code to convert the time given in minutes into hours and minutes.</p> <p>Ans:</p> <pre>min=int(input("Enter time in minutes &")) h=min//60 m=min%60 print("Hours=", h) print("Minutes=", m)</pre>	3
28	<p>Write a python program to print the below shown pattern where no. of rows should be entered by the user (Note: no. of rows should be less than equal to 20 else show error).</p> <pre>* * * * * * * * * *</pre> <p>Ans.</p> <pre>n = int(input("Enter no. of rows (less than equal to 20): ")) if n < 0 or n > 20: print("Error! invalid range") exit(-1) for i in range(n): for j in range(i + 1): print("*", end=' ') print("")</pre>	3
29	<p>Mr. Anil Mohan is a computer teacher ,he want to explain about use of machine learning through some example.Suggest any 3 suitable example or application area where machine learning can be used.</p> <p>Ans. Traffic prediction, Product recommendation, Self driving cars, Stock market trading etc.</p> <p>OR</p>	3

	<p>The new addition of the Apple watch has a feature called “Crash Detection”. Which can send an SOS to the emergency contact and the emergency services. This can be a life saving feature for many unfortunate people who otherwise lose their lives due to the lack of immediate emergency support at the time of the need. The crash detection algorithm needs data to process and identify the situation. How do you think that data is provided to the algorithm? Can you list two such data/input providers in a wearable?</p> <p>Ans. A smart sensor is a device that takes input from the physical environment and uses built-in computing resources to perform predefined functions upon detection of specific input and then process data before passing it on.</p> <p>a) Gyroscope b) Heart Rate Monitoring c) SPO₂ d) Accelerometer</p>	
30	<p>Write down SQL commands for following tasks: - i) Open a database ii) Remove/Delete a database iii) Remove/Delete a table from a database</p> <p>Ans i) USE ii) DROP DATABASE iii) DROP TABLE</p> <p>OR</p> <p>Explain the concept of DDL, DML and DQL commands.</p> <p>Ans. A database is an organized collection of structured information, or data, typically stored electronically in a computer system. DDL: Data Definition Language consists of the SQL commands that can be used to define the database schema such as create, drop, alter and truncate etc. DML: Data Manipulation Language consists of the SQL commands that deal with the manipulation of data present in the database such as insert, update, delete etc. DQL: Data Query Language consists of a single SQL command i.e. select which is used for performing queries on the data within schema objects.</p>	3
	Part-D	
31	<p>Consider the below data, Write a python program to perform below tasks.</p> <pre>"Banana":60, "Apple":80, "Orange":55, "Pineapple":80</pre> <p>(a) Print the list of values (b) Remove 'Orange' from the dictionary (c) Create the copy of the dictionary (d) Update the price for Apple to 100 (e) Remove all the items from the dictionary</p>	5

	<p>Ans. fruits = {"Banana":60, "Apple":80, "Orange":55, "Pineapple":80}</p> <p># Ans (a) print(list(fruits.values()))</p> <p># Ans (b) fruits.pop("Orange") print("After Pop:", fruits)</p> <p># Ans (c) temp_dict = fruits.copy() print("Copy:", temp_dict)</p> <p># Ans (d) fruits["Apple"] = 100 print("After price update:", fruits)</p> <p># Ans (e) fruits.clear() print("Empty dictionary:", fruits)</p> <p>OR</p> <p>Explain the use of following methods: - a) items() b) update()</p> <p>Ans - a)items()- return the list with all dictionary keys with values. x=dict(name="Aman",age=37,country="India") print(x.items()) OUTPUT- dict_items([('country','India'),('age',37),('name','Aman')]) b)update()- used to change the values of a key and add new keys x=dict(name="Aman",age=37,country="India") d1=dict(age=39) x.update(d1,state="Rajasthan") print(x) OUTPUT-{'country':'India','age':39,'name':'Aman','state':'Rajasthan'}</p>	
32	<p>Table SALE PRODID QTY RATE AMOUNT 1 10 100 1000 2 5 50 250</p> <p>a. Write sql commands create above table SALE with suitable datatype b. Can we take the QTY column of SALE table as Primary Key? If no give reason c. Which column is best suitable for applying Primary Key? d. what is the cardinality of above table e. what is the degree of above table</p>	5
33	<p>Write the queries (a) to (e) based on the table given below: Course</p>	5

C_ID	F_ID	Cname	Fees
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Network Security	80000
C24	106	Human Biology	150000
C25	102	Computer Network	20000

- Display details of all courses having string 'comp'.
- Display C_ID and F_ID whose Fee is less than 50000.
- Show CName and Fee taken by Faculty 106 and 102.
- Add a new record in the table ('C26',NULL,'AI with Python',60000)
- What will be the output of the following Query:

SELECT DISTINCT F_ID FROM Course;

Ans.

- SELECT * FROM Player WHERE Gender='Male';
- SELECT Pname,Game FROM Player WHERE Rank BETWEEN 1 AND 3;
- SELECT PID,PName,Rank FROM Player

WHERE Game IN ('Boxing','Cricket');

- INSERT INTO Player VALUES ("P06", "Abhinav","Male","Shooting",1);
-

F_ID
102
104
106

OR

Consider the table - RESTAURANT given below. Write the output for (i) to (iv) and write sql query for question (v)

SNO	NAME	TYPE	DOA	COST
561	Chinese Bhel	Fast Food	2021-12-12	150
761	Veg Manchurian	Filler	2022-01-17	80
987	Veg Kofta	Main Course	2021-10-17	260
345	Malai Paneer	Main Course	2019-15-22	230
234	Rava Idli	Fast Food	2019-07-12	120

- Select * from RESTAURANT where SNO= 761;
- Select NAME, TYPE, DOA from RESTAURANT where cost in (230, 260, 300);
- Select * from RESTAURANT where NAME like = '%roti%';
- Select NAME from RESTAURANT where DOA between '2022-01-01 and '2022-12-31';
- Add one more row to the above table with the following data

	<p>SNO- 111; NAME: Tawa Roti, Cost : 20. Values for the other attributes not available</p> <p>i.</p> <table><tr><th>SNO</th><th>NAME</th><th>TYPE</th><th>DOA</th><th>COST</th></tr><tr><td>761</td><td>Veg Manchurian</td><td>Filler</td><td>2022-01-17</td><td>80</td></tr></table> <p>ii.</p> <table><tr><th>NAME</th><th>TYPE</th><th>DOA</th></tr><tr><td>Veg Kofta</td><td>Main Course</td><td>2021-10-17</td></tr><tr><td>Malai Paneer</td><td>Main Course</td><td>2019-15-22</td></tr></table> <p>iii Empty set</p> <p>iv</p> <table><tr><th>NAME</th></tr><tr><td>Veg Manchurian</td></tr></table> <p>v. insert into RESTAURANT values (111, 'Tawa Roti', Null, Null, 20); (or any other equivalent form of input) 1 mark for correct output. ½ mark for partial correct output.</p>	SNO	NAME	TYPE	DOA	COST	761	Veg Manchurian	Filler	2022-01-17	80	NAME	TYPE	DOA	Veg Kofta	Main Course	2021-10-17	Malai Paneer	Main Course	2019-15-22	NAME	Veg Manchurian	
SNO	NAME	TYPE	DOA	COST																			
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Malai Paneer	Main Course	2019-15-22																					
NAME																							
Veg Manchurian																							
	Part-E																						
34	<p>Ms. Vijeta is a climatologist. She often needs to maintain the records of temperature of the area under study and analyze data to forecast weather. She has decided to use technology for the same. Help her to perform the following task (a) to (d) using lists in Python programming language.</p> <p>a. Create a list named 'temp', with the following values : 27,29,33,34,28,26,27,28,30,31,32,28</p> <p>b. Reverse the order of the elements in he list</p> <p>c. Display the first three elements of the list.</p> <p>d. Add 32 as a new element at the last of list</p> <p>Ans:</p> <p>a. temp=[27,29,33,34,28,26,27,28,30,31,32,28]</p> <p>b. temp.reverse()</p> <p>c. temp[4]</p> <p>d. temp.append(34)</p> <p>1 mark for each correct answer. ½ mark, for recognition of proper command/function.</p>	4																					
35	<p>A shop called Rainbow Garments that sells school uniforms, maintains a database SCHOOL_UNIFORM. It consisted of two relations — UNIFORM and PRICE. They made UniformCode as the primary key for UNIFORM relations. Specify SQL queries to rectify the following anomalies.</p> <p>a) There's a new product, a Handkerchief. The colors are Red and White. The Price is Rs. 100. The PID is 'hkcf2004' and 'hkcf2005' respectively. Insert the above data in the Relation Product(PID, Name, Color, Size, Price).</p> <p>b) Write down the query to check the table contents.</p>	4																					

	<p>c) Write down the query to display all the products with size “S” and color “Blue”.</p> <p>Ans.</p> <p>a) INSERT INTO Product (PID, Name, Color, Price) VALUES('hkcf2004','Handkerchief', 'Red',100);</p> <p>INSERT INTO Product (PID, Name, Color, Price) VALUES('hkcf2005','Handkerchief', White,100);</p> <p>b) SELECT * FROM Product;</p> <p>c) SELECT * FROM Product WHERE Size='S' AND color='Blue';</p> <p>2+1=1 Marks</p>	
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