1. Networking in Computers
WORKSHEET 1

Name: _____ Date: _____

A. Multiple choice questions

1. There are how many types of NIC?
   (a) One   (b) Two
   (c) Three   (d) Four

2. Which of the following distributes network connection across several devices?
   (a) NIC   (b) Switch
   (c) Hub   (d) Router

3. Which of the following connects multiple computers to a network?
   (a) NIC   (b) Switch
   (c) Hub   (d) Router

4. Which device links LAN with internet connection?
   (a) NIC   (b) Switch
   (c) Hub   (d) Router

5. Which of the following is ideal for connecting a few individuals?
   (a) PAN   (b) LAN
   (c) MAN   (d) WAN

B. Fill in the blanks

Healthy and well	Chip	Star	Bus
	Network Interface Card		

1. ………………..Area Network is the most basic type of network.
2. Main cable in bus network is called ……………...
3. A central hub is used in ………………….topology.
4. Full form of NIC is …………………………….
5. A computer connected to a network is also called a workstation or ……………………

C. Write T for True and F for False

1. MAC address of a computer is unique in a network.
2. NIC can support data transfer up to 10,000 Mbps.
3. Wired NIC is present in the motherboard.
4. A switch is less advanced than hub.
5. A modem connects a computer to telephone line.

D. Answer these questions

1. Which are the key benefits of a network of computers?
2. Make a list of different types of network.
3. What are the pros and cons of bus topology?
4. What are the benefits of star topology?
5. What are the disadvantages of star topology?
6. What are the pros and cons of ring topology?
7. What are the pros and cons of tree topology?

1. Networking in Computers
Answer Keys

A. 1. (b) Two   2. (c) Hub
    3. (b) Switch   4. (d) Router
    5. (a) PAN

B. 1. Personal   2. Bus
    3. Star   4. Network Interface Card,
    5. Node

C. 1. True   2. False
    3. True   4. False
    5. True

D 1. Following are the key benefits of a network of computers:
    • File sharing
    • Resource sharing
    • Sharing a single network connection
    • Increasing storage capacity
    • Improving communication
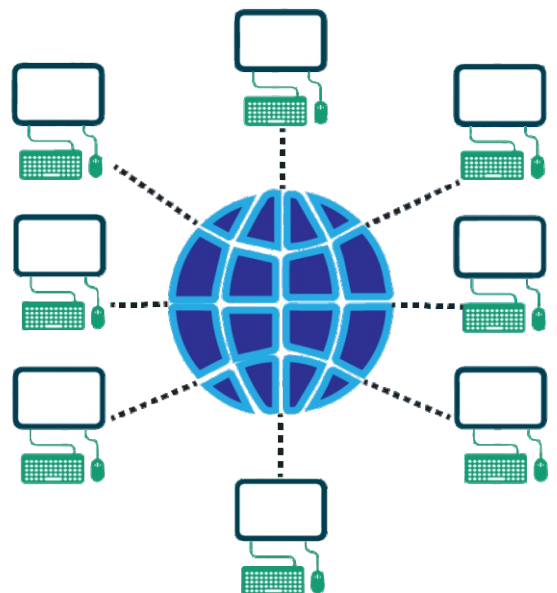   2. Following are different types of network:
    • Personal Area Network (PAN)
    • Local Area Network (LAN)
    • Metropolitan Area Network (MAN)
    • Wide Area Network (WAN)
   3. Pros of bus topology:
    • A shorter cable length is required.
    • Many computers can be connected together.
    Cons of bus topology:
    • Entire network goes down if main cable breaks.
    • Difficult to isolate problem when the entire network is down.

4. Following are the advantages of star topology:
    • Computers are easily connected.
    • Data transfer between nodes is quick.
    • It is easy to detect fault.
    • It is easy to remove a component from the network.

5. Following are the disadvantages of star topology:
    • Nodes become inoperable in case the central communication point fails.
    • A longer cable is required for this topology.

6. Pros of ring topology: Cable connects two computers and hence data transfer is faster. This increases worker tonnage.

   Cons of ring topology: A cable or device failure breaks the loop and can slow down the entire network.

7. Pros of tee topology:
    • It is easy to identify a faulty device.
    • It is easy to expand the network.
   Cons of tree topology:
    • Entire segment fails in case of failure of a common cable.
    • It is more difficult to configure than other topologies.

2. Computer Crime and Ethics
WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. AcAfee makes which of the following?
   (a) Trojan horse   (b) Worm
   (c) Antivirus   (d) Virus
2. Installing which of the following is not a good idea?
   (a) Antivirus   (b) Firewall
   (c) Latest version of a software   (d) Plugins
3. Which of the following is not an antivirus?
   (a) Norton   (b) Chrome
   (c) Kaspersky   (d) Quick Heal
4. Which is the most expensive computer virus till date?
   (a) My Doom   (b) Honey Bunny
   (c) Trojan Horse   (d) Glowing Worm
5. What does the firewall do?
   (a) Destroys all viruses   (b) Destroys all Trojan horses
   (c) Destroys all worms   (d) Adds another layer of defense

B. Fill in the blanks

Trojan horse	Pop up ads	Spam	IP
	Pharming		

1. ……………..comes disguised as useful utilities and destroys the computer.
2. Firewall is used for filtering out unwanted ………………addresses.
3. Adware comes in the form of ………………
4. An unwanted message in e-mail is called ……………………
5. ……………redirects a website's traffic to a fake website.

C. Write T for True and F for False

1. It is ok to send unsolicited emails to hundreds of recipients from your mail ID.
2. Phishing involves getting highly useful information from a website.
3. An offensive popup ad is called spyware.
4. Worms destroy the physical component of a computer.
5. Spam is also sent through messaging apps.

D. Match Columns

Logo	Name
	(a) AVG
	(b) Malwarebytes
	(c) McAfee
	(d) Bitdefender
	(e) Norton

E. Answer these questions

1. Write any five commandments defined by the Computer Ethics Institute.
2. What do you understand by virus?
3. How does the antivirus software work?
4. How will you defend yourself from spams?
5. What is the difference between phishing and pharming?
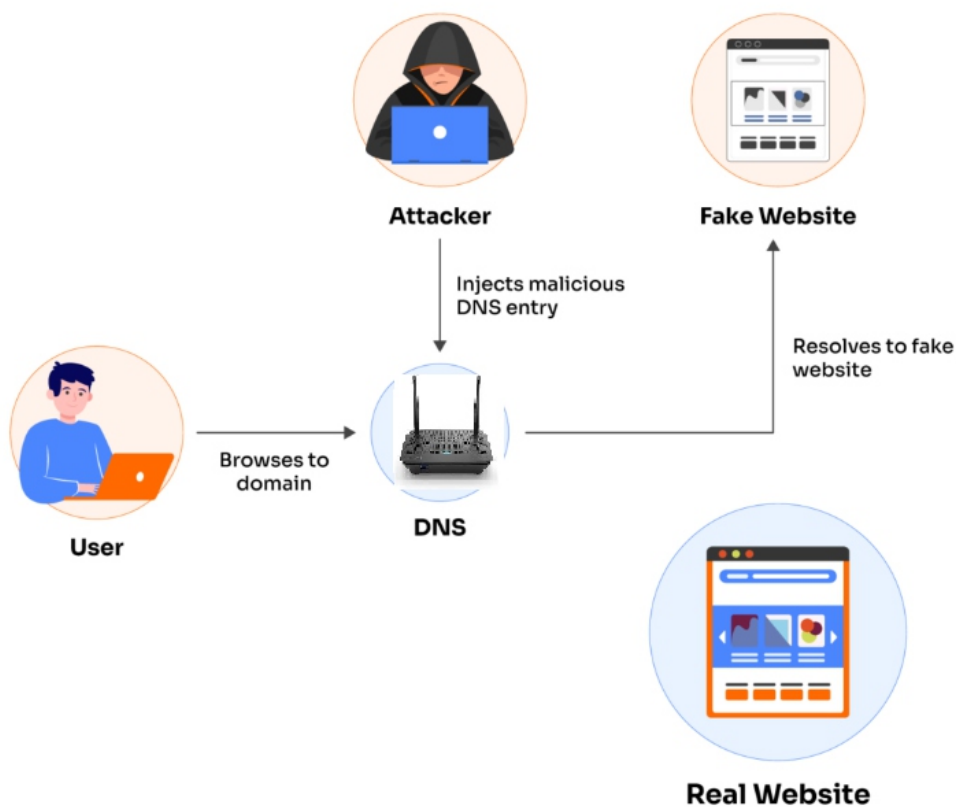
2. Computer Crime and Ethics
Answer Keys

A. 1. (c) Antivirus   2. (d) Plugins

     3. (b) Chrome   4. (a) My Doom

     5. (d) Adds another layer of defense

B. 1. Trojan horse   2. IP

     3. Pop up ads   4. spam

     5. Pharming

C. 1. False   2. False

     3. True   4. False

     5. True

D   (1) c, (2) d, (3) e, (4) a, (5) b

E   1. Following are five commandments out of 10 defined by the Computer Ethics Institute:
- You shall not use a computer to harm other people.
- You shall not interfere with other people's computer work.
- You shall not snoop around in other people's files.
- You shall not use a computer to steal.
- You shall not use a computer to bear false witness.

     2. A malicious programme that corrupts programme files is called a virus. Viruses corrupt or destroy data storage. They can render the entire computer system inoperable and may interfere with normal operations of a computer.

     3. The antivirus software works in two ways. It filters out any suspicious file or message or website. It destroys a virus if it enters a computer system.

4. Follow these steps to defend from spams:
   • Never give out or post your email address publicly.
   • Think before you click.
   • Never reply to spam messages.
   • Install spam-filtering tools and antivirus software.
5. Phishing is an attack that tries to steal your sensitive information such as bank details and personal information. Pharming is a tool that directs a website to a fake website which is often harmful.

3. Attributes in HTML

WORKSHEET 1

Name: _____ Date: _____

A. Multiple choice questions

1. Which of the following applies to only one element on a webpage?
   - (a) Element selector
   - (b) ID selector
   - (c) Group selector
   - (d) Universal selector

2. CSS is mainly used for which purpose?
   - (a) To give attributes to an element
   - (b) To change functionality of an element
   - (c) To change style of an element
   - (d) To insert content in an element

3. Which symbol is written before ID while declaring style?
   - (a) #
   - (b) $
   - (c) %
   - (d) @

4. A plus (+) sign is used for which type of selector?
   - (a) Element selector
   - (b) Class selector
   - (c) Group selector
   - (d) Universal selector

5. Style sheet can be inserted into HTML in how many ways?
   - (a) Two
   - (b) Three
   - (c) Four
   - (d) Five

B. Fill in the blanks

Two	Universal	Class	All
	Cascading		

1. There are ……………methods to attach external style sheet to an HTML file.
2. Element selector allows to apply style to ………………elements of one type.
3. ………………selector applies to all the elements in a website.
4. ……………….selector can be applied to more than one type of element on a page.
5. CSS stands for ……………..Style Sheet.

C. Write T for True and F for False

1. A style declaration for <p> will apply to all paragraphs on a page.
2. A style declaration for <h1> will apply all the headings on a page.
3. A class name is followed by hash (#) symbol.
4. A universal selector is followed by plus (+) symbol.
5. An ID name is followed by hash (#) symbol.

D. Match Columns

Column A	Column B
(1) #magic	(a) Matches with heading that is a direct child of a div
(2) .bullet	(b) Matches a p with class
(3) p.beauty	(c) matches a ul when cursor hovers over it
(4) div > h	(d) matches an element with class
(5) ul : hover	(e) matches an element with id

E. Answer these questions

1. What is the effect of following line of code on display?

   <p align="centre" color ="blue">A quick brown fox jumps over the lazy dog</p>
2. What is the effect of following line of code on display?
3. What do you understand by class selector?
4. What do you understand by inline style? What is its major drawback?
5. What is embedded style? What are pros and cons of embedded style?

3. Attributes in HTML
Answer Keys

A. 1. (b) ID selector   2. (c) To change style of an element
    3. (a) #   4. (d) Universal selector
    5. (b) Three

B. 1. Two   2. all
    3. universal   4. class
    5. cascading

C. 1. True   2. False
    3. False   4. True
    5. True

D   (1) e, (2) d, (3) b, (4) a, (5) c

E   1. The paragraph will be centrally aligned and font coloru will be blue.
    2. An element selector applies to all elements of the same type on a webpage but an ID selector only applies to the element with particular ID. Moreover, an ID is unique for a page.
    3. A class selector applies to any element with the declared class. A class can be applied to any element. For example; a class for particular color of font can be applied to any element such as p, ul or ol.
    4. When style declarations are written within the element tag in HTML file, it is called inline style. The biggest drawback of inline style is complexity when you want to change style, you will have to change it separately for every page.
    5. When style declarations written inside head section, it is called embedded style. Embedded style means there is no need for writing style in every line on a page, but changing style means changing it on every page.

4. Developing Interactive Web Pages

WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. Which of the following is displayed to ask user to enter a value?
   - (a) Script
   - (b) Prompt
   - (c) Value
   - (d) Welcome message

2. Double slash (//) is used for which of the following in JavaScript?
   - (a) Single line comment
   - (b) Double line comment
   - (c) Triple line comment
   - (d) Multiple line comment

3. Variable is declared in which line of JavaScript code?
   - (a) First
   - (b) Second
   - (c) Third
   - (d) Last

4. There are how many types of variables in JavaScript?
   - (a) One
   - (b) Two
   - (c) Three
   - (d) Four

5. To String () is used for which of the following conversions?
   - (a) String to number
   - (b) String to Boolean
   - (c) Boolean to string
   - (d) Number to string

B. Fill in the blanks

Variables	Lost	Interrupt	Script
	One		

1. Values are stored in …………………
2. A ……………is a programmed that runs embedded in a webpage to accomplish a specific task.
3. Variables can hold …………..value at a time.
4. When new value is entered, the previous value is permanently ………………
5. An event is an ………………raised by user action or software.

C. Write T for True and F for False

1. JavaScript adds interactivity to a webpage.
2. Mouse click is an example of event handling.
3. A value is permanently stored in variable.
4. Inner HTML is the area between open

D. Answer these questions

1. Make a list of mouse events.
2. What do you understand by event?
3. What do you understand by event handling?
4. What is the difference between on Mouse Enter and on Mouse Out?
5. What is the effect of following lines of code?

4. Developing Interactive Web Pages
Answer Keys

A. 1. (b) Prompt

    2. (a) Single line comment

    3. (a) First

    4. (c) Three

    5. (d) Number to string

B. 1. variables

    2. script

    3. one

    4. lost

    5. interrupt

C. 1. True

    2. False

    3. False

    4. True

    5. True

D 1. Following are various mouse events:

    • onMouseEnter

    • onMouseOut

    • onMouseDown

    • onMouseUp

    2. An interruption caused by user action or a software application is called event. A button click, a key pressed and mouse click are examples of events.

    3. First identify the event you want to handle and then write a function to run in response to that event. The event is associated with a function that is called when the event occurs.

    4. When mouse pointer passes over an object such button or hyperlink, it is called onMouseEnter. When mouse pointer goes away from an object, it is called onMouseOut.

5.
```html
<html>
    <head>
        <script language="JavaScript">
            function do_enter()
            {
                    mytext.color="red"
            }

            function do_out()
            {
                    mytext.color="green"
            }
        </script>
    </head>
    <body>
    <FONT ID=mytext size=7 color=green onmouseenter="do_enter()"
onmouseout="do_out()">Welcome
    </FONT>
</body>
</html>
```

When mouse pointer comes over and element with ID mytext, font color becomes red. When mouse pointer goes away from the same element, font color becomes green.

5. Database Management System

WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. Which of the following is a table's degree?

    (a) Number of cells   (b) Number of rows

    (c) Number of columns   (d) Size of table

2. Which of the following is a table's cardinality?

    (a) Number of cells   (b) Number of rows

    (c) Number of columns   (d) Size of table

3. A table can have how many primary keys?

    (a) Only one   (b) Only two

    (c) Only three   (d) Multiple

4. A table with a foreign key is also known as which of the following?

    (a) Foreign table   (b) Child table

    (c) Parent table   (d) Sibling table

5. MS Access comes as part of which package?

    (a) Windows   (b) Mc OS

    (c) MS Word   (d) MS Office

B. Fill in the blanks

Database Management System	Table	OLE
Relational Database Management System		Raw

1. The full form of DBMS is …………………………………………

2. The full form of RDBMS is ………………………………………….

3. ……………….Object stores data from other software such as MS Word or MS Excel.

4. A ……………is a collection of related data.

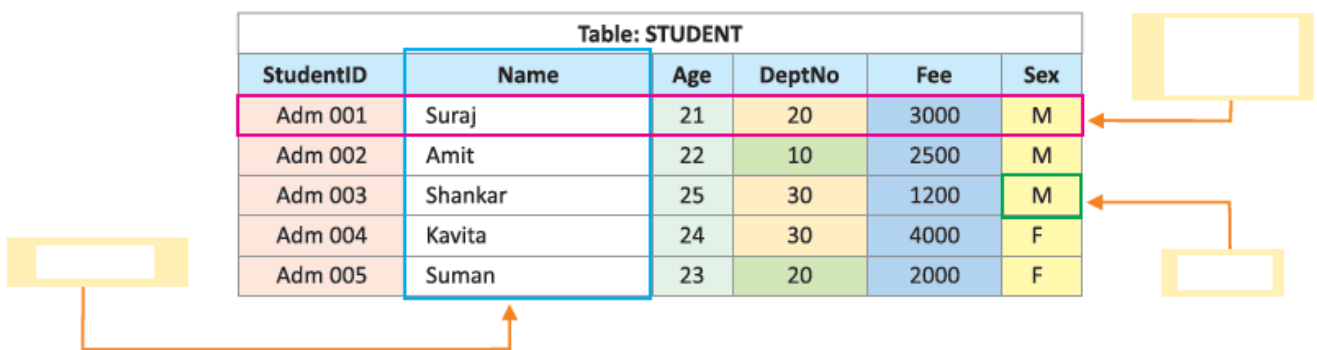5. A data is a ……………….fact with incomplete meaning.

C. Write T for True and F for False

1. Storing data manually was time consuming.
2. Computers have made is more difficult to manage data.
3. DBMS defines and structures data.
4. DBMS makes it tough to manipulate data.
5. DBMS makes it easy to retrieve data.

D. Correctly label blank boxes (with yellow boundary) in following figure.

Table: STUDENT					
StudentID	Name	Age	DeptNo	Fee	Sex
Adm 001	Suraj	21	20	3000	M
Adm 002	Amit	22	10	2500	M
Adm 003	Shankar	25	30	1200	M
Adm 004	Kavita	24	30	4000	F
Adm 005	Suman	23	20	2000	F

E. Answer these questions

1. Make a list of different types of database management system.
2. What was the need for a database management system?
3. Write any four advantages of database system.
4. What do you understand by security of data?
5. What is the use of DBMS in banking and finance?

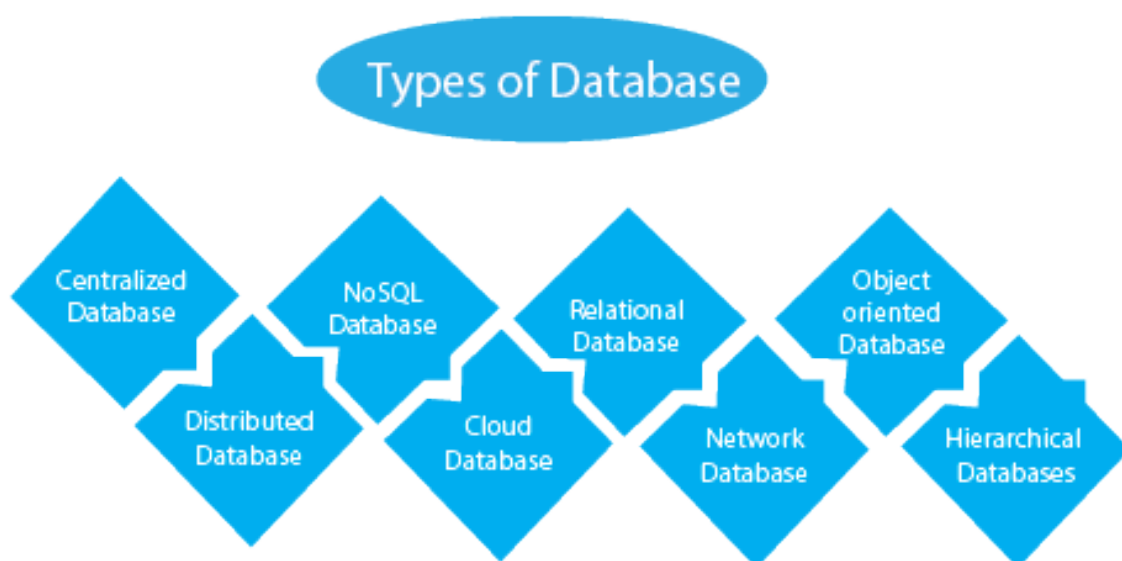# 5. Database Management System
Answer Keys

A. 1. (c) Number of columns
    2. (b) Number of rows
    3. (a) Only one
    4. (b) Child table
    5. (d) MS Office

B. 1. Database Management System,
    2. Relational Database Management System
    3. OLE
    4. table
    5. raw

C. 1. True
    2. False
    3. True
    4. False
    5. True

D   1. Do it yourself

E. 1. Following are different types of database management system:
      • Hierarchical database systems
      • Network database systems
      • Object-oriented database systems
      • Relational database systems
    2. Traditionally data was stored manually in files and folders. Updating, and retrieving data from such system was time consuming and cumbersome. Hence, a need for database management system was felt.

3. Four advantages of database system are as follows:
   - Easy manipulation
   - Faster information retrieval
   - Recovery
   - Security
4. Security of data means there cannot be unauthorized access to database. Only people with proper permission should be allowed to access database. For this, DBMS uses various features such as encryption, authentication, authorization and views.
5. Banking and finance use database for storing various information such as sales, purchase of stocks and bonds, maintenance of customer accounts, loans and other transactions. A suitable DBMS also keeps sensitive information safe and out of reach of unauthorized people.

6. MS Access

WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. MS Access stores data in which form?

   (a) Tabular form   (b) List form

   (c) Ordered list   (d) Unordered list

2. Which of the following data can only be sorted in alphabetical order?

   (a) Marks obtained by different students (b) Prices of different medicines

   (c) Names of students in a class   (d) Runs scored by Kohli

3. Which of the following data can only be sorted in numerical order?

   (a) Marks obtained by different students

   (b) Market share of different brands of cell phone

   (c) Names of students in a class

   (d) Runs scored by Kohli

4. Relationship can be established between how many tables?

   (a) Two   (b) Three

   (c) Four   (d) Multiple

5. Advanced filter allows you to add how many criteria for filtering data?

   (a) Two   (b) Three

   (c) Four   (d) Multiple
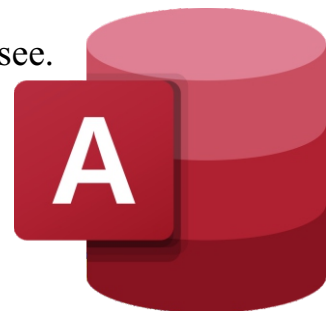
B. Fill in the blanks

Filter	New Record	Client server
Delete	Tell Me	

1. ………………allows you to see only the information you want to see.
2. MS Access is easier than ……………………database to use.
3. MS Access has ………………..feature for assistance.
4. Click ………………..button to add a new record.
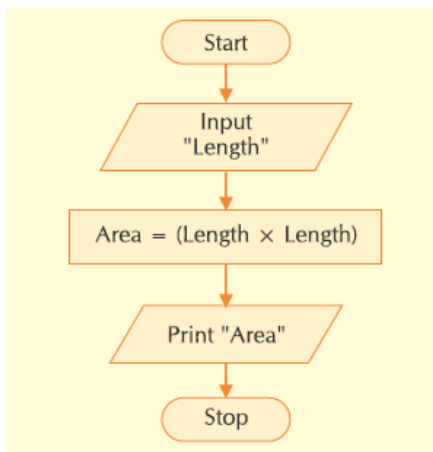5. Click ……………..button to delete a record.

C. Write T for True and F for False

1. MS Access is not useful for managing huge amount of data.
2. MS Access allows publishing webpages.
3. You cannot create custom solution by using MS Access.
4. Report from MS Access can be published in PDF format.
5. You can create a custom filter in MS Access.

E. Answer these questions

1. You are given a table that contains names of students in hobby class. How will you sort the names in alphabetical order if the data is in MS Access?
2. You are given a data in MS Access that contains names of students in different classes in your school. How will you apply filter to see names of only those students who are in class 6?
3. You are given a data in MS Access that contains names of brands of ice-cream, chocolate, pastry, cookies and candies in different flavours. How will you apply filter to see brands of only pineapple flavoured candies?
4. What is the similarity between filtering and criteria while creating a query?
5. What is the benefit of referential integrity in database?

6. MS Access
Answer Keys

A. 1. (a) Tabular form
    2. (c) Names of students in a class
    3. (d) Runs scored by Kohli
    4. (d) Multiple
    5. (d) Multiple

B. 1. Filter
    2. client server
    3. Tell Me
    4. New Record
    5. Delete

C. 1. True
    2. True
    3. False
    4. True
    5. True

D   1. This can be done in a table as follows:

    In the navigation tab, double-click on the required table in the Tables section. In the table, select the desired field name (Name of Student) by clicking the drop-down menu.
    Select: Sort A to Z for ascending alphabetical order.
    Select: Sort Z to A for descending alphabetical order.

    2. Follow these steps for this purpose:
    • Click the dropdown arrow next to the field for class name.
    • Select Class 6 from dropdown list.
    • Click OK
    This will only show names of students who are in class 6

3. You need to use advanced filter for this.
   - In the Sort & Filter group, select Advanced Filter/Sort from the Advanced dropdown menu.
   - In the Filter editor, double click the fields candies and pineapple-flavoured.
   - Type appropriate criteria in the Criteria section below each field.
   - Click the Advanced dropdown and select Apply Filter/Sort option.
   - This will show brands of only pineapple flavoured candies.
4. Adding a criterion means applying a filtering rule. For example; if you want to display only those brands of ice-creams which are mango flavoured, you need to add two criteria for filtering. On criterion would be ice-creams and another would be mango flavoured.
5. Referential integrity has two key benefits. One of them is, a particular data in a table correctly matches with a particular data in another table. For example; if a table contains students' names and another table contains subjects opted by students; referential integrity ensures correct list of opted subjects by each student. Another benefit is prevention of accidental deletion of data. If data in two tables are related to each other, data from parent table cannot be deleted without deleting data from daughter table.

7. Turtle Programming in Python
WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. What is Turtle in Python?
   - (a) A pre-installed library
   - (b) On screen pen
   - (c) Both 'a' and 'b'
   - (d) A block of code

2. Python can handle how many types of files?
   - (a) One
   - (b) Two
   - (c) Three
   - (d) Multiple

3. The code t.forward (100) will move turtle by how many points?
   - (a) 5 px
   - (b) 10 px
   - (c) 20 px
   - (d) 100 px

4. The code t.left(45) will turn the turtle in which direction?
   - (a) Clockwise 45 degree
   - (b) Anticlockwise 45 degree
   - (c) Clockwise 45 px
   - (d) Anticlockwise 45 px

5. Which is the slowest speed of turtle?
   - (a) Zero
   - (b) One
   - (c) Three
   - (d) Five

B. Fill in the blanks

Four	Left	Forward
	Right	Backward

1. A turtle can move in ……………different directions.
2. Code t……………………means moving from left to right.
3. Code t…………………..means moving from right to left.
4. Code t……………..turns the turtle in clockwise direction.
5. Code t……………..turns the turtle in anticlockwise direction.

C. Write T for True and F for False

1. Turtle is part of the original LOGO programming language.
2. Turtle is used for creating music in Python.
3. Code t.bgcolor (<color>) changes the color of shape created by turtle.
4. Code t.pencolor (<color>) changes the color of edge of shape created by turtle.
5. You can also change pen size in turtle.

D. Answer these questions

1. Write the code for making an equilateral triangle by using turtle.
2. Following figure shows a code. What is the meaning of this code?
3. Following figure shows a code. Write the meaning of each step of this code.
4. Following figure shows a code. What is the meaning of this code?
5. What is the difference between turtle.clear() and turtle.reset() ?

7. Turtle Programming in Python

Answer Keys

A. 1. (c) Both 'a' and 'b'

2. (b) Two

3. (d) 100 px

4. (b) Anticlockwise 45 degree

5. (b) One

B. 1. four

2. forward

3. backward

4. right

5. left

C. 1. True

2. False

3. False

4. True

5. True

D   1. Following is the code for making an equilateral triangle:

```
from turtle import *
 import turtle
tur = turtle.Turtle()
tur.forward(100)
tur.left(120)
tur.forward(100)

tur.left(120)

tur.forward(100)
tur.clear()
 turtle.done()
```

2.
```python
import turtle
turtle.forward(100)
turtle.stamp()
turtle.forward(100)
```
This code is using stamp function in turtle. In step 1: a horizontal line of 100 px is drawn and same line is repeated ahead of it.

3.
```python
tur1.width(5)
tur1.color("red")
tur1.circle(50)
```

Step 1: Turtle size or thickness of line is declared.

Step 2: Turtle color (line colour) is declared.

Step 3: A circle is drawn.

4.
```python
tur1=turtle.Turtle()
tur2 = tur1.clone()
```

Step 1: Shape 1 is defined.

Step 2: A clone of shape 1 is declared.

5. Code turtle.clear () removes drawing from canvas but does not affect declared properties of turtle in use. Code turtle.reset () removes drawing from canvas and also restores default setting of turtle.

8. Code with Python Turtle: Control Statements

WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. There are how many conditional statements in Python?

   (a) 3   (b) 4

   (c) 5   (d) 6

2. If statement checks how many conditions to be true in order to execute a programme?

   (a) One   (b) Two

   (c) Three   (d) Any number more than one

3. If else statement checks how many conditions to be true in order to execute a code?

   (a) One   (b) Two

   (c) Three   (d) More than two

4. There are how many loops in Python?

   (a) Two   (b) Three

   (c) Four   (d) Multiple

5. Python uses which of the following to indicate a block of code.

   (a) Line break   (b) Paragraph

   (c) Hash   (d) Indentation

B. Fill in the blanks

Spaces	True, false	Variable
	Single	For

1. Indentation means …………..at the beginning of a line of code.
2. A Python ………………is a symbolic name that refers to an object.
3. The …………….loop is used to iterate over a sequence.
4. Short hand if…else statement is written in a ……………..line.
5. Conditions are assessed as ……..or………………

C. Write T for True and F for False

1. Conditional statement checks if the given condition is true or false.
2. If the condition in if statement is false, the code does not execute.
3. If the condition in if….else statement is false, the code does not execute.
4. Short hand if statement has same effect as if statement.
5. Short hand If….Else statement has different effect than if…Else statement.

D. Answer these questions

1. Following figure shows code for if statement. Write the same code as short hand if statement.

```
num = 7
if num > 0:
    print(num, "is a positive number.")
```

2. Following figure shows a code. This is which type of loop, and what is the result of this code?
3. Following flow chart shows which type of loop? Explain.
4. How are variables in Python different from those in other programming languages?
5. Following figure shows a code. What is the final output of this code?

8. Code with Python Turtle: Control Statements

Answer Keys

A. 1. (d) 6
    2. (a) One
    3. (b) Two
    4. (b) Three
    5. (d) Indentation

B. 1. spaces
    2. variable
    3. for
    4. single
    5. true, false

C. 1. True
    2. True
    3. False
    4. True
    5. False

D 1.
```
num = 7
if num > 0: print(num, "is a positive number.")
```
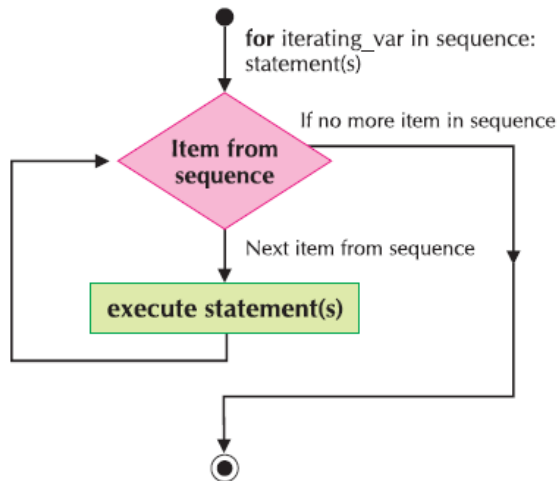
   2.
```
num_of_times = 1

while num_of_times <= 5:

print("Hello, world!")

num_of_times += 1
```

   This is while loop.
   Result of code: It will print "Hello, world!" five times.

3.

This figure shows for loop. This loop is used for iterating from a list, i.e. sort of counting from a list.

This code will look for first item in a list and display the first item.

After that, the code will look for next item in the list and display; following by looking for the next till it reaches and displays the last item.

4. In many programming languages, variables are strictly typed. It means that a variable is declared to have a specific data type at the beginning and any value assigned to it during its lifetime must be of that type. But Python has no such restriction on variables. In Python, a variable can be assigned one type and then reassigned another type of value.

5.

```python
even_list = []
for item in range(1, 11):
    while item % 2 == 0:
        even_list.append(item)
        break
print("Even Numbers: ", even_list)
```

Output is as follows:

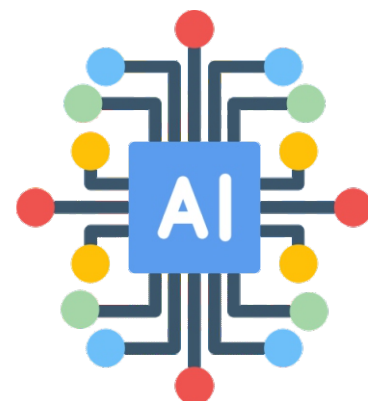Even numbers: [2, 4, 6, 8, 10]

9. AI: Challenges and Applications
WORKSHEET 1

Name: _____   Date: _____

A. Multiple choice questions

1. AI can be possibly developed in which of the following?
   (a) Software   (b) Machine
   (c) Both 'a' and 'b'   (d) Any living being

2. Which of the following is not a drawback of AI?
   (a) Unethical data processing   (b) Replacing humans from jobs
   (c) Lack of cognitive abilities   (d) Need of huge computing power

3. Facial recognition can help to enhance which of the following?
   (a) Security   (b) Friendship
   (c) Business transaction   (d) Ticket booking

4. Which of the following is now being used by many e-commerce companies to give product recommendations to users?
   (a) Robot   (b) Drone
   (c) Chatbot   (d) Voice assistants

5. Deep Blue was which type of AI system?
   (a) Reactive   (b) Limited memory
   (c) Theory of mind   (d) Self-awareness

B. Fill in the blanks

Reactive machines	Final	Limited Memory
More	Concept	

1. ……………….are the most primitive AI system.
2. Almost all modern AI systems are powered by ……………..AI.
3. Theory of Mind system is still in ……………..stage.
4. Self-awareness model is the ………………stage of AI development.
5. Humans are …………efficient than AI in differentiating a bus from a truck.

C. Write T for True and F for False

1. Most of the people are yet to trust AI.
2. AI needs huge computing power.
3. AI has reached a level where its intelligence is almost same as that of humans.
4. Data security is a big concern in AI.
5. AI has no bias.

D. Answer these questions

1. Why is it difficult to ensure data security in AI?
2. What causes bias in AI?
3. When you are watching videos on YouTube, how does AI come into play to recommend videos for you?
4. How does AI benefit the users of Google Maps?
5. What are the shortcomings of robots currently in use? How is AI going to improve upon it?

9. AI: Challenges and Applications
Answer Keys

A. 1. (c) Both 'a' and 'b'
2. (c) Lack of cognitive abilities
3. (a) Security
4. (c) Chatbot
5. (a) Reactive

B. 1. Reactive machines
2. Limited Memory
3. concept
4. final
5. more

C 1. True
2. True
3. False
4. True
5. False

D. 1. AI tools are used by companies and governments because they need to earn profit and get power. But in order to cut costs, they use AI which is globally networked. Due to presence of AI on global network, it is difficult to regulate. Hence, data security in AI is difficult to ensure.
2. AI systems are being trained by feeding data from humans. Human beings involved in training AI system have their own biases on the basis of race, gender, community, nationality, etc. This logically leads to a scenario in which AI systems trained on such biases will always have biases.
3. AI system looks for clues in videos watched by you. It looks for type of videos, language of videos and topics of your interest. Based on these observations, the AI system recommends next videos for you.

4. When a driver uses Google Maps to find directions to his destination, Google Map uses AI to understand current traffic pattern. Based on presence of congestion on a particular route, the AI looks for alternate routes with less congestion and recommends a better route to the driver.

5. Current robots are designed to move in a static environment. In a static environment, the robot needs to move on pre-planned route where it does not face obstacles. In case of unexpected obstacles or problems, the robot cannot react properly. AI shall be used to enable robots to move in dynamic environment where obstacles and tasks may change without prediction.