

## 1. Computer Networking

### Exercise

- A.** 1. (a)                      2. (c)                      3. (b)                      4. (c)
- B.** 1. protocol                2. SMTP                    3. router                    4. mesh                    5. NIC
- C.** 1. Ring                      2. Tree                      3. Bus                      4. Star
- D.** 1. Protocol is a set of rules that governs the communication between the computers over a network.
2. The components needed for a network are:
- Network Interface Card (NIC)
  - Router
  - Networking Cable (Ethernet Cable)
  - Hub or switch
  - Modem
3. A client is a computer which depends on the server for all the resources.  
A server controls the access to the hardware and software on the network.
4. Topology refers to the geometric arrangement of computers or nodes in a network.
- E.** 1. Computer network means a system of interconnected computers. The advantages of computer network are:
- (i) The information can be easily shared by the people.
  - (ii) It helps in reducing the cost of hardware.
  - (iii) Store information on one centralised location.
  - (iv) Reliability implies backing up of information. If a system crashes, then the information is accessible on another workstation for future use.
  - (v) Reduction in installation cost.
  - (vi) User authentication process to secure the data.
  - (vii) People will have the accessibility to all the information they need to get and share through e-mails and instant messaging which saves time and money in passing information.

2. A LAN is a digital communication system that interconnects a larger number of computers and other peripheral devices within a radius of less than 1 km.

MAN consists of two or more local area networks or campus area networks together that usually spans several buildings in the same city or town.

3. **Peer-to-Peer Network** is a network of two or more computers that uses the same type of program to share the data. Each computer is considered to have equal responsibilities and acts like a server to the other computers in the network.

**Client-Server Network** is a network in which one computer is designated as the server and all the other computers connected on the network are called the clients. The clients can request for the services from the server.

4. **LAN (Local Area Network)** is a digital communication system that interconnects a larger number of computers and other peripheral devices within a radius of less than 1 km. This type of network is usually preferred for a smaller area such as a school building, computer lab, etc. The total diameter of LAN is not more than 5 km.

**WAN (Wide Area Network)** is a digital communication system that interconnects a large number of computers in a wide geographical area. This network may operate on a worldwide or nationwide basis. In such type of network, there may not be physical connection between computers. In WAN telephone lines, microwave, satellite links, etc; can be used as transmission medium.



## Brain Teaser

1. Ring Topology    2. Network Server



## Lab Session

Do yourself.

# 2. Introduction to MS Access 2010



## Exercise

- |           |  |          |            |         |               |
|-----------|--|----------|------------|---------|---------------|
| <b>A.</b> | 1. (b)   | 2. (a)   | 3. (c)     | 4. (c)  | 5. (d)        |
| <b>B.</b> | 1. T   | 2. F     | 3. F       | 4. T    |               |
| <b>C.</b> | 1. table   | 2. field | 3. primary | 4. sort | 5. navigation |
| <b>D.</b> | 1. Primary key is a unique field by which the records are identified in a table. |          |            |         |               |



2. The final result of the manipulated data that comes from tables or queries in DBMS is known as the report.
3. A query is the most powerful feature of database. It helps you to retrieve information from a table based on some criteria or condition.
4. A Form is a window on which the data is displayed.

**E.** 1. To add a record:

**Step 1** Open the required table in Datasheet view from the Navigation pane.

**Step 2** Place the pointer where you want to add the new record.

To delete a record:

**Step 1** Open the required table in Datasheet view.

**Step 2** Select the record which you want to delete.

**Step 3** Right-click and select the Delete Record option.

2. The Datasheet View shows all the fields and the records as entered by the user. In this view, you can edit the content of the table.

In Design View records are not visible. You can only see the field names along with their data types. You can add or delete a field name.

**F.** 1. The advantages of DBMS are:

- (i) It minimizes the duplication of data by integrating and sharing the data files.
- (ii) It saves the storage space.
- (iii) All the users are provided with some access rights or privileges and permissions.
- (iv) The files can be easily updated whenever any changes are being made.

2. There are two types of views in MS Access:

- **Datasheet View:** It is the default view of the table. It shows all the fields and the records as entered by the user. In this view, you can edit the content of the table.
- **Design View:** In this view, the records are not visible. You can only see the field names along with their data types. You can add or delete a field name.

3. Rules for writing field names are:

- (i) The field name can be up to 64 characters long.
- (ii) It can include any combination of letters, numbers, spaces, and special characters except a period (.), an exclamation mark (!), an accent grave (') and brackets ([ ]).
- (iii) It cannot begin with the leading spaces.
- (iv) It cannot include a double quotation mark (").



## Brain Teaser

Using Templates



## Lab Session

Do yourself.

### 3. More on MS Access 2010



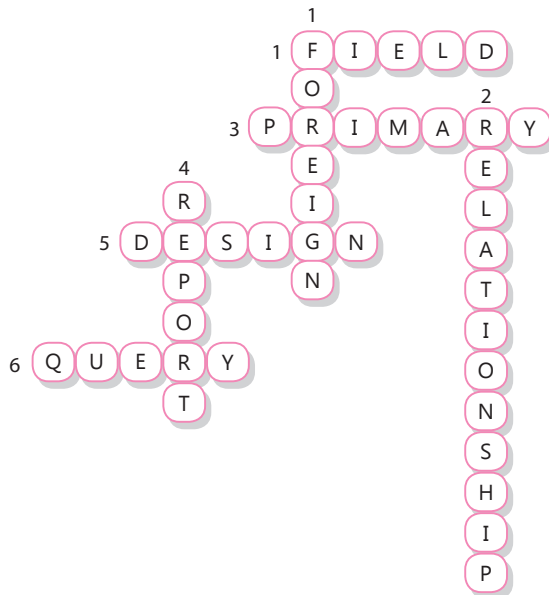
#### Exercise

- A.** 1. (b)                      2. (b)                      3. (c)                      4. (c)
- B.** 1. F                      2. F                      3. F                      4. F  
5. T                      6. T
- C.** 1. (c)                      2. (a)                      3. (d)                      4. (b)
- D.** 1. We need a form to create, edit and display data stored in tables in a user-friendly manner.  
2. Report allows you to organize and present your data in a user-friendly format so that it can be printed.  
3. Three view are:  
(i) Form View                      (ii) Design View                      (iii) Layout View
- E.** 1. Using a query, you can search or compile data from one or more tables in a database by giving specific search conditions so that you are able to view the exact data that you want. On the other hand, report allows you to organize and present your data in a user-friendly format so that it can be printed.  
2. A Primary Key is a unique field by which the records are uniquely identified in a table. To create a relationship, it is necessary to have a primary key in a table.  
3. A Foreign Key is a column in one table that must match the Primary Key of another table.  
To establish link between Primary Key and Foreign Key:  
**Step 1** Click on the Relationships command from Relationships group under Database Tools tab.  
**Step 2** The Show Table dialog box will open. Click on the Add button. The selected table will appear in the relationship window.  
**Step 3** Click and hold on the Primary Key field of one table.  
**Step 4** Drag the mouse pointer to the common field in the other table and release the mouse button.  
**Step 5** This will open Edit Relationships dialog box. Click on the Create button.





## Brain Teaser



## Lab Session

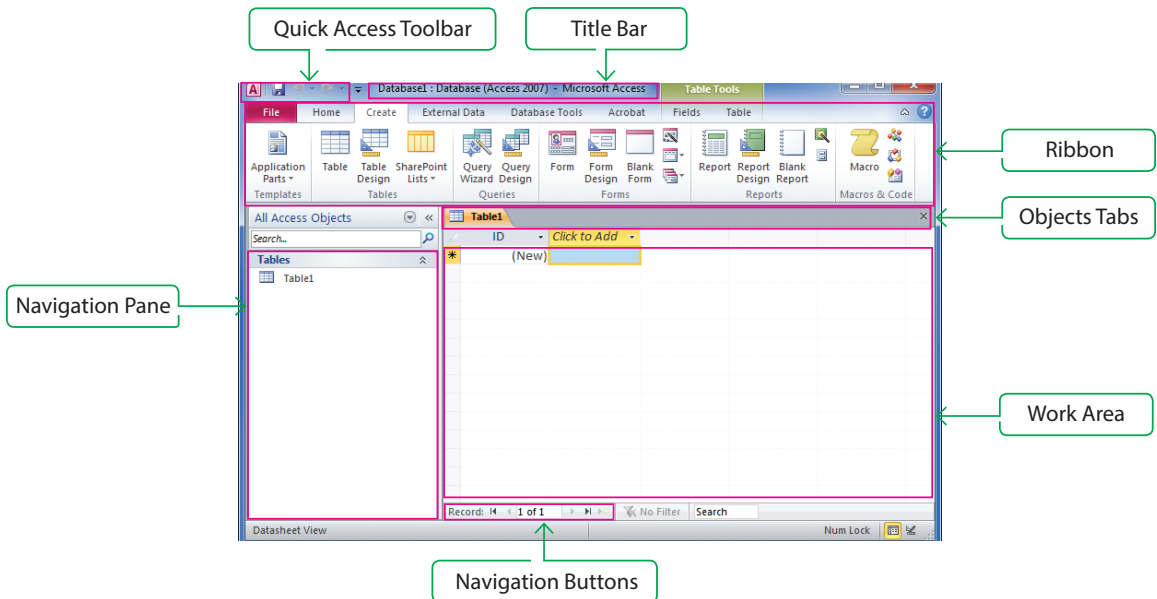
Do yourself.

## Periodic Assessment 1

(Based on chapters 1 to 3)

- |           |                   |                  |        |
|-----------|-------------------|------------------|--------|
| <b>A.</b> | 1. Network Server | 2. Mesh Topology | 3. MAN |
|           | 4. Datasheet View | 5. Number        |        |
| <b>B.</b> | 1. Ring Topology  | 2. Star Topology |        |

C.



## 4. Lists and Tables in HTML

### Exercise

- A. 1. (b)                      2. (a)                      3. (b)
- B. 1. ordered list            2. list item                3. <UL>                      4. disc                      5. <CAPTION>
- C. 1. A list is a collection of related items.  
2. Table represents data in the form of rows and columns.  
3. The description list is a type of list in which terms with their definitions are displayed.
- D. 1. The main difference between ordered list and unordered list is that the ordered list displays the items in a sequential manner and unordered list displays items in a non-sequential manner.  
2. The attributes of the <TABLE> tag are BORDER, BORDERCOLOR, FRAMES, BGCOLOR, BACKGROUND, HEIGHT, WIDTH, CELSPACING and CELLPADDING.  
3. The ROWSPAN attribute applies when a single cell is extended for more than a single row and the COLSPAN attribute applies when a single cell is extended to more than a single column.





## Brain Teaser

1. `<OL type="a" Start="d">`
2. `<UL type="Circle">`
3. `<DL> <DT> Keyboard</DT> </DL>`
4. `<UL type="Circle" start="3" reversed>`



## Lab Session

Do yourself.

## 5. More on HTML



### Exercise

- A.** 1. (c)                      2. (b)                      3. (b)                      4. (a)                      5. (c)
- B.** 1. F                      2. F                      3. F                      4. T
- C.** 1. internal link            2. `<A>`                      3. DIRECTION            4. `<FRAMESET>`
- D.** 1. Some of the image formats supported by HTML are Joint Photographic Experts Group (JPEG), Graphics Interchange Format (GIF) and Portable Network Graphics (PNG).
2. ALINK stands for Active Link and VLINK stands for Visited Link.
3. Frames are the different sections or parts of a web page.
4. GIF stands for Graphics Interchange Format.
5. The ROWS attribute of the `<TABLE>` tag is used to divide the window horizontally.
- E.** 1. a. The SCROLLAMOUNT attribute is used to specify the speed of the moving object in a marquee.
- b. The HREF means Hyperlink Reference which gives reference to the address of the web page.
- c. The ALT attribute specifies the alternate text to be displayed in the web browser, if the provided image is not found.
2. The attributes of the `<IMG>` tag are:
- SRC:** It specifies the source or URL of the image that has to be inserted in the web page. For example,
- `<IMG SRC="C:/Mydocuments/lily.jpg">`



**WIDTH:** It specifies the width of the image in the web page. For example,

<IMG SRC="lily.jpg" WIDTH="50%">

**HEIGHT:** It specifies the height of the image in the web page. For example,

<IMG SRC="lily.jpg" HEIGHT="60%">

3. <A HREF="Display.html"> Display </A>

4. The attributes of the <FRAME> tag are:

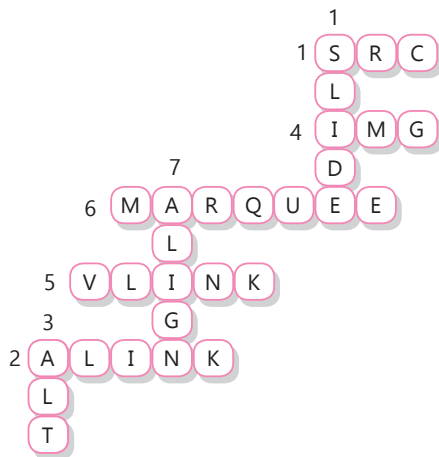
- (i) **FRAMEBORDER:** This attribute is used to define whether a border is to be created around the frame or not.
- (ii) **NORESIZE:** This attribute is used to restrict the user to resize the frame on the web page.
- (iii) **SRC:** This attribute is used to define the URL or path of the web page which is to be linked to the frame.



## Brain Teaser

- A.
1. <FRAMESET> tag
  2. Yes, by using the <MARQUEE> tag
  3. <IMG> tag

B.



## Lab Session

Do yourself.





# Periodic Assessment 2

(Based on chapters 4 & 5)

- A.**
1. The <TD> tag stands for Table Data. It is used to fill the data in the table cells.
  2. The <DL> tag is used to create a definition list.
  3. VLINK stands for Visited Link. It is used to specify the color of visited links.
  4. The <A> tag is used for creating links in the HTML web pages.
  5. The <MARQUEE> tag is used to add a moving text or image on the Web page.

**B.**

```
<HTML>
<HEAD> <TITLE> </TITLE> </HEAD>
<BODY>
<OL>
<LI> Hardware </LI>
<OL TYPE="I">
<LI> Printer
<LI> Webcam </OL>
<LI> Software
<OL TYPE="I">
<LI> MS Office
<LI> Adobe Photoshop
</OL>
</OL>
</BODY>
</HTML>
```

- C.**
- |        |        |        |        |
|--------|--------|--------|--------|
| 1. (b) | 2. (d) | 3. (a) | 4. (c) |
|--------|--------|--------|--------|

**D.**

```
<HTML>
<HEAD> <TITLE> </TITLE> </HEAD>
<BODY>
<TABLE BORDER="1">
<TR ALIGN="Center">
<TD>ROLL NO.</TD>
<TD COLSPAN="2">Name</TD>
<TD>Marks</TD>
<TD>Grade</TD>
</TR>
```



```
<TR ALIGN="Center">
<TD></TD>
<TD>First</TD>
<TD>Last</TD>
<TD></TD>
<TD></TD>
</TR>
<TR ALIGN="Center">
<TD>1.</TD>
<TD>Deepika</TD>
<TD>Batra</TD>
<TD>81</TD>
<TD>A</TD>
</TR>
<TR ALIGN="Center">
<TD>2.</TD>
<TD>Kiran</TD>
<TD>Gupta</TD>
<TD>85</TD>
<TD>A+</TD>
</TR>
<TR ALIGN="Center">
<TD>3.</TD>
<TD>Vikas</TD>
<TD>Arora</TD>
<TD>72</TD>
<TD>B</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```



# Test Sheet 1

(Based on chapters 1 to 5)

## Section A

- A.**
- |        |        |        |        |
|--------|--------|--------|--------|
| 1. (d) | 2. (b) | 3. (c) | 4. (b) |
| 5. (b) | 6. (b) | 7. (b) | 8. (b) |
- B.**
- |         |           |            |            |                   |
|---------|-----------|------------|------------|-------------------|
| 1. SMTP | 2. Router | 3. Table   | 4. Sorting | 5. Query          |
| 6. Run  | 7. Disc   | 8. <TABLE> | 9. <A>     | 10. internal link |

## Section B

- A.**
1. A server is a computer that controls the access to the hardware and software on the network. A client is a computer which depends on the server for all the resources.
  2. DBMS stands for Database Management System.
  3. A query helps you to retrieve information from a table based on some criteria or condition.
  4. A list is a collection of related items.
  5. ALINK stands for Active Link and VLINK stands for Visited Link.
- B.**
1. The computer network means the system of interconnected computers. The advantages of computer network are:
    - (i) The information can be easily shared by the people.
    - (ii) It helps in reducing the cost of hardware.
    - (iii) Store information on one centralised location.
    - (iv) Reliability implies backing up of information. If a system crashes, then the information is accessible on another workstation for future use.
    - (v) Reduction in installation cost.
    - (vi) User authentication process to secure the data.
    - (vii) People will have the accessibility to all the information they need to get and share through e-mails and instant messaging which saves time and money in passing information.
  2. The Datasheet View shows all the fields and the records as entered by the user. In this view, you can edit the content of the table.

In Design View records are not visible. You can only see the field names along with their data types. You can add or delete a field name.
  3. A Primary Key is a unique field by which the records are uniquely identified in a table. To create a relationship, it is necessary to have a primary key in a table.
  4. Attributes of the <TD> tag are ALIGN, BGColor, WIDTH, ROWSPAN, COLSPAN and VALIGN.

5. Frames are used to display more than one web pages on a single screen of the web browser. Frames are the different sections or parts of a web page. The <FRAMESET> tag is used to divide the web page into different sections or partitions.

C. `<HTML>  
<HEAD> <TITLE> </TITLE> </HEAD>  
<BODY>  
<FONT COLOR="red">  
<U>  
<H2 ALIGN="center">  
Let's Reduce Global warming!</H2>  
</U>  
</FONT>  
We can reduce Global Warming by:  
<UL TYPE="square">  
<LI>Reducing our consumption of fossil fuels  
<LI>Driving less. Walking, biking or carpooling  
<LI>Recycling more  
<LI>Using less hot water  
<LI>Planting a tree  
<UL>  
</BODY>  
</HTML>`

## 6. More on Photoshop CS6



### Exercise

- A. 1. (b)                      2. (a)                      3. (d)                      4. (c)                      5. (a)
- B. 1. F **Correct Statement:** We can delete a layer in Photoshop once it is created.  
2. F **Correct Statement:** Blur Tool is used to blur the background of the selected image.  
3. T  
4. F **Correct Statement:** Spot Healing Brush Tool is not same as Healing Brush Tool.
- C. 1. Smudge                      2. Sharpen                      3. Clone Stamp
- D. 1. Smudge Tool                      Blur Tool                      Clone Stamp Tool  
Sharpen Tool                      Spot Healing Brush Tool                      Pattern Stamp Tool



- The difference between Spot Healing Brush Tool and Healing Brush Tool is that the latter requires a source point.
- Layers are transparent sheets containing objects which are stacked on top of each other so that individual properties of an object can be edited without affecting other objects.
- The Smudge Tool is used to show the image as the wet paint on the image has been spread by finger.

**E.** 1. To use Clone Stamp Tool:

**Step 1** Open the image and then click on Clone Stamp Tool from the Toolbar.

**Step 2** Select the brush size and hardness from Options bar.

**Step 3** Press and hold the Alt key and click on the image to be cloned.

**Step 4** Click and drag the mouse at the place where the clone is to be created.

**Step 5** When you drag the mouse pointer, you will see a plus sign on the original image and a small circle on the cloned image.

**Step 6** Release the mouse button when clone completed.

- Layers are transparent sheets containing objects which are stacked on top of each other so that individual properties of an object can be edited without affecting other objects. We can add new layers, change the position of layers, delete layers and customize layers.



## Brain Teaser

**A.** 1. Spot Healing Brush Tool

2. Clone Stamp Tool

**B.**





## Lab Session

Do yourself.

# 7. Internet Services and Cyber Crime



## Exercise

- A.** 1. (d)                      2. (a)                      3. (c)                      4. (a)
- B.** 1. T                      2. T                      3. F                      4. T                      5. T
- C.** 1. carding                      2. blogs                      3. chat                      4. pirated software
- D.** 1. Phreaking is a cyber crime committed against telephone companies by using computers.  
2. A newsgroup is a discussion group that focuses on a particular topic.  
3. No, because these services are generally considered as a source of distraction from education for students.  
4. Computer hacking is the practice of modifying computer hardware and software to accomplish a goal outside of the creator's original purpose.  
5. Cloud storage is a service where the users are able to store and manage data on remote server in place of their local computer.
- E.** 1. To upload a file on Google Drive:  
**Step 1** Visit [www.google.com/drive/](http://www.google.com/drive/) web page.  
**Step 2** Click on Go to Google Drive button.  
**Step 3** Enter your Gmail account's username and then click on Next button.  
**Step 4** Enter password and then click on Next button. This will open your Google Drive web page.  
**Step 5** Click on My Drive option. This will open a drop-down list.  
**Step 6** Click on Upload Files to upload and store your file on the remote server.
2. Blogs are generally like a detailed explanation on a subject or sometimes also as a Diary of Events. It is a discussion platform where the readers of the blog can add their comments and suggestions. These posts are displayed in descending order of time, which means the latest post is shown at the top.

3. Different types of communication techniques are:

- (i) **E-mail:** E-mail stands for electronic mail. You can send messages and files from your computer to your friend's computer and vice-versa using e-mail service.
- (ii) **Video Conferencing:** It is a technique of watching the person whom you are talking.
- (iii) **Voice-over-Internet Protocol (VoIP):** It is a technology which gives calling facility over the Internet.
- (iv) **Chatting:** Refers to a communication in the form of small messages among the computers over the Internet, just like SMS service on mobiles.
- (v) **Social Networking:** It is a platform where people with common interest or activities can connect with each other.

4. To register on Skype:

**Step 1** Download the Skype from the [www.skype.com](http://www.skype.com) website and install it on your computer.

**Step 2** Double click on Skype icon to start Skype.

**Step 3** Click on Sign in or Create button to create an account on Skype.

**Step 4** Click on Create one! link. The Create account screen appears.

**Step 5** Enter your email and click on Next button.

**Step 6** Enter a password and click on Next button.

**Step 7** The Skype asks you about your personal details. Then, click on Continue button.

**Step 8** Skype further asks you for checking your microphone and webcam. Click on Continue button each time.

5. Some of the cyber crimes are:

- (i) **Data Diddling:** Refers to the process of changing the data going into or out of a computer.
- (ii) **Phreaking:** Refers to the crime that is committed against telephone companies.
- (iii) **Cloning:** Refers to a fraud in which scanners are used to steal the electronic serial numbers of cellular phones, which may used for billing purposes and making broadcast calls.
- (iv) **Carding:** Refers to the process of stealing credit card numbers online, to be resold or used to charge merchandise against victim's account.



## Brain Teaser

- A.
- 1. Popular blogging websites are Blogger, Wordpress, Tumblr, etc.
  - 2. By uploading the files on cloud storage services, Alia can carry her back-up.
  - 3. Video Conferencing

**B.**

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | A | N | Y | E | B | A | N | K | I | N | G |
| J | C | K | E | B | R | I | L | S | T | X | C | J |
| G | O | Z | W | O | Q | H | W | W | G | V | H | U |
| Y | M | C | S | E | M | A | I | L | X | M | A | K |
| Z | M | V | G | Z | C | B | P | F | X | Y | T | A |
| O | U | D | R | K | R | E | Y | A | N | W | T | B |
| E | N | N | O | V | O | I | P | O | V | U | I | Z |
| P | I | R | U | E | G | R | E | E | T | I | N | G |
| F | C | Q | P | D | J | T | H | B | L | O | G | K |
| N | A | M | U | I | S | L | M | C | L | F | B | N |
| P | T | T | H | L | R | E | W | S | Q | G | S | L |
| H | I | G | D | I | X | J | M | D | N | T | P | O |
| S | O | C | I | A | L | N | E | T | W | O | R | K |
| I | N | F | A | Q | C | E | V | E | U | M | L | K |



## Lab Session

Do yourself.

## Periodic Assessment 3

(Based on chapters 6 & 7)

- A.**
1. Clone Stamp Tool and Pattern Stamp Tool
  2. E-banking and Social Networking
  3. Blur Tool and Sharpen Tool
  4. Cloning and Carding
  5. Facebook and Twitter
- B.**
1. Layers are transparent sheets containing objects which are stacked on top of each other so that individual properties of an object can be edited without affecting other objects.
  2. E-banking, also known as Internet banking, is an electronic payment system.
  3. Computer hacking is the practice of modifying computer hardware and software to accomplish a goal outside of the creator's original purpose.
- C.**
- |               |             |              |                            |
|---------------|-------------|--------------|----------------------------|
| 1. Photoshop  | 2. Chatting | 3. pirated   | 4. E-mail service provides |
| 5. Retouching | 6. Layers   | 7. duplicate | 8. cyber security          |
- D.**
- |        |        |        |        |
|--------|--------|--------|--------|
| 1. (c) | 2. (e) | 3. (a) | 4. (f) |
| 5. (b) | 6. (d) |        |        |





## 8. Control Structures in Python



### Exercise

- A.** 1. (b)                      2. (d)                      3. (c)                      4. (a)                      5. (b)
- B.** 1. T  
2. T  
3. F **Correct Statement:** The break statement is used to break the execution of a loop.  
4. T  
5. F **Correct Statement:** The conditional statement is used to control the flow of execution of a program based on a given test condition.
- C.** 1. break                      2. if                      3. continue                      4. print ( )                      5. input ( )
- D.** 1. (c)                      2. (d)                      3. (a)                      4. (b)
- E.** 1. The print( ) function is used to display the output on the screen.  
2. To change the default flow of a program, we use conditional statements.  
3. We use jump statements to transfer the control of the program outside the loop.
- F.** 1. The if statement allows you to test a condition before executing the statements and the if...else statement is used to execute either of the block of statements from if or else statements.  
2. The break statement terminates the loop within which it lies. It skips rest of the statements in the loop and jumps over to the statement following the loop. For example,  
for x in [10, 15, 20, 25]:  
    if(x == 20):  
        break  
    print("the value of x is", x)  
print("Thank You!")  
In the preceding code, loop stops executing when the value of x becomes 20.  
3. The for loop is designed to process the items of any sequence one by one. The syntax of the for loop is:  
for <variable> in <set of values>:  
    [statements to repeat]  
The variable is a loop variable that controls the iterations of the for loop. The set of values written after the in keyword is the sequence of elements from where the variable will derive its value while repeating the statements written in the body of the for loop. For example,

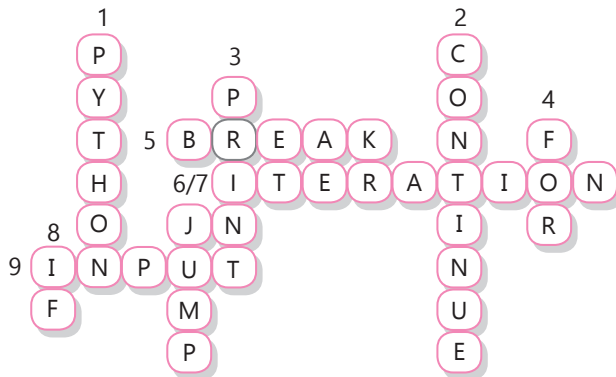
```
for x in [10, 15, 20, 25]:
    print("the value of x is", x)
print("Thank You!")
```



## Brain Teaser

- A.**
1. 10  
20  
30  
40  
50
  2. 3  
4  
5  
6
  3. Syntax Error. Colon is missing from for loop.

**B.**



## Lab Session

```
⚡ num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
if(num1%num2==0):
    print("First number is divisible by second number")
else:
    print("First number is not divisible by second number")
```



```

❶ num1 = int(input("Enter first number: "))
   num2 = int(input("Enter second number: "))
   num3 = int(input("Enter third number: "))
   if (num1 >= num2) and (num1 >= num3):
       print(num1, "is the largest number")
   elif (num2 >= num1) and (num2 >= num3):
       print(num2, "is the largest number")
   else:
       print(num3, "is the largest number")

❷ age = int(input("Enter your age: "))
   if(age>=18):
       print("You are eligible to vote")
   else:
       print("You are not eligible to vote")

❸ sum = 0
   for i in range (1,11,1):
       sum += i
   print("Sum of first 10 natural numbers is:", sum)

❹ num1 = int(input("Enter a number: "))
   if(num1 < 0):
       print("Entered number is negative")
   elif(num1 == 0):
       print("Entered number is zero")
   else:
       print("Entered number is positive")

```

## 9. Robotics

### Exercise

- |                  |        |        |        |        |
|------------------|--------|--------|--------|--------|
| <b>A.</b> 1. (c) | 2. (a) | 3. (b) | 4. (c) | 5. (a) |
| <b>B.</b> 1. T   | 2. F   | 3. T   | 4. F   | 5. F   |

- C.** 1. robot                      2. autonomous robots                      3. integrated circuit  
4. Dante II
- D.** 1. A 'human like' machine that can do automated tasks is called a robot.  
2. The field of mechanics and electronics together have given rise to a new engineering sector called Mechatronics.  
3. Unmanned surgery, surgery with minimum cutting or puncturing of skin has been possible because of robots.
- E.** 1. There are two types of robots:  
(i) Industrial robots are mainly used in manufacturing industries such as automotives industries. These robots are programmed using computers.  
(ii) Service robots include domestic robots that clean the carpet or cut grass in the garden and move on their own. They are fully or semi-autonomous robots and controlled by electronic circuits.
2. Programmed robots can now track cyclones and weather conditions. With the help of computers it is possible to view images from satellites. More and more research projects aim at predicting the natural disasters in advance to avoid serious damage and protect the inhabitants of that area.
3. Robotics gained a vital place in the environmental sector. A robot developed in England can attack insects like some omnivorous plants. Also a London aquarium exhibits a robot that has been inspired by a fish.



## Brain Teaser

### Decoded Message:

WITH THE ADVANCEMENT IN TECHNOLOGY, ROBOTS HAVE BECOME SO POWERFUL THAT IN NEAR FUTURE, THEY MAY ENSLAVE THE HUMAN RACE. TOO MUCH ADVANCEMENT MAY ALSO PROVE HARMFUL. WE MUST BE PREPARED TO FACE THE CRISIS.



## Lab Session

Do yourself

## Periodic Assessment 4

(Based on chapters 8 to 10)

- A.** 1. The if...elif...else statement                      2. The for loop  
3. The break statement                      4. The continue statement
- B.** 1. The field of mechanics and electronics together have given rise to a new emerging sector called Mechatronics.



2. When a robot is designed to execute highly sophisticated instructions, it is referred to as an **android**. Android also refers to a mobile operating system (OS) based on Linux.
3. Any machine that can execute programmed instructions and thus reduce labour or manpower requirement is called robot.

**C.** 1. 100 is  $\leq$  500

200 is  $\leq$  500

300 is  $\leq$  500

Let's Break!

2. 100 is  $\leq$  500

200 is  $\leq$  500

300 is  $\leq$  500

500 is  $\leq$  500

Let us Continue!

3. 100

The number is even

**D.**

```

num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
if(num1 % 3 == 0):
    if(num1 % 4 == 0):
        print("First number is divisible by both 3 and 4")
    else:
        print("First number is only divisible by 3")
else:
    print("First number is not divisible by 3 and 4")
if(num2 % 3 == 0):
    if(num2 % 4 == 0):
        print("Second number is divisible by both 3 and 4")
    else:
        print("Second number is only divisible by 3")
else:
    print("Second number is not divisible by 3 and 4")

```

# Test Sheet 2

(Based on chapters 6 to 10)

## Section A

- A.** 1. (c) 2. (d) 3. (c) 4. (b) 5. (c)  
6. (d) 7. (b) 8. (c)
- B.** 1. Spot Healing Brush Tool 2. Smudge Tool 3. video conferencing  
4. Social networking 5. print() 6. if 7. Dante II

## Section B

- A.** 1. Layers are transparent sheets containing objects which are stacked on top of each other so that individual properties of an object can be edited without affecting other objects.  
2. Phreaking is a cyber crime committed against telephone companies by using computers.  
3. The input( ) function is used to display the output on the screen.  
4. The branch of mechanical engineering, electrical engineering and computer science that deals with the design, construction, operation and application of robots, as well as computer systems for their control, sensory feedback and information processing is called Robotics.
- B.** 1. To use Clone Stamp Tool:  
**Step 1** Open the image and then click on Clone Stamp Tool from the Toolbar.  
**Step 2** Select the brush size and hardness from Options bar.  
**Step 3** Press and hold the Alt key and click on the image to be cloned.  
**Step 4** Click and drag the mouse at the place where the clone is to be created.  
**Step 5** When you drag the mouse pointer, you will see a plus sign on the original image and a small circle on the cloned image.  
**Step 6** Release the mouse button when clone completed.
2. Computer hacking is the practice of modifying computer hardware and software to accomplish a goal outside of the creator's original purpose and cracking is the same practice though with criminal intention.
3. The if statement allows you to test a condition before executing the statements and the if... else statement is used to execute either of the block of statements from if or else statements.
4. Robotics gained a vital place in the environmental sector. A robot developed in England can attack insects like some omnivorous plants. Also a London aquarium exhibits a robot that has been inspired by a fish.
- C.**

```
circumference = float(input("Enter circumference of a circle: "))
radius = circumference/(2*3.14)
print("Radius of circle is:", radius)
```