

# Chapter-1

## Number Systems

### TESTING TIME

A. 1. b

2. c

3. c

4. c

5. a

B. 1. Number system

2. Binary

3. 10

4. 16

5. 8

C. 1. True

2. True

3. True

4. True

5. True

D. 1. A Computer network is a system in which two or more computers along with order peripheral devices such as printers, fax machines, cameras modem, etc. The main purpose of a computer network is to help sharing of data and hardware among a wide range of users and devices.

2. Local area network (LAN) – A Local area network covers only a localised or small physical area such as home, office, and a small groups of building such as a school an airport.

Metropolitan area network (MAN) – Man is a larger than a local area network and network and as its name implies, covers the area of single city.

3. Star Topology – A Star Topology network is designed with each node connected directly to a central network called the hub or Concentrator. Data on a star network passes through the hub before it reaches to its destination.

4. Some important network components are NIC, switch, cable, hub, router, and modem.

5. Network security means Implementation of some rules, policies and procedures by a network administrator to avoid and keep track of un authorised access, exploitation, modification, or denial of the network and network resources.

There are different security mechanism that can be performed to protect the network :-

- I. Use virus protection software.
- II. do not open Unknown e-mail attachments.
- III. Use regular backup of your critical data.

### **ACTIVITY TIME**

#### **1.**

- I. PAN
- II. Backbone
- III. MAN
- IV. Mesh
- V. Memory
- VI. Ring
- VII. Internet
- VIII. LAN

## Chapter-2

### Introduction to Access 2016

#### TESTING TIME

A. 1. a

2. c

3. c

4. c

5. b

B. 1. Records

2. accdb

3. File

4. Share

5. Printed Copy

C. 1. True

2. True

3. True

4. False

5. False

D. 1. A Collection of raw facts and figures, gathered about someone or something, is known as data. When the data is processed and transformed in such a way that it becomes useful to the users, it is known as information.

2. Advantages of DBMS:-

- Easy to learn: Most of the DBMS are easy to learn and use. No specific preparation is required to work on a DBMS

- Reduce redundancy: Duplication or repetition of same data at different places is known as redundancy.
- Sharing of data: You can share your data stored in the data with a number of users or application program easily.

3. A Table is a collection of records and each record in a table contains the same field it represent the data in the form of rows and columns. A form provides a medium of entering , editing and viewing data in the tables.

4. A Data base management system (DBMS) is a software application that enables a user to define, create, and maintain a database while providing a way to maintain multiple access control and security of the data.

Microsoft access 2016 is a relation database management system, which is a part of the Microsoft office suite of application.

#### 5. Components of Access Window:

- Title bar: The title bar is situated at the top of the window. It contains the Quick Access and Control buttons.
- File tab: The file tab contains all the options to perform action such creating, opening saving and printing a database.
- Ribbon: the ribbon contains tabs as well as groups which provide all the options to edit and format the data in the database.
- Navigation Pane: The navigation pane displays the list of all the objects used in the database.

# Chapter-3

## Working with Database

### TESTING TIME

A. 1. a

2. c

3. b

4. c

5. b

B. 1. Data type

2. Number

3. Record

4. Record

5. Description

C. 1. True

2. False

3. True

4. True

5. True

D. 1. Field grid area is used to define three main components namely, Field Name, Data Type, Discription.

2. To insert a new field table in the design view follow these step:

Step-1 Select the field before which you want to insert a new field.

Step-2 Click the Insert rows button on the design tab.

Step-3 A New row will be inserted before the selected field.

3. To set a Primary key follow these step:

Step-1 Click the area to the left of the Field Name. Select the field Book ID.

Step-2 Select the Primary key button on the design tab.

OR

Right Click the selected field and then select the primary key option, A Key symbol is displayed.

4. All the queries created in a database also appear in the **All access objects** pane under the **queries** section on the left side of the window. You can run any existing query by just double-clicking on it. The data retrieve by the query displays in the data sheet view.

5. Step-1 Click the form wizard button in the form group on the create tab.

Step-2 Select the table book info from the tables/queries.

Step-3 Click next to move to the next step.

Step-4 Select the layout of your choice for the form then click Next.

Step -5 enter a name for the form.

Step-6 Click the finish button to create the form.

### **ACTIVITY TIME**

**A.**

- a. (iii)
- b. (v)
- c. (i)
- d. (ii)
- e. (iv)

# Chapter-4

## Adobe Photoshop CS6

### TESTING TIME

A. 1. a

2. c

3. a

4. c

5. b

B. 1. Workspace

2. Triangle

3. Move tool

4. Ctrl + Z

5. .psd

C. 1. False

2. False

3. True

4. True

5. False

D. 1. Adobe photoshop is an image editing and photo retouching software developed and published by Adobe Inc. For MacOS and windows. The software allows users to edit, crop, resize, and correct colour of digital photograph.

2. Three components of Adobe photoshop window are:

- I. Menu Bar: It is a long bar placed at the top of the adobe photoshop window, which shows different menus, such as file, edit, image, layer, type, select, filter, view, window and help.
- II. Color – allow you to set the background and foreground color of the image by changing the RGB Values.
- III. Swatches : displays a color palette showing most frequently used colour.

3. To view the hidden tools, right click on the tool icon, and select the desire tool from the sub menu that appears.

4. Paint bucket Tool is used to fill an image or part of it with different solid colours.

Gradient is a gradual mixing of blending of two or more colours in some specific patterns.

5. The tools in this category are used to quickly select the areas of an image having same tone, colour or texture. To perform a selection using magic wand tool follow these steps.

Step-1 Select the magic wand Tool, From the tools panel .

Step-2 click once on any part of the image.

6. Select the **Gradient tool** from the **Tools panel** (or press G or Shift+G) until the **Gradient tool** becomes active. Select one of the preset gradients from the **Gradient** Picker drop-down **panel** on the Options bar.

### **ACTIVITY TIME**

- A.**
- a. Magic wand Tool
  - b. Gradient Tool
  - c. Move Tool
  - d. Crop Tool
  - e. Lasso Tool
  - f. Brush Tool



# Chapter-5

## Introduction to visual Basics

### TESTING TIME

A. 1. a

2. b

3. c

4. a

5. c

B. 1. Visual Basic

2. Subprograms

3. Methods

4. Toolbox

5. Disposed

C. 1. True

2. True

3. False

4. False

5. False

D. 1. Event-driven programming is a programming paradigm in which the flow of program execution is determined by events - for example a user action such as a mouse click, key press, or a message from the operating system or another program.

2. Menu Bar is located on the top of the window. It contains several menus, namely, File, Edit, View, Project, Debug, Data Tools, window and help.

Toolbar is present below the menu bar and contains icons for the frequently used tasks such as save project, open project, and so on.

3. Various controls in Microsoft visual studio are : Form Control, Label Control, Text Box Control, Button Control.

4.Solution having - Page No.74

5. To add a control to the form, follow these steps.

Step-1 Open the Toolbox Tab.

Step- 2 Click on the desired tool from the list.

Step-3 Click and drag the mouse diagonally on the form to draw the control.

Alternatively double click on the icon of the desired control in the Toolbox. The control appears on the form automatically in its default size.

After a control has been placed onto the form, you can move it to the desired place on the form. You can also resize the control, If required.

### **ACTIVITY TIME**

- A.**
- a. Name
  - b. Text
  - c. Forecolor
  - d. Max Length
  - e. Visible

# Chapter-6

## More On HTML

### TESTING TIME

A. 1. b

2. a

3. a

4. c

5. b

B. 1. Roman

2. List

3. Images

4. Bulleted

5. Caption

C. 1. False

2. True

3. False

4. True

5. True

D. 1. The SRC Attribute describes the location or path of the image which is to be inserted in the web page. The location of the image may be in the same folder as the HTML file or in another folder.

2. In HTML, a table is created by using the TABLE element <TABLE>.

The structure of a table are, <CAPTION>, <TR>, <TABLE>, <TD>, <TH>.

3. HTML Code demonstrates the use of the table element and its CSS properties.

```
<HTML>
<HEAD>
<TITLE> Tables in HTML </TITLE>
<STYLE>
BODY {
BACKGROUND-COLOR; LAVENDER;
TEXT- ALIGN: CENTER;
FONT-FAMILY: Cambria;
}
H3 {
MARGIN-TOP: 50;
COLOR: #9400D3;
}
TABLE {
BORDER: 15px SOLID LIGHTBLUE;
HEIGHT: 400;
WIDTH: 600;
TABLE-LAYOUT: FIXED;
PADDING: 12px 12px 12px 12px;
}
CAPTION {
FONT-SIZE: 20;
COLOR: #4B0082;
CAPTION-SIDE: TOP
}
TR {
TEXT-ALIGN: CENTER;
VERTICAL-ALIGN: MIDDLE;
}
TH {
BACKGROUND-COLOR: #00FF00;
TEXT-TRANSFORM: UPPERCASE
}
```

```

</STYLE>
</HEAD>
<BODY>
<H3> here is an example of a table in an HTML document. </H3>
<TABLE ALIGN = "CENTER">
<CAPTION> School Library </CAPTION>
<TR>
<TD COLSPAN = "3" STYLE = "COLOR: WHITE; TEXT-TRANSFORM:
UPPERCASE; BACKGROUND-COLOR: #0000FF"> Library Details</TD>
</TR>
<TR>
<TH> Book Author </TH>
<TH> Book Name </TH>
<TH> Book Quantity </TH>
</TR>
<TR STYLE = "BACKGROUND-COLOR: #FFFF00">
<TD> Ruskin Bond </TD>
<TD> The Room on the Roof </TD>
<TD> 5 </TD>
</TR>
<TR STYLE = "BACKGROUND-COLOR: #FF7F00">
<TD ROWSPAN = "2" > Mark //Twain </TD>
<TD> The Adventures of Tom Sawyer </TD>
<TD> 10 </TD>
</TR>
<TR STYLE = "BACKGROUND-COLOR: #FF0000">
<TD> Life on the Mississippi </TD>
<TD> 15 </TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

4. In an ordered HTML list, all the list items are marked with numbers and hence it is also known as a numbered list.  
 In an unordered HTML list, all the list items are marked with symbols (Usually bullets) and hence it is also known as bulleted list.

5. There are four stages of the appearance of a hyperlink.  
Unvisited link, Hovered link, Active link, Visited link.  
Use of the anchor element and the CSS properties associated with it.

```
<HTML>
<HEAD>
<TITLE> Anchor Element </TITLE>
<STYLE>
BODY {
BACKGROUND -COLOR: LINEN;
TEXT-ALIGN: CENTER;
MARGIN-TOP: 75;
}
H1 {
COLOR: HOTPINK;
}
A {
FONT-SIZE: 30;
}
A:LINK {
COLOR: RED;
}
A:HOVER {
COLOR: PURPLE;
}
A:ACTIVE {
COLOR: YELLOW;
}
A:VISITED {
COLOR: GREEN;
}
</STYLE>
</HEAD>
<BODY LINK= "red" VLINK= "ff00ff" ALINK="#FF66FF">
<H1> This is how you insert a hyperlink in an HTML document. </H1>
<A HREF = "image.jpg"> This hyperlink opens an image. </A>
</BODY>
</HTML>
```

### **ACTIVITY TIME**

- 1.** a. <OL><LI> Item Name </OL>

- b. <DL><DT><DD></DL>
- c. <IMG>
- d. <TABLE><CAPTION></CAPTION>  
    <TR><TH></TH></TR>  
    <TR><TD></TD></TR>  
    </TABLE>
- e. <A HREF = "URL">...</A>

# Chapter-7

## Surfing the Internet

### TESTING TIME

A. 1. a

2. c

3. a

4. b

5. a

B. 1. Streaming

2. WWW

3. Blog

4. Podcast

5. you tube

C. 1. True

2. False

3. True

4. True

5. True

D. 1. A home page is the main page of a website which contains information and links to other pages. It is the first page that is displayed on every website.

2. One way to beautify the documents or presentation you create on your computer is by inserting images or graphics. You can download them in various formats from the Internet and insert it into the respective file.

3. To upload video on you tube, follow these steps.



Step-1 Open the you tube homepage by typing inwww.youtube.com in the address bar of your browser.

Step-2 Select the upload video option from the drop down menu under the create a video or post button.

Step-3 Login to your Gmail account.

Step-4 click on the select files to upload option located at the center of the window.

Step-5 Locate the folder of the video and select it.

Step-6 Click the open button. The video starts uploading.

4. The term blog (shortened form of web log) means a discussion or information website published on the world wide web.

To create a new blog on your blogger account, follow these steps:

Step-1 Log in to your Blogger account.

Step-2 Click the CREATE NEW BLOG button.

Step-3 Enter the title in the TITLE and address for your blog in the address text box.

Step-4 Select the desire theme for your blog from the theme list box.

Step-5 Click the Create blog! Button.

Step-6 Click New post button.

Step-7 Enter the title for your blog in the post title textbox and start typing your blog.

Step-8 Click the publish button.

5. Streaming media is multimedia that is constantly received by and presented to an end-user while being delivered by a provider.

### **ACTIVITY TIME**

- a. World Wide Web

- b. Uniform Resource Locators
- c. Internet Service Provider
- d. Search Engine result page
- e. Video Blog

# Chapter-8

## Robotics

### TESTING TIME

A. 1. c

2. a

3. b

4. a

5. a

B. 1. Sophia

2. Robotics

3. Programmer

4. Programming

5. Machines

C. 1. True

2. False

3. True

4. True

5. False

D. 1. Robotics and Artificial intelligence (AI) are really two separate things. Robotics involves building robots whereas AI involves programming intelligence.

2. Two main programming languages are the best when used in robotics: C++ and Python, often used together as each one has pros and cons. C++ is used in control loops, image processing and to interface low-level hardware.

Python is used to handle high-level behaviours and to quickly develop tests or proof of concepts.

3. These are some types of robots given below:

- I. Articulated – The feature of this robot is its rotary joints and range of these is from 2 to 10 or more joints.
- II. Cartesian – These are also known as gantry robots. These have three joints which use the Cartesian coordinate system i.e. x, y, z.
- III. Cylindrical – These types of robots have at least one rotator joints and one prismatic joint which are used to connect the links.
- IV. Polar – These are also known as spherical robots. The arm is connected to base with a twisting joint and have a combination of 2 rotator joint and one linear joint.
- V. Scara – These robots are mainly used in assembly applications. Its arms are in cylindrical in design. It has two parallel joints.
- VI. Delta – The structure of these robots are like spider-shaped. They are built by joint parallelograms that are connected to the common base.

4. A Robot has these essential characteristics:

- I. Sensing: First of all your robot would have to be able to sense its surroundings.
- II. Movement: A robot needs to be able to move around its environment.
- III. Energy: A robot needs to be able to power itself.
- IV. Intelligence: A robot needs some kind of “smarts”.

5. Advantages of Robots

- They can get information that a human can't get.
- They can perform tasks without any mistakes and very efficiently and fast.
- Robots are used in different factories to produce items like plane, car parts etc.

Disadvantages of Robot

- They need the power supply to keep going.
- People working in factories may lose their jobs as robot can replace them.

- They need high maintenance to keep them working all day long. And the cost of maintaining the robots can be expensive.

# Chapter-9

## Artificial Intelligence

### TESTING TIME

A. 1. d

2. d

3. d

4. c

5. a

B. 1. Artificial intelligen

2. Intelligence

3. Intangible

4. Errors

5. Replicating

C. 1. True

2. True

3. True

4. False

5. True

D. 1. To create expert systems which exhibit intelligent behaviour with the capability to learn, demonstrate, explain and advice its users.

Helping machines to find optimal solution to complex problem like humans do and applying them as algorithm in a computer – friendly manner.

2. There are many examples of how AI in healthcare has helped patient all over the world. An organization called Cambio Health care developed a

clinical decision support for stroke prevention that can give the physician a warning when there's a patient at risk of having a heart stroke.

**3.** Machine learning is based on the idea that there exist some patterns in the data that is identified and used for future predictions.

**4.**

- Robotics is a branch of engineering and science that includes electronics engineering, mechanical engineering and computer science and so on.
- Artificial intelligence can be used to create expert systems which exhibit intelligent behaviour with the capability to learn, demonstrate, and explain and advice its users.
- Machine learning is based on the idea that there exist some patterns in the data that is identified and used for future predictions.

**5.** Advantages of AI

- High Accuracy with less errors
- High Speed
- High Reliability
- Useful for risky areas
- Digital Assistant
- Useful as a public Utility

Disadvantages of AI

- High Cost
- Can't think out of the box
- No feelings and emotions
- Increase dependency on machines
- No Original Creativity