



Based on Windows 7  
& MS-Office 2007

A HAND BOOK OF

# ICT CONNECT

Computer and Information  
Technology now enhanced  
to ICT (Information and  
Communications Technology)



Teacher's Book 7

# ICT CONNECT – BOOK 7

## Chapter - 1

### A. Answer the following questions:

1. We use the mean, median, mode and range for obtaining information of average values, middle values, repetitive values, maximum and minimum values on a list of values. Mean, median and mode are all types of averages and each works in the best way with different types of situations.
2. Range is the difference between the lowest and the highest values.
3. Excel has in-built formulae and functions, that may simplify and speed up the calculation process. By using these in-built functions, you shall learn to calculate mean, median, mode and range. You may also create your own formulae by using which you shall learn to calculate: Area, Perimeter, Profit and Loss, Simple Interest, etc.
4. Excel does all the calculations by using the important rule of mathematics – BODMAS (Bracket of Division, Multiplication, Addition, Subtraction).
5. Let us consider another set of values: 30, 30, 30, 45, 56, 77. In this case, the list has even number of values. How would you calculate the median in this case? Here, the median is the mean of the two middle numbers. So, in this case, the two middle numbers are 30 and 45. Their mean is  $(30+45)/2 = 75/2 = 37.5$ . Thus, 37.5 is the median.

**B. Fill in the blanks:**

1. numbers      2. situation
3. highest      4. average

**C. Out of the four options given below, tick (✓) the correct option:**

1. b      2. d      3. a

**Problem Solving**

**Write the formulae for the following:**

- a. Mean = mean (number 1, number2,.....)
- b. Median =media (number 1, number2,.....)
- c. Mode =mode (number 1, number2,.....)
- d. Range= (number 1 : number2)

**Project**

Do it yourself

**Chapter - 2**

**A. Answer the following questions:**

1. In a pie chart, the arc length of each sector is proportional to the quantity it represents. Together, the sectors create a full disk. This means, if the sectors represent degrees, their total should be 360; else if they represent percentage, their total should be 100, and so on. It is named for its resemblance to a pie that has been sliced.
2. When we create a pie chart by using the above data, it will get displayed as follows. The pie chart is divided into a number of colour sections.

**B. Fill in the blanks:**

1. arc length      2. standard toolbar
3. insert      4. chart

**C. Tick (✓) the correct options.**

1. b      2. b      3. a

**Activity Time**

Do it yourself

**Chapter - 3**

**A. Answer the following questions:**

1. Adobe Photoshop is a graphics editor software developed by Adobe System, in which you can create a digital image.
2. Paint Brush is used for filling colour in Image.
3. Screen mode is used for changing the look of the working place. Through this, many images can be seen on different windows at the same time.
4. By using Magic Wand tool, you can select group pixel through colour of Image.
5. By using Eraser tool, you can erase the element of any Image.
6. Pencil Tool is used for drawing a coloured straight line.
7. Dodge tool is used for giving lighting to the significant area of Image.
  - a. Click on Dodge tool from the tool box.
  - b. For decreasing or increasing the size of dodge tool, click on Down Arrow button of Brush.
  - c. For lighting effect of dodge tool, you can select its colour range.
  - d. In the end, you can drag the image area, if desired.
8. JPEG (Joint Photography Expert Group) format is used for creating a web page. Web files are saved and published in this format. JPEG is a good format for saving photographs.



**B. Fill up the blanks:**

1. edit
2. dimensions and image size
3. crop tool
4. rectangular
5. slant
6. move tool
7. Single
8. Clone stamp

**C. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T
2. F
3. T
4. T
5. F

**D. Match the following:**

Column A	Column B
1. Adobe Photoshop	a. colours the image.
2. Brush tool	b. is a graphics editor software.
3. Copy command	c. is used for selecting open image color.
4. Eyedropper tool	d. is used to decide quantity of color required of image.
5. Color balance	e. you can use it to copy objects.

**Chapter - 4**

**In-Text**

**Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.**

- (a) Flash is a popular software for making 3-D animations. ✗
- (b) We use the character kerning for controlling the space between the pair of characters. ✓
- (c) Keyframe allows you to edit an object in an animation. ✓

## **Exercise**

### **A. Answer the following questions:**

1. While working in Flash, you will find it really necessary to create simple animation sequences. Flash animations are basically of three types:

1. Motion Tween
2. Shape Tween
3. Frame-by- Frame Animation

#### **Motion Tween**

Motion Tween displays the motion of an object between more than two Keyframes.

#### **Shape Tween**

For Shape Tween, follow the steps:

- You may create shape-tweened animations by using shape option from the tween panel of the properties inspector.

#### **2. To Insert Frame**

- Select Insert from the toolbar.
- Select Timeline.
- Choose Frame.

#### **Keyframe**

Keyframe allows you to edit an object in an animation. To Insert Keyframe,

- Select Insert option from the Tool bar.
- Click on Timeline.
- Choose Keyframe.

#### **Blank Keyframe**

It is used when you do not want to show an object in a particular frame in an animation.

To Insert Blank Keyframe

- Select Insert option from the Tool bar.
- Click on Timeline.
- Choose Blank Keyframe.

3. There are three types of text fields:

### **Static Text**

Texts which do not need to change are known as static texts.

### **Dynamic Text**

Dynamic text creates a text box which updates automatically at run time. There are several options available, such as:

- a. Single Line : For displaying single line of text.
- b. Show Border Text: For showing border around text.
- c. Variables : It holds the values of different types of data.

### **Input Text**

It is used for creating a text box in which a user can enter text.

Multiline no wrap: For displaying text in multiple lines.

Maximum Characters : For limiting the maximum number of characters.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T    2. T    3. T    4. T            5. T    6. T    7. F

**C. Fill in the blanks with the following options:**

1. a      2. b      3. c      4. c      5. b

**D. Match the following:**

- | <b>A</b>      | <b>B</b>  |
|---------------|---|
| a. Ctrl+Enter | holds value of any data type.                       |
| b. Kerning    | plays movie.  |
| c. F6         | inserts frame.                                      |
| d. F5         | inserts Keyframe.                                   |
| e. Input text | allows a user to enter text.                        |
| f. Variable   | controls the space between the pairs of characters. |

**HOTS**

Do it yourself

**Project**

**Chapter - 5**

**In-Text**

**Put a tick (✓) for each of the correct statements and a cross (X) for each of the incorrect ones.**

- (a) Source Code is primarily used as an input to the process that produces an executable program. ✓
- (b) Object Code is the representation of a code that a compiler or an assembler generates by processing a Source Code File. ✓
- (c) A compiler is the software which reads the program written in source language and translates it into an object program. ✓

**Exercise**

**A. Answer the following questions:**

1. It is a sequence of statements or declarations that

are written in some human-readable computer programming language. It allows the programmer to communicate with the computer by using the required number of instructions.

2. Object Code is the representation of a code that a compiler or an assembler generates by processing a source code file.
3. Write a program so as to solve a problem that involves the following steps:
  1. Analyze the problems and make their input and output solutions.
  2. The second stage is the design stage that includes a series of steps so as to solve the problem which is known as an algorithm. An algorithm may usually be in one of the two forms:
    - a. The first is in the form of words and is known as a Pseudo Code.
    - b. The second is a pictorial representation in the form of a flow chart.
4. self
5. Debugging is the process of detecting and correcting errors in a program.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. F    2.T    3.F    4.T    5.F    6.T    7.T

**C. Fill up the blanks:**

1. Compiler, object program
2. Lexical analysis
3. Syntex analysis

4. Tracing
5. Break point

**D. Define the following terms:**

1. **Tracing** : It displays the values which are calculated internally at different locations within the program. In addition, it allows you to monitor the progress of the computation as the program gets executed.
2. **Stepping** : It refers to the execution of one instruction at a time by pressing a function key F7 or F8 to execute each instruction.
3. **Break point** : It is a temporary stopping point within a program.
4. **Compiler** : A compiler is the software which reads a program written in a source language and translates it into an object program.
5. **Flow chart** : self
6. **Lexical analysis** : ✓ It scans a source code from left to right, character by character.
  - ✓ It removes all comments, tabs, blank space and machine characters.
  - ✓ It produces error messages that must have occurred in a source program.
7. **Syntax analysis** : Syntax examination is the second phase of compilation process.
  - ✓ It checks if the expression is syntactically correct or not.
  - ✓ It reports syntax errors, if any.

**8. Debugging :** Debugging is the process of detecting and correcting errors in a program.

**E. Match the following:**

- | A                   | B  |
|---------------------|--|
| 1. Tracing          | produces an executable program.  |
| 2. Break point      | contains 'binaries'.   |
| 3. Stepping         | detects and corrects errors in a program.                              |
| 4. Debugging        | executes an instruction at a time by pressing F7.                      |
| 5. Lexical analysis | monitors the progress of the computation as the program gets executed. |
| 6. Object code      | scans a source program from left to right.                             |
| 7. Source code      | is a temporary stopping point within a program.                        |

**Project**

Do it yourself

**Chapter - 6**

**In-Text**

**Put a tick (✓) for each of the correct statements and across (X) for each of the incorrect ones.**

- (a) Heading is a text property which divides the different sections of text.✓

- (b) Paragraph tag adds a block of text.✓
- (c) List tags are used for colouring text.✗

**Exercise**

**A. Answer the following Question.**

1. It will give you a simple HTML output.
2. Different parts of table are:
  1. Caption : It indicates the title of the table.
  2. Table Heading : It indicates the label of the rows, columns or both.
  3. Table Cells : It indicates small single squares in the table.
  4. Table Data : It indicates the value in the table itself.
3. List tags are used for adding bullets and numbers.  
The two main categories of lists are : ordered lists and unordered lists.  
Ordered Lists  
These are lists in which every item is numbered.  
Unordered Lists  
These are marked with symbols or other bulleted symbols.
4. List tags are used for adding bullets and numbers.

**B. Fill up the blanks:**

1. Heading
2. Paragraph tag
3. Unordered Lists
4. Ordered, unordered

**C. Define the following:**

1. **Heading** : Heading is a text property which divides the different sections of text. There are six levels of headings.
2. **Table** : A table is made up of head, rows,



columns and cells. You may put data in the table using different tags. Rows are horizontal whereas columns are vertical.

**3. Table data :** It indicates the value in the table itself.

**4. Paragraph :** Paragraph tag adds a block of text.

**D. Match the following:**

Column A	Column B
1. TR	refers to table heading.
2. TD	adds bullets and numbers.
3. TH	refers to an ordered list.
4. Heading	is the alignment of text.
5. Alignment	divides the section of text.
6. List tag	refers to an unordered list.
7. OL	refers to a table row.
8. UL	refers to table data.

**Activity Time**

Do it yourself

**HOTS**

Do it yourself

**Lab Activity**

Do it yourself

**Project**

Do it your self

**Chapter - 7**

**In-Text**

Put a tick (✓) for each of the correct statements and across (X) for each of the incorrect ones.

- (a) Control is a special type of an object on a form so as to enable a user's interaction. ✓
- (b) Command buttons generally cause an action to occur when they are clicked. ✓
- (c) Label is a graphics control which is used for displaying text. ✓

### **Exercise**

#### **A. Answer the following questions:**

1. A control is a special type of an object on a form so as to enable a user's interaction. In VB, all controls appear inside the forms. Controls must have names; they have properties that define positions, sizes and colours of their appearance.
2. Select the picture box icon in the toolbox and place one on a form. Make sure that it is selected.
  - ✓ Click on Open and select the picture from the file.
  - ✓ Click on the small button to the right of the picture property. The loaded picture dialog appears.
  - ✓ Now, the picture appears in the picture box.
3. Double click on the code window and write the code. This is known as Code Editor Window.
4. Visual Basic arithmetic operators are +, -, × and /.

#### Data Type

- |           |            |             |
|-----------|------------|-------------|
| 1. String | 2. Integer | 3. Long     |
| 4. Single | 5. Double  | 6. Currency |
| 7. Date   | 8. Boolean | 9. Bytes    |

## 10. Objects

### Comparison Operators

=, >, <, <> are comparison operators.

### Logical Operators

- |        |         |       |        |
|--------|---------|-------|--------|
| 1. Not | 2. And  | 3. OR | 4. XOR |
| 5. Eqv | 6. Like | 7. Is | 8. Imp |

### String Operators

A string operator is used for joining two or more strings, e.g. "Golden" & "Time" will return to "Golden Time", the concatenated string.

The "&" operator is used for joining two words.

5. A variable stores some values while your program is running.

Syntax :

Dim<varname>[As<

Datatype][,<varname>[As<Datatype>]]

1. Dim is the keyword that tells VB that a variable is being declared.
2. <Varname> is the variable name.
3. As is another keyword that tells VB the datatype of the variable.
4. <Datatype> is a type of data, e.g. integer, string, char, etc.

### B. Fill up the blanks:

1. logical
2. String
3. Comparison
4. & operator
5. A Variable
6. Private, Module, Public
7. list box

8. arithmetical

**C. Write short notes on the following:**

1. Picture box= A picture box is used for displaying a picture over the form. It may display an icon, a bitmap, etc. You can draw a picture box in your code.
2. Command button= Command buttons generally cause an action to occur when they are clicked.
3. Frames= A frame is like a decorative object and is a container for other objects.
4. Shape = The shape control is a graphical control, displayed as an oval, a circle, rectangle, square, rounded rectangle or rounded square.
5. Text box= The user may type into a text box at runtime. It is sometimes known as an edit control. The text box may display large amounts of text which the user may scroll through.

**D. Match the following:**

- |                      |   |
|----------------------|---|
| 1. Logical operators | displays a picture on the form.                           |
| 2. String operators  | allows you to choose either of the options.               |
| 3. DIM               | are, or and, not  |
| 4. Option box        | is the keyword that tells VB that a variable is declared. |
| 5. Picture box       | join two or more strings.                                 |

**E. Tick (✓) the correct answer:**

## Chapter - 8

1.b    2.b    3.b    4.b    5.a    6.a    7.c

### In-text

Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.

- (a) A declaration is a group of variables with a specific type of data. ✓
- (b) An expression represents a number of characters. ✓
- (c) Count is not an identifier. ✗

### Exercise

#### A. Answer the following questions:

1. A declaration is a group of variables with a specific type of data. All variables must be declared before executing statements.

Example: C++ program contains the given types of declarations:

```
int      a, b, c;
float    root 1;
char     sum ;
```

Thus, a, b, c are declared to be integer variables. Root 1 is a floating-point variable. Sum is a character-type variable. int a, b, c may also be written as follows:

```
int  a;
int  b;
int  c;
```

2. An expression represents a number or a character. It may consist of a constant, a variable and an array of elements. It may also contain expressions

that are interconnected by one or more operators.

Example:                      Simple expressions

1.     a + b
2.     a == b
3.     c = a + b
4.     ++ I

### 3. Compiling a Program

Compiling translates the source code into the object code that is a machine language.

- a. Click on Compile menu.
- b. Now select Compile option or press Alt+ F9 keys from the keyboard.
- c. If some errors are there, debug them and compile again.

Executing a Program

- a. Click on Run menu.
- b. Then select Run option or press Ctrl+F9 keys.
- c. It will show you output in the output window.

### 4. Self

**B. Tick (✓) the correct statements and cross (✗) the incorrect ones.**

1. C++ program consists of one or more modules called functions. ✗
2. All variables must be declared after executing the statements. ✗
3. An expression represents a number or a character. ✓
4. Cout receives input through the mouse. ✗
5. Alt +F9 is the keyboard shortcut for compiler option. ✓
6. An array is a list of data elements of some types. ✓

7. In VB, you may change the font, size and style of the label by clicking over Font Property. ✓
8. In C++, a declaration is a group of variables with a specific data type. ✓
9. In C++, an expression represents a number or a character. ✓
10. When you run a C++ program, the first executed statement will be at the beginning of a function known as Main ( ). ✓

**C. Fill in the blanks:**

- |   |              |
|---|--------------|
| 1. Ctrl+F9                              | 2. Compile   |
| 3. Goto File Menu                       |              |
| 4. Cin                                  | 5. keyboard  |
| 6. Iostream.h                           | 7. next      |
| 8. environment for developing & editing |              |
| 9. .cpp                                 | 10. box      |
| 11. input                               | 12. function |

**D. Match the following:**

- | A              | B   |
|----------------|---|
| 1. Expressions | causes the computer to carry out some action.     |
| 2. Main ( )    | is an identifier.                                 |
| 3. Cout        | consists of many functions, characters.           |
| 4. Arrays      | represent a number or a character.                |
| 5. Statement   | is a list of data elements of some types of data. |

**E. Define the following terms:**

1. **Cout=** Cout is an identifier. It is predefined in turbo C++. The operator << is known as the insertion or put to operator.
2. **Cin=** It represents data coming from the keyboard.
3. **Preprocessor Directive =** The first line of the program,  
#include <iostream.h>  
It looks like a program statement, but in fact it is not. It starts with a number sign (#). It is known as a preprocessor directive.
4. **Array=** An array is a list of data elements of some types of data. Every element of an array is identified by an index number.

**F. Choose the correct options:**

- |      |      |      |      |
|------|------|------|------|
| 1. a | 2. c | 3. b | 4. a |
| 5. c | 6. a | 7. c | 8. a |

**HOTS**

Do it yourself

**Lab Activity**

Self

**Chapter - 9**

**In-text**

**Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.**

- (a) Database management is a software which allows access to data contained in a database. ✓
- (b) There are 8 types of DBMS users. ✗
- (c) The language which is used to manipulate data in the database is known as data manipulation language (DML). ✓



## **Exercise**

### **A. Answer the following questions:**

1. DataBase Management System
2. The structure of database is divided into three levels:
  - a. External Level
  - b. Conceptual Level (based on ideas)
  - c. Internal Level
3. There are four types of DBMS users. They are:
  - a. Naive Users
  - b. Online Users
  - c. Application Programmer
  - d. Database Administrator
4. The major components of DBMS are briefly described below:

#### **Data Definition Language (DDL) Compiler**

It converts the data definition statement into a set of tables.

#### **Data Manager**

It is the database control system. The data manager is responsible for interfacing with file system. It also maintains and secures the data.

#### **File Manager**

It takes the responsibility for the structure of the files and manages the file space. It also requests the required block from the disk manager and transmits the required record to the data manager.

#### **Disk Manager**

All physical input and output operations are performed by the disk manager. It transfers the

block of pages requested by the file manager.

### **Query Processor**

It interprets the online users' queries.

### **Telecommunication System**

Online users communicate by sending and receiving messages over communication lines.

### **Data Dictionary**

Information about the structure and usage of data contained in the database is maintained in a data dictionary.

### **B. Write (T) for the True statements and (F) for each of the False statements:**

1. F                      2. F                      3. T                      4. T

### **C. Fill up the blanks:**

1. Data file
2. Input, output
3. File manager
4. Internal level
5. Change the records, relationships
6. DBMS
7. Automated Machine
8. C++, COBOL, FORTRAN, PASCAL
9. DDL Computer
10. Query Processor

### **D. Write short notes on the following:**

1. **DDL:** The language used defining data in the database is known as data definition language (DDL). Such languages are used for creating, modifying and deleting information in the

database.

2. **DML:** The language which is used for manipulating data in the database is known as data manipulation language (DML). This language provides commands to select and retrieve data from the database.
3. **Application Programmer:** These users are professional programmers who write application programs in a programming language, such as C++, COBOL, FORTRAN, PASCAL and include commands that are required to control the database.
4. **Data Independence:** It means the ability to change the records and relationships at one level of a database system without having to change the records and relationships at the next higher level.
5. **Data Manager:** It is the database control system. The data manager is responsible for interfacing with file system. It also maintains and secures the data.

**E. Match the following:**

- |                 |   |
|-----------------|---|
| 1. Data files   | store the information in the database.              |
| 2. File manager | could directly communicate with the database.       |
| 3. Disk manager | maintain and secure the data.                       |
| 4. Data manager | takes responsibility of file structure.             |
| 5. Online users | carry out all physical input and output operations. |
| 6. DBMS         | contains data portion of                            |

database.

**F. Give the example of each of the following:**

**1. DDL: CREATE TABLE**

ALTER TABLE

DROP TABLE

**2. DML: INSERT INTO**

VP DATE

DELETE

## Chapter - 10

**In-text**

**Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.**

- (a) E-commerce stands for electrical commerce. ✗
- (b) Cyberspace is one of the forms of friendly atmosphere for any type of business at a very low expenditure. ✓
- (c) One does not need to have knowledge for using E-commerce. ✓

**Exercise**

**A. Answer the following questions:**

1. E-commerce stands for Electronic Commerce which means business on the Internet. With the development in faster Internet connectivity, Information Technology (IT) has opened the door of E-commerce. Through E-commerce, people earn money on the Internet. E-banking, E-shopping, E-ticketing, etc. are parts of E-commerce.
2. E-banking, E-shopping, E-ticketing, etc. are parts of E-commerce.
3. It reduces expenses in business.  
It increases profits in business.

It maintains friendly relations with consumers.

4. Electronic shopping provides the consumer to buy things on the Internet at cheaper rates. The consumer can order required items out of the whole category of things that get displayed on computer.
5. Yes, customers may check the balance of their bank accounts through the Internet. They may get the cheque books and make requests to stop payment.

By using the Internet, home delivery of items is also possible. It provides the same platform to both the rich and to the poor for doing business. Instead of attractive showrooms, only the websites of the company may be seen. Therefore, all types of business get an opportunity to compete with big industrialists.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. F      2. F      3. T      4. T      5. T      6. T

**C. Fill in the blanks:**

1. account      2. customers      3. sales  
4. electronic      5. things      6. goods

**D. Write short notes on the following:**

1. **E-Business:** The first usage of E-commerce is that it provides several opportunities in the field of business. Cyberspace is one of the forms of friendly atmosphere for any type of business at a very low expenditure. In E-business, it is very necessary to discover the needs and aims of online customers. Secondly, it is important how nicely you advertise the product to your customers.

2. **E-Shopping:** Electronic shopping provides the consumer to buy things on the Internet at cheaper rates. The consumer can order required items out of the whole category of things that get displayed on the computer.
3. **E-Ticketing:** Electronic ticketing enables people to buy online air tickets, train tickets, etc. They may also check the specific arrival and departure timings of trains/planes.

### HOTS

Do it yourself

### Activity Time

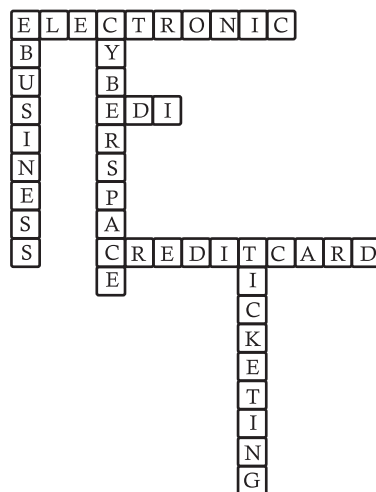
Do it yourself

### Project

Do it yourself

### Problem Solving

Complete the crossword:



## Chapter - 11

### In-Text

Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.

- (a) Soft lifting refers to the copying of a single permitted copy of software and loading it into other computer. ✓
- (b) Software counterfeiting means illegal copying of legal software and selling it. ✓
- (c) Always hurt others' feelings and never respect the user on the other end. ✗

### **Exercise**

#### **A. Answer the following questions:**

1. Illegal copying of computer software is known as software piracy.
2. Soft lifting refers to the copying of a single permitted copy of software and loading it into, other computers without any permission.
3. Uploading and downloading means illegal copying of software without permission while being connected to a network.
4. Software counterfeiting means illegally copying legal software and selling it in a way to make it a real thing.
5. Crime Using a Computer
  - a. Stealing a laptop containing the owner's information on its hard disk is the same as stealing a briefcase that contains the statements of the owner's information.
  - b. Using others' computers may also be another way of stealing valuable documents as well as transcripts.
  - c. Unauthorized changing of data, e.g. changing an official record of a student's work and school transcript.

- d. The criminal reads (or copies) confidential information, but data is neither deleted nor changed.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

- 1.F    2.F    3.T    4.F    5.T    6.F

**C. Fill in the blanks:**

1. Authorization      2. Firewall    3. Copyright  
4. police, courts

**D. Write short notes on the following:**

- 1. Copyright:** It is the only legal right given to a person who uses a software, while other people must ask for permission to use any part of it.
- 2. Patent:** One must have an official right to make use of or sell such a software.
- 3. Trademark:** Software companies must have their names, symbols or designs on their software which cannot be used by anyone else.

**E. Match the following:**

- | A                          | B   |
|----------------------------|---|
| 1. Authentication          | One must have an official right to make use of or sell a software |
| 2. Firewall                | Copying a single permitted copy of software into another computer |
| 3. Soft lifting            | Illegally copying legal software                                  |
| 4. Software counterfeiting | Specific and correct username and                                 |



5. Patent

password

Prevents unauthorized  
Internet user

**HOTS**

Do it yourself

**Problem Solving**

**Complete the crossword:**

S	O	F	T	W	A	R	E													
O																				
F																				
T	R	A	D	E	M	A	R	K	S											
L																				
I																				P
F																				A
T																				T
I																				E
N																				N
G																				T
																				S

**Chapter - 12**

**A. Answer the following questions:**

1. Any criminal activity committed with the help of a computer is called a cyber crime. Cyber crime is an unlawful act wherein the computer is either a tool or a target or both.
2. The cyber criminals constitute different groups/categories. The following are the categories of cyber criminals.

**1. Children and adolescents between the age group of 6-18 years:** The children of this age-group are seen mostly due to the excitement to know and explore the things.

**2.Organized hackers:** This is the group of hackers who use computers to fulfil their political and fundamental objectives.

**3. Professional hackers:** These kinds of hackers are mostly employed to hack sites and get valuable information.

3. Cyber criminals normally cannot harm you until you help them by giving clues about your identity and other details.

4. There are two major categories of criminal activities committed with the help of computers:

Unauthorized Use of a Computer

The unauthorized use of a computer involves stealing a username and password or access to the victim's computer.

Malicious Program

A malicious program is created to tarnish the data on the computer.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T    2. T    3. T    4. T    5. T

**C. Fill up the blanks:**

1. Spammer	2. data
3. Financial	4. latest, updated
5. Discontented	6. Pornography
7. damage	8. Professional

**D. Write one word for each of the following sentences:**

1. Spamming
2. Trojan Horse
3. Worms
4. Professional hackers
5. Cyber Crime
6. Organised Hackers

7. Pornography
8. Forgery
9. Cyber Stalking

**HOTS**

Do it yourself

**E. Match the following:**

- | A                  | B  |
|--------------------|--|
| 1. Online gambling | The crime which is connected to money                                    |
| 2. Financial crime | The crime of copying money, documents, etc. in order to deceive people.  |
| 3. Forgery         | The crime that describes naked people playing games of chance for money. |
| 4. Pornography     | The crime of playing games of chance for money.                          |

**Project**

Do it yourself

**Chapter - 13**

**In-text**

**Put a tick (✓) for each of the correct statements and a cross (X) for each of the incorrect ones.**

- (a) Java file is compiled with "JAVAC" commands. ✓
- (b) Operators are used for performing specific kinds of operations like they do in other programming language. ✓
- (c) In Java, objects store their states in variables. ✓

**Exercise**

**A. Answer the following questions:**

1. Java is the latest programming language that is used for writing applications for PCs, tablets,

mobile phones and other devices using multimedia features.

2. The latest version of Java can be downloaded from [www.java.com/en/download/index.jsp](http://www.java.com/en/download/index.jsp)
3. After installing Java, there are some environment variables that need to be set.
  - CLASSPATH : This env variable should be declared in system variable. This env variable points the location of JDK home directory. It can also contain the address to the folder from which you want jars to get loaded by classloader.
  - JAVA\_HOME : This env variable will point to the location of Java home directory.
4. To know if Java installed on your system is up to date or not, open [www.java.com/en/download/install/jsp](http://www.java.com/en/download/install/jsp)  
Here you can verify the version of your Java.
5. Variables in Java can be defined in different parts of code (Inside class, Inside method, As Method Argument) and can have different modifiers. Depending on these conditions, variables can be divided into four types.
  - Instance Variable
  - Local Variable
  - Static Variable
  - Method Parameter

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T
2. T
3. T
4. T
5. T

**C. Fill up the blanks:**

1. Software
2. Properties

- 3. Command
- 4. Precedence
- 5. Associativity

**HOTS**

Do it yourself

**D. Match the following:**

Operators	Precedence
unary	expr++ expr--
relational	++exper --expr +expr ~!
equality	*/%
bitwise exclusive	+ -
logical OR	<<>>>>
postfix	<> <= >= instance of
ternary	== !=
additive	&
logical AND	OR ^
bitwise inclusive	OR
bitwise AND	&&
assignment	
multiplicative	?:
shift	= += -= *= /= %= &= ^=  = <<= >>= >>>=

**Chapter - 14**

**In-Text**

**Put a tick (✓) for each of the correct statements and a cross (✗) for each of the incorrect ones.**

- (a) .NET is not a single technology but it is a set of technologies that work together. ✓
- (b) .NET framework SDK is available free of cost. ✓
- (c) MMIT mainly uses ASP.NET as a technology for delivering mark up to a wide variety of mobile devices. ✓

## **Exercise**

### **A. Answer the following questions:**

1. Sometime in July 2000, Microsoft announced a whole new software development framework for Windows called .NET in the Professional Developer Conference (PDC). Microsoft also released PDC version of the software for the developers to test. After initial testing and feedback, Beta 1 of .NET was announced. Beta 1 of the .NET itself got a lot of attention from the developer community. When Microsoft announced Beta 2, it incorporated many changes suggested by the community and internals into the software. The overall 'Beta' phase lasted for more than 1 ½ years. Finally in March 2002, Microsoft released the final version of the .NET framework.
2. Contrary to general belief .NET is not a single technology. Rather, it is a set of technologies that work together seamlessly to solve your business problems. The following sections will give you insight into various flavours and tools of .NET and what kind of applications you can develop.
3.
  - a. ASP.NET Web Applications: These include dynamic and data driven browser based applications.
  - b. Windows Form-based Applications: These refer to traditional rich client applications.
  - c. Console Applications: These refer to traditional DOS kind of applications like batch scripts.
  - d. Component Libraries: This refers to components that typically encapsulate some business logic.
  - e. Windows Custom Controls: As with traditional ActiveX controls, you can develop your own

windows controls.

- f. Web Custom Controls: The concept of custom controls can be extended to web applications allowing code reuse and modularization.
  - g. Web Services: These are "web callable" functionality available via industry standards, like HTTP, XML and SOAP.
  - h. Windows Services: They refer to applications that run as services in the background. They can be configured to start automatically when the system boots up.
4. You can develop such varied types of applications. That's fine. But how? As with most of the programming languages, .NET has a complete Software Development Kit (SDK) - more commonly referred to as .NET Framework SDK – that provides classes, interfaces and language compilers necessary to program for .NET. Additionally, it contains excellent documentation and Quick Start tutorials that help you to learn .NET technologies with ease.
5. Microsoft Mobile Internet Toolkit (MMIT) is designed to develop server side applications for mobile devices, such as cell phones, PDAs and pagers. It is different from .NET compact Framework as it is a server side technology. It is ideal for devices that cannot run stand-alone applications.
6. MMIT mainly uses ASP.NET as a technology to deliver markup to a wide variety of mobile devices. As we know that each mobile device has its own set of underlying standards and markup, MMIT shields these details from the developer and allows 'uniform code' for any target device. Based on the capabilities of target device, the output is

rendered.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T      2. T      3. T      4. T      5. T

**C. Fill up the blanks:**

1. .NET      2. server      3. ASP.NET  
4. frame work      5. web

**D. Match the Following:**

- |  |  |
|--|--|
| 1. ASP.NET<br>Web Applications:        | The concept of custom controls can be extended to web applications allowing code reuse and modularization.                                 |
| 2. Windows Form<br>Based Applications: | These include dynamic and data driven browser based applications.  |
| 3. Console<br>Applications:            | These refer to traditional rich client applications.   |
| 4. Component<br>Libraries:             | They are "web callable" functionality available via industry standards like HTTP, XML and SOAP.  |
| 5. Windows<br>Custom Controls:         | These refer to traditional DOS kind of applications like batch scripts.  |
| 6. Web Custom<br>Controls:             | This refers to components that typically encapsulate some business logic.  |
| 7. Web Services:                       | As with traditional ActiveX controls, you can develop your own windows controls.   |
|  | They refer to applications that run as services in the background. They can be configured to start automatically when the system boots up. |



### 8. Windows Services:

#### A. Answer the following questions:

1. The term "cloud", appears to have its origins in network diagrams that represented the Internet, or various parts of it, as schematic clouds. "Cloud computing" was coined for what happens when applications and services are moved into the internet "cloud". Cloud computing is not something that suddenly appeared overnight; in some form, it may trace back to a time when computer systems remotely time-shared computing resources and applications. More currently though, cloud computing refers to many different types of services and applications being delivered in the Internet cloud, and the fact that, in many cases. The devices used for accessing these services and applications do not require any special applications.
2. For service developers, making services available in the cloud depends on the type of service(s) and the device(s) being used to access it. The process may be as simple as a user clicking on the required web page, or could involve an application using an API accessing the services in the cloud.

Telcos are starting to use clouds to release their own services and those developed by others, but using Telco infrastructure and data. The expectation is that the Telco's communications infrastructure provides a revenue generating opportunity.

3. Mobile computing systems are computing systems that may be easily moved physically and whose computing capabilities may be used while they are being moved. Examples are laptops, personal digital assistants (PDAs), and mobile phones. By distinguishing mobile computing systems from other computing systems, we can identify the distinctions in the tasks that they are designed to perform, the way that they are designed, and the way in which they are operated. There are many things that a mobile computing system can do that a stationary computing system cannot do; these added functionalities are the reason for separately characterizing mobile computing systems.
4. A personal digital assistant (PDA), also known as a palmtop computer, or personal data assistant, is a mobile device that functions as a personal information manager.
5. A smartphone is a mobile phone built on a mobile operating system, with more advanced computing capability and connectivity than a feature phone.
6. Tablet computers are larger than a mobile phone or personal digital assistant. They are a type of mobile devices integrated into a flat touch screen and primarily operated by touching the screen. No physical keyboard is placed in them. It often uses an onscreen virtual keyboard, a passive stylus pen, or a digital pen. Normally, a tablet does not have an integrated keyboard but it can be connected to a wireless or a USB keyboard, while a notebook computer has an integrated keyboard that can be hidden by a slide joint.

**B. Write (T) for each of the True statements and (F) for each of the False ones:**

1. T    2. T    3. T    4. T    5. T    6. T

**C. Fill up the blanks:**

- |                |                        |
|----------------|------------------------|
| 1. cloud       | 2. Sales fore.com runs |
| 3. model       | 4. 2010                |
| 5. Platform    | 6. access              |
| 7. application | 8. Reliability sites   |
| 9. system      | 10. Companies          |

**Activity Time**

Do it yourself

**D. Tick (✓) the correct options:**

- |      |      |      |     |
|------|------|------|-----|
| 1. a | 2. a | 3. b | 4.a |
|------|------|------|-----|

**Problem Solving**

**Explain the following editing tools:**

1. When in the cloud, communications services can extend their capabilities, or stand alone as service offerings, or provide new interactivity capabilities to current services.

Cloud-based communications services enable businesses to embed communications capabilities into business applications, such as Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) systems. For "on the move" business people, these can be accessed through a smartphone, supporting increased productivity while away from the office.

These services are over and above the support of service deployments of VoIP systems, collaboration systems, and conferencing systems for both voice and video. They can be accessed from any location and linked into current services to extend their capabilities, as well as stand alone as service offerings.

In terms of social networking, using cloud-based communications provides click-to-call capabilities from social networking sites, access to Instant Messaging systems and video communications, broadening the interlinking of people within the social circle.

2. The term "cloud", appears to have its origins in network diagrams that represented the Internet, or various parts of it, as schematic clouds. "Cloud computing" was coined for what happens when applications and services are moved into the internet "cloud". Cloud computing is not something that suddenly appeared overnight; in some form, it may trace back to a time when computer systems remotely time-shared computing resources and applications. More currently though, cloud computing refers to the many different types of services and applications being delivered in the Internet cloud, and the fact that, in many cases, the devices used for accessing these services and applications do not require any special applications.
3.
  - Google — Has a private cloud that it uses to deliver many different services to its users, including email access, document applications, text translations, maps, web analytics, and much more.
  - Microsoft — Has Microsoft® Sharepoint® online services that allow for content and business intelligence tools to be moved into the cloud, and Microsoft currently makes its office applications available in a cloud.
  - Salesforce.com — Runs its application set for its customers in a cloud, and its Force.com and Vmforce. com products provide developers with platforms to build customized cloud services.

4. Once a cloud is established, how its cloud computing services are deployed in terms of business models can differ depending on requirements. The primary service models being deployed are commonly known as:

- Software as a Service (SaaS) — Consumers purchase the ability to access and use an application or service that is hosted in the cloud. A benchmark example of this is Salesforce.com, as discussed previously, where necessary information for the interaction between the consumer and the service is hosted as part of the service in the cloud.

Also, Microsoft is expanding its involvement in this area, and as part of the cloud computing option for Microsoft® Office 2010, its Office Web Apps are available to Office volume licensing customers and Office Web App subscriptions through its cloud-based Online Services.

- Platform as a Service (PaaS) — Consumers purchase access to the platforms, enabling them to deploy their own software and applications in the cloud. The operating systems and network access are not managed by the consumer, and there might be constraints as to which applications can be deployed.
- Infrastructure as a Service (IaaS) — Consumers control and manage the systems in terms of the operating systems, applications, storage, and network connectivity, but do not themselves control the cloud infrastructure. Also known are the various subsets of these models that may be related to a particular industry or market. Communications as a Service (CaaS) is

one such subset model used for describing hosted IP telephone services. Along with the move to CaaS is a shift to more IP-centric communications and more SIP trunking deployments. With IP and SIP in place, it can be as easy to have the PBX in the cloud as it is to have it on the premise. In this context, CaaS could be seen as a subset of SaaS.

5. Dynamic Provisioning — Allows for the provision of services based on current demand requirements. This is done automatically using software automation, enabling the expansion and contraction of service capability, as needed. This dynamic scaling needs to be done while maintaining high levels of reliability and security.
6. Platform as a Service (PaaS) — Consumers purchase access to the platforms, enabling them to deploy their own software and applications in the cloud. The operating systems and network access are not managed by the consumer, and there might be constraints as to which applications can be deployed.
7. Deploying cloud computing can differ depending on requirements, and the following four deployment models have been identified, each with specific characteristics that support the needs of the services and users of the clouds in particular ways.
  - Private Cloud — The cloud infrastructure has been deployed, and is maintained and operated for a specific organization. The operation may be in-house or with a third party on the premises.
  - Community Cloud — The cloud infrastructure is

shared among a number of organizations with similar interests and requirements. This may help limit the capital expenditure costs for its establishment as the costs are shared among the organizations. The operation may be in-house or with a third party on the premises.

- Public Cloud — The cloud infrastructure is available to the public on a commercial basis by a cloud service provider. This enables a consumer to develop and deploy a service in the cloud with very little financial outlay compared to the capital expenditure requirements normally associated with other deployment options.
- Hybrid Cloud — The cloud infrastructure consists of a number of clouds of any type, but the clouds have the ability through their interfaces to allow data and/or applications to be moved from one cloud to another. This can be a combination of private and public clouds that support the requirement to retain some data in an organization, and also the need to offer services in the cloud.

8. yes

## Project

Do it yourself



National Cyber Olympiad-1

1. c   2. b   3. a   4. d   5. a   6. d   7. b   8. b  
9. a   10. d   11. a   12. c   13. d   14. d   15. b  
16. c   17. b   18. c   19. d   20. a   21. a   22. d  
23. a   24. d   25. b   26. c   27. d   28. a   29. d  
30. c