

# self Assessment Test-1

## SOLUTIONS

1. Internet is a network of computer networks which operate world-wide using a common set of communication protocols. Intranet is an inter-connected network within one organisation that uses web technologies for sharing the information internally. **(1 mark for correct difference)**
2. Video Conferencing
3. • The Speed of 4G is about 10 times faster than 3G.  
• We can stream audio and video content using 4G. **(½ mark for each correct difference)**
4. Each NIC (Network Interface Card) has a universally unique address assigned to it by its manufacturer. This address is known as the MAC (Media Access Control) address of the card. It means that a machine with a NIC can be identified uniquely through its NIC's MAC address. MAC address of an NIC is permanent and does never change.  
MAC addresses are 12-digit hexadecimal (6 bytes or 48 bit) numbers. By convention, MAC addresses are usually written in one of the following two formats:  
MM:MM:MM:SS:SS:SS  
MM-MM-MM-SS-SS-SS **(1 mark for explanation and 1 mark for example)**
5. IMAP is a standard protocol for accessing e-mail from a local server. A simpler e-mail protocol is Post Office Protocol version 3 (POP3), which download mail to the computer and does not maintain the mail on the server. In IMAP, e-mails are stored on the server, while in POP3, the messages are transferred to the client's computer when they are read. **(1 mark for each correct difference)**
6. E-Governance :  
**(ii)** On-line application submission for change of address in the passport.  
**(iii)** On-line bill payment of water charges to Jal Board of any state.  
E-Learning:  
**(i)** On-line experiments in a virtual laboratory of a college.  
**(iv)** On-line tutorials for physics. **(½ mark for each correct answer)**
7. TCP/IP stands for Transmission Control Protocol / Internet Protocol.  
TCP/IP is a set of rules (protocols) governing communications among all computers on the Internet. More specifically, TCP/IP dictates how information should be packaged (turned into bundles of information called packets), sent, and received, as well as how to get to its destination. TCP/IP is a combination of two separate protocols: TCP (Transmission Control Protocol) and IP (Internet Protocol). The Internet Protocol standard dictates the logistics of packets sent out over networks; it tells packets where to go and how to get there.  
The Transmission Control Protocol is responsible for ensuring the reliable transmission of data across Internet-connected networks. TCP checks packets for errors and submits requests for re-transmissions if any are found. **(1 mark for full form, 1 mark for explanation)**
8. Electronic mail, also known as email or e-mail, is a method of exchanging digital messages from a sender to one or more recipients.  
Modern email operates across the Internet or other computer networks. Some early email systems required that the sender and the recipient, both be online at the same time, in common with instant messaging. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver and store messages. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to an email server, for as long as it takes to send or receive messages.  
An Internet email message consists of three components, the message envelope, the message header, and the message body. The message header contains control information, including, minimally, an originator's email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp.

Avoiding spam mails

1. Create a filter that suspects and moves spam mails.
2. Do not register for any online company's advertisement or survey.

(1 mark for definition and 2 marks for explanation)

9. ISP's provide Internet in the following forms:

(i) **Dial-up Connection:** It uses a telephone line or cable to dial into an ISP and a modem attached to a computer. The ISP helps establish a modem to modem link, which is then routed to the internet. The user is connected temporarily to the internet through any service provider.

(ii) **Broadband Connection:** It is a high speed Internet access. Broadband connectivity doesn't even disturb the telephone use. It carries both voice and data over a single wire. Voice uses the lower end of frequency spectrum while the data uses the higher end. The same telephone line is thus, split in two separate channels. Broadband connection speeds are measured in mbps (megabits of data per second). Broadband service is available in three ways:

(a) **Cable Modem:** It is the same connection that delivers cable TV. It is fast and reliable.

(b) **DSL (Digital Subscriber Line):** It uses an existing phone line but the line for voice calls remains separate.

(c) **Satellite:** It is used where cable modem and DSL broadband technologies are not available. It is slow and can be interrupted by bad weather.

(iii) **Wireless Internet Connection:** It involves the use of technologies such as Wi-Fi, WiMAX and satellites. The wireless technology uses radio or microwaves for transmission of data. (1 mark for each correct way)

10. Mobile technology is indispensable in the modern workplace. Due to its versatility, it offers a range of benefits, but also comes with considerable risks to the business. It is essential to consider both advantages and disadvantages of using mobile technology in business. Examples of mobile IT devices include:

- Laptop, tablets and netbook computers
- Smartphones
- Global Positioning System (GPS) devices
- Wireless debit/credit card payment terminals

**Advantages:**

- Higher efficiency and productivity of staff
- The quality and flexibility of services offered to customer
- The ability to accept payments wirelessly
- Improved networking capabilities

**Disadvantages:**

- **Costs:** New technologies and devices are often costly to purchase and require ongoing maintenance and upkeep.
- **Workplace distractions:** As the range of technologies and devices increases, so does the potential for them to disrupt productivity and work flow in the business.
- **Additional training needs:** Staff may need instructions and training on how to use new technology.
- **Increased IT security needs:** Portable devices are vulnerable to security risks, especially if they contain sensitive or critical business data.

(1 mark for definition, 1 mark for advantage and 1 marks for disadvantage)

11. (i) b, (ii) (a), (iii) (b), (iv) (a), (v) (b), (vi) (b), (vii) (a)

# self Assessment Test-2

## SOLUTIONS

1. `<P> Hello <FONT SIZE="+2"> World </FONT></P>` (1 mark for correct code)

2. `img.`

3. A CSS rule is a grouping of one or more CSS properties which are to be applied to one or more target HTML elements.

```
div { border: 1 px solid black; font-size: 18 px; }
```

(½ mark for CSS rule and ½ mark for example)

4. `<html>`

`<head>`

`<title>example</title>`

`<h1><font color="blue" face="Comic Sans MS">PACE Computer Education </font>`

`</h1>`

`</head>`

`<body bgcolor="green" text="red" align="center">`

`<font size="15" face="Brush script"> Education is the<br>`

ability to listen to almost <br>

anything without<br>

losing your temper<br>

or your <br>

self confidence</font>

`</body>`

`</html>`

(1 mark for HTML structure with title tag and 1 mark for body part)

5. `<html>`

`<head>`

`<title> example </title>`

`</head>`

`<body>`

`<DL>`

`<DT>glunch</DT>`

`<DD>a look of disdain, anger, or displeasure </DD>`

`<DT>glumpy</DT>`

`<DD>sullen, morose, or sulky </DD>`

`</DL>`

`</body>`

`</html>`

(½ mark for HTML tag and ½ mark for body tag and 1 mark for <DL> tag part)

6. (a) **<Table border=n>**: Here, n is any numerical value 1,2,3 etc. which specifies table border boldness.

(b) **<table bgcolor="n">**: Here, n stands for any color name/hex color code/rgb code which provides background color to table.

(c) **<td bgcolor="n">**: Here, n stands for any color name/hex color code/rgb code which provides background color to cell.

(d) **<td width=n>**: Here, n is any numerical value 1,2,3 etc. which specifies table cell with width.

(e) **<a href="n">**: Here, n stands for any URL.

(½ mark for each part)

7. **Method:** The Method attribute specifies how to send form data (the form data is sent to the page specified in the action attribute). The form data can be sent as URL variables (with method="get") or as HTTP post transaction (with method=" post").

**Action:** The Action attribute submits collected information to a processing agent (a file containing a script to process this information). **(1 mark for each attribute)**

8. CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. It is a way to provide style to HTML. Whereas the HTML is the meaning or content, the style sheet is the presentation of that document. DHTML is merely a browser feature- or enhancement that gives your browser the ability to be dynamic. **(2 marks for correct answer)**

9. The HR element is used to draw a horizontal dividing line completely across the screen. This can be used to logically separate blocks of text.

**ALIGN:** This attribute positions the rule on the page either LEFT, RIGHT or CENTER.

**NOSHADE:** This attribute renders the tag as an unshaded dark grey line without the hollow and slightly 3D appearance.

**SIZE:** This is a measurement of how thick the line is.

**WIDTH:** It can be set as a number or a percentage.

**COLOR:** It sets the color of the rule.

*Example:*

```
<HTML>
<BODY >
<H1>This is an example </H1>
<HR size="4" width="80%">
<HR size="10" width=40>
<HR size="10" width="40" align="center">
<HR size="10"width="40"align="center"
noshade>
<HR size="10" width="40" align="center"
color="blue">
</BODY>
</HTML>
```

**(1 mark for explanation, 1 mark for attributes and 1 mark for example)**

10. `<html><head><title>Table </title></head>`  
`<body>`  
`<table border="1">`  
`<tr><th align="center": Rowspan="2">SERIAL NO</th>`  
`<th rowspan="2">CLASS</th>`  
`<th colspan="3">NUMBER OF STUDENTS </th></tr>`  
`<tr><td>ENGLISH</td><td>HINDI</td>`  
`<td>REGIONAL</td></tr>`  
`<tr align="center"><td align="center">1 </td>`  
`<td align="center">XA</td>`  
`<td>35</td><td>10</td><td>6</td></tr>`  
`<tr align="center"><td align="center">2`  
`<td><td align = "center">XB</td>`  
`</td>31</td><td>15</td><td>4</td>`  
`</table></body></html>`

**(3 marks for correct code)**

```

11. <html><head>
    <title>Form</title></head>
    <body>
    <H3><center> JOB ENQUIRY FORM </H3><br><br>
    <form action="mailto:student@study.com" method="post"><table align="center">
    <tr>
    <td align="right">User ID: </td>
    <td colspan="3" input type="text" name="uid" size="35px"></td>
    </tr>
    <tr>
    <td align="right">Password: </td>
    <td colspan="3" input type="password" name="pass" size="35px"></td>
    </tr>
    <tr>
    <td align="right">Gender: </td>
    <td><input type="radio" name="gender" value="male" checked>Male</td>
    <td><input type="radio" name="gender" value="female">Female</td>
    <td><input type="radio" name="gender" value="other"> Other </td>
    </tr>
    <tr>
    <td align="right">Interested in: </td>
    <td><input type="checkbox" name="lang" value="html"> HTML</td>
    <td><input type="checkbox" name="lang" value="C"> C</td>
    <td><input type="checkbox" name="lang" value="java"> Java</td></tr>
    <tr>
    <td>Describe Your Skills:</td>
    <td colspan=3>
    <textarea name="skills" rows="5" cols="35px"></textarea></td>
    </tr>
    <tr>
    <td>
    </td>
    </tr>
    <td colspan="2"><input type="submit" value="Submit"></td><td>-</td>
    </tr>
    </table>
    </form>
    </body>
    </html>

```

12. (i) Open Notepad and type the following HTML code. You will observe that each paragraph follows a different style of formatting

```

<!DOCTYPE html>
<html><head>
<title>Types of Rocks</title>
</head>
<body>
<h1>Different Type of Rocks</h1>
<h2>Igneous Rocks</h2>

```

```
<p style="font-size: xx-large; color: maroon; text-align: centre; border: solid 4px 4px blue;">
```

The earth's core is made up of molten rock. when a volcano erupts this molten rock flow out. It later cools and solidifies to form igneous rock. These rocks contain minerals like mica and magnesium. Granite, pumice and obsidian are examples of igneous rocks.

```
</p>
```

```
<hr style="margin-left: 200px; margin-right: 100px; border-width: thick; border-style: double; color: blue;">
```

```
<h2> Sedimentary Rocks </h2>
```

```
<p style="font-size: x-large; color: green; text-align: right; border: dashed 3px orange">
```

Rain, wind, rivers flowing down mountains, etc., wear down rocks on mountains and carry small bits of them down to deposit elsewhere. Repeated deposition in the lower layers and hardens them into rock. Such rocks are called sedimentary rocks. Sandstone, Limestone and Shale are some of the examples of sedimentary rocks.

```
</p>
```

```
<hr style="border: 4px groove yellow ">
```

```
<h2>Metamorphic Rocks</h2>
```

```
<p style="font-size: medium; color: navy; text-align: left; border: groove 4px Pink">
```

Metamorphic rocks are rocks that may be formed due to physical and chemical changes in igneous, sedimentary or older metamorphic rocks. These changes happen due to heat and pressure. Marble, slate, Quartzite are some examples of metamorphic rocks.

```
</p>
```

```
</body>
```

```
</html>
```

**(ii)** Save the document as example.html

**(iii)** Open Internet Explorer and then open the document example.html in it.

**(1 mark for HTML tag, 1 mark for explanation, 1 mark for steps)**

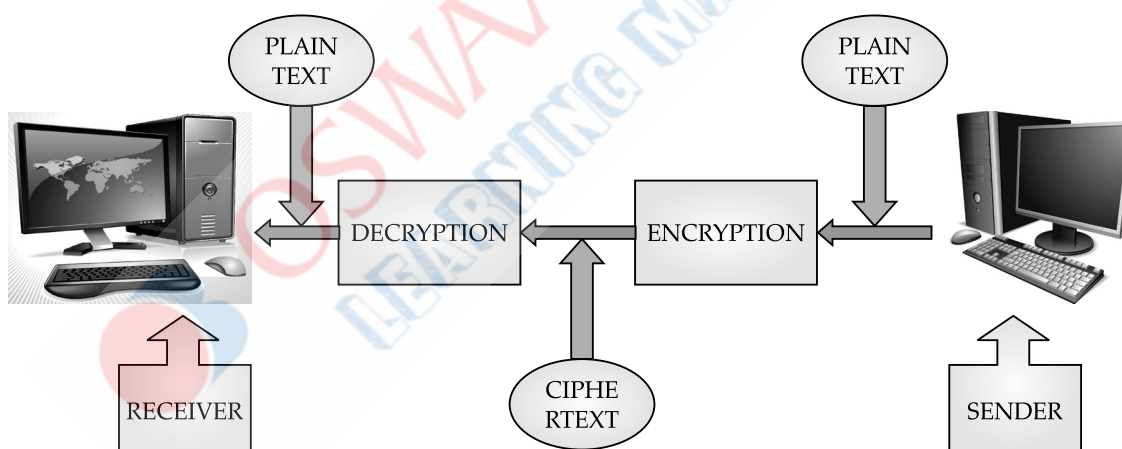




# self Assessment Test-3

## SOLUTIONS

- Computer ethics is a set of moral principles that governs the behaviour of a group or individual that regulate the use of computers. These are like intellectual property rights, privacy concerns and how computers affect society. **(1 mark for correct definition)**
- Information security is about protecting and preserving information. It also ensures preserving the confidentiality, authenticity, availability and reliability of information. **(1 mark for correct answer)**
- (d) All of these
- Freedom of information refers to a citizen's right to access information that is held by the government. The right to information is a fundamental right.  
It helps in creating a more open and democratic society, challenging corruption and enhancing transparency. **(2 marks for correct answer)**
- Free/open-source software movement (FOSSM) or free/libre open-source software movement (FLOSSM) is a social movement with the goal of obtaining and guaranteeing certain freedoms for software users, namely the freedom to run the software, to study and change the software, and to redistribute copies with or without changes. Richard Stallman formally founded the movement in 1983 by launching the GNU Project. Stallman, later established the Free Software Foundation in 1985 to support the movement. **(2 marks for correct answer)**
- Cryptography is a technology which keeps the messages secret from unauthorized access. Sender of the information encrypts the data using a secret code and only the specified receiver can decrypt the data using the same or a different secret code.



To encrypt a message, the message is passed to an algorithm that transforms the message using a key into a meaningless script called cryptogram or ciphertext. The ciphertext can be sent to the intended recipient. The recipient has a key to decrypt the ciphertext back to the original message.

**(1 mark for explanation and 1 mark for process)**

- E-Commerce is the ability to do business online via internet. Consumers no longer need to travel to shops or stores to get their daily needs. All they have to do is browse through the Internet and purchase the product needed using their computer connected to the Internet and save their time and energy. **(1 mark for definition and 1 mark for benefits)**
- The Digital Divide, or the digital split, is a social issue referring to the differing amount of information between those who have access to the Internet and those who do not have access. The term became popular among concerned parties, such as scholars, policy makers, and advocacy groups, in the late 1990s. Broadly speaking, the difference is not necessarily determined by the access to the Internet, but by access to ICT (Information and

Communication Technology) and to media that the different segments of society can use. With regards to the Internet, the access is only one aspect, other factors such as the quality of connection and related services should be considered. The problem is often discussed in an international context, indicating certain countries are far more equipped than other developing countries to exploit the benefits from the rapidly expanding Internet. The digital divide is not indeed a clear single gap which divides a society into two groups. Researchers report that disadvantage can take such forms as lower-performance computers, lower-quality or high price connections difficulty of obtaining technical assistance, and lower access to subscription-based contents.

The idea that some information and communication technologies are vital to quality civic life is not new. Some suggest that the Internet and other ICTs are somehow transforming society, improving our mutual understanding, eliminating power differentials, realizing a truly free and democratic world society, and other benefits.

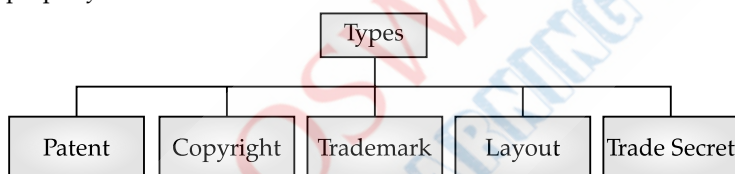
(1 mark for concept)

(2 marks for explanation)

9. Secure Electronic Transaction is a secure protocol developed by MasterCard and Visa in collaboration. Theoretically, it is the best security protocol. It has the following components –
- **Card Holder's Digital Wallet Software** : Digital Wallet allows the card holder to make secure purchases online via point and click interface.
  - **Merchant Software** : This software helps merchants to communicate with potential customers and financial institutions in a secure manner.
  - **Payment Gateway Server Software** : Payment gateway provides automatic and standard payment process. It supports the process for merchant's certificate request.
  - **Certificate Authority Software** : This software is used by financial institutions to issue digital certificates to card holders and merchants, and to enable them to register their account agreements for secure electronic commerce.

(1 mark for definition and 2 marks for relevant points)

10. IPR (Intellectual Property Rights) allow creators, or owners of patents, trademarks or copyrighted works to benefit from their own work or investment in a creation. Owners holding IPR can prevent the use of their intellectual property.



**Trade marks:** Trade Marks have been defined as any sign, or any combination of signs capable of distinguishing the goods or services of one undertaking from those of other undertakings.



**Microsoft**

**Copyright** : Copyright is a legal means of protecting an author's work. It is a type of intellectual property that provides exclusive publication, distribution, and usage rights for the author. Therefore, any original content published on the web is protected by copyright law.

(1 mark for definition and 2 marks for types)

11. (i) (b), (ii) (b), (iii) (b), (iv) (c), (v) (a), (vi) (a), (vii) (b)



# self Assessment Test-4

## SOLUTIONS

1. A script is defined within the Scratch program as one or set of blocks that begins with a hat block. It is used to program the sprites. **(1 mark for correct answer)**
2. Token **(1 mark for correct answer)**
3. pq **(1 mark for correct output)**
4. Sprites are the images on a Scratch computer program screen. Every Scratch program is made up of sprites and the scripts (instructions) that control them. Scripts are programmed to make the sprites do things. A project can have lots of sprites, and each sprite can have lots of scripts. **(2 marks for correct answer)**
5. When the green flag is clicked the sprite will go to the position x:100 y:100 on the stage. The sprite will then pause for 1 second, move downwards by 200 steps, pause for 0.5 seconds, move left 100 steps and turn forward by 90 degrees. The sprite will glide for 1 second to the stage position x:0 y:0 and point facing in a forward direction. **(1 mark for sprite's position and 1 mark for move steps and angle)**
6. The sprite moves before pointing in the correct direction. This will make it move 5 steps in the previously selected direction, causing it to touch colour blue if it happens to be close. **(1 mark for direction and 1 mark for steps)**

7.

Interactive mode	Script mode
In this mode, the result is returned immediately after pressing the Enter key.	In this mode, a file must be created and saved before executing the code to get result.
You are not provided with direct way of editig your code.	You are provided with a direct way of editing your code.

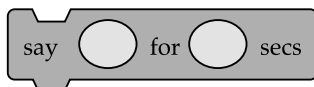
**(1 mark for each correct difference)**

8. 

```
num = int (input ("Enter the number :"))
if (num>0):
    print ("Number is positive")
elif (num<0):
    print ("Number is negative")
else :
    print ("zero")
```

**(½ mark for each statement)**

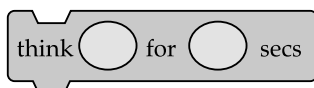
9. Looks blocks are the blocks that control a sprite's look. There are 23 Looks blocks in Scratch 3.0.



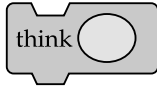
– A speech bubble appears over the sprite and stays for the specified amount of time.



– A speech bubble appears over the sprite and will not go away over time.



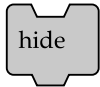
– A thought bubble appears over the sprite and stays for the specified amount of time.



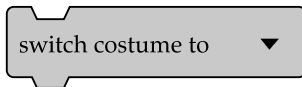
– A thought bubble appears over the sprite and will not go away over time.



– Shows the sprite.



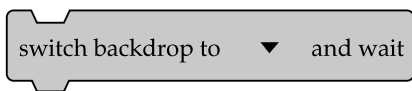
– Hides the sprite.



and



– Changes the sprites/Stage's costume/backdrop to the specified one.



– Like the Switch to Backdrop () block, though it waits until all of the hat blocks triggered by this have completed. (Stage only)



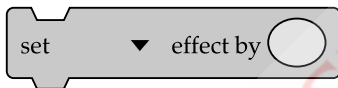
and



– Changes the sprites/Stages costume/backdrop to the next one in the costume list.



– Changes the specified effect by the amount.



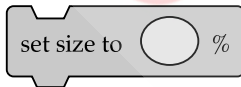
– Sets the specified effect to the amount



– Clears all graphic effects on the sprite.



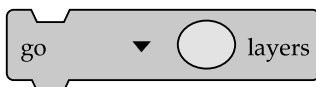
– Changes the sprite's size by the amount.



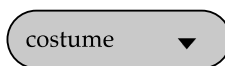
– Sets the sprite's size to the amount.



– Puts a sprite in the front or back.



– Changes the sprite's layer value by the amount



and



– The number or name of the sprite/Stage's current costume/backdrop in the list



– The sprite's size

(2 marks for block's symbols and 2 marks for explanation)

10.

```

when clicked
  set Marks to 0
  set Grade to 0
  set Flag to 0
  hide variable Marks
  hide variable Grade
  repeat until Flag = 1
    ask Enter the marks and wait
    set Marks to answer
    if marks < 33 then
      set Grade to E
      say join Your grade is Grade for 3 secs
      set Flag to 1
    if Marks < 41 then Marks > 32 then
      set Grade to D
      say join Your grade is Grade for 3 secs
      set Flag to 1
  
```

```

if Marks < 61 and Marks > 40 then
  set Grade to C
  say join Your grade is Grade for 3 secs
  set Flag to 1
if Marks < 81 and Marks > 60 then
  set Grade to B
  say join Your grade is Grade for 3 secs
  set Flag to 1
if Marks < 101 and Marks > 80 then
  set Grade to A
  
```

(½ mark for each set, ½ mark for hide and 2 marks for repeat until)

11. You can work in Python with two ways as follows :

- (i) Interactive mode                      (ii) Script mode

(i) Interactive mode : It is a quick way for running the Python code. It executes the code by typing in Python shell. To access the interactive mode in Python follow step as :

Start button → All Programs → Python → IDLE (Python).

A window will appear with >>> sign.

You can write the code and press Enter key to e.g. execute that code.

```
>>> print ("Program")
```

Program

(ii) Script Mode : If you want to run long Python code then interactive mode is not useful for that. Script mode is the way to go in such cases. In script mode, you need to write code then save it with a .py extension. After writing the code, you can run it clicking Run button then Run module or simply press F5.

e.g.

```
a = 10
```

```
b = 5
```

```
c = a + b
```

```
print ('c: ', c)
```

**Output**

```
c : 15
```

(3 marks for correct answer)

12. num = int (input ('Enter a number :'))

```
fact = 1
```

```
for i in range (1, num + 1) :
```

```
    fact = fact * i
```

```
print ('The factorial of', num, 'is', fact)
```

**Output**

```
Enter a number : 5
```

```
The factorial of 5 is 120
```

(3 marks for correct program)

□□□