

**SECTION A [10 Marks]**  
**Answer ALL the Questions**

**Question 1** **[1 x 10]**

**Direction:** For each question, there are four alternatives: A, B, C and D. Choose the correct alternatives and **circle** it. **DO NOT** circle more than **ONE** alternative. If there is more than one choice circled, **NO** score will be awarded.

a) Sonam wants to setup a local area network (LAN) at his workplace. He wants the LAN to be reliable, such that, there is always an alternative route for the data to pass if one route fails. Which network topology is best suited for the task?

A Star topology  
B Tree topology  
C Ring topology  
D Mesh topology

b) Karma is a big fan of football superstar Ronaldo. He is also a keen follower of Portugal National Team. He wants to download images of Ronaldo playing for the Portugal National team, and not for Real Madrid from the Internet. Which Boolean operators and keywords should he use to get the desired images?

A Ronaldo OR Portugal  
B Ronaldo AND Portugal  
C Ronaldo NOT Real Madrid  
D Ronaldo AND (Portugal OR Real Madrid)

c) Sita wants to send New Year wishes to all her friends through an email. She wants to send the email in such a way that her friends do not know who else is getting the New Year wishes. Which email feature would help her do that?

A To  
B Cc  
C Bcc  
D Subject

d) Rajesh is a computer laboratory assistant of a middle secondary school. He has to make sure all computers in the laboratory are functioning properly. Recently, with the start of computer literacy classes, he noticed that the date and time of the computers were changed by the students. He wants to put a restriction on all the computers so that students are not able to change the system's date and time. Which preventive measure of data security should Pema apply?

A Cryptography  
B Identification  
C Authorization  
D Authentication

e) Chuki received an email containing a word document about a project work from her subject teacher, Madam Kinzang. She has instructed her to pass the information to her group members. Which email feature should Chuki use to convey the information to her group members?

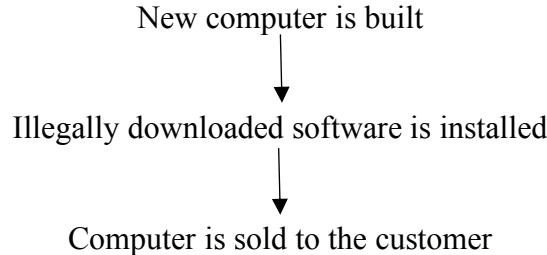
A Send  
B Reply  
C Forward  
D Reply to all

f) Email and text messaging or instant messaging are two popular activities on the Internet. When an email or a message is sent, they are broken down into small packets. Each packet bears addresses of the sender and the destination. These packets do not follow a particular path, instead each packet travel in their own path. On reaching the destination, these packets are reassembled back into the email or the message.

Packets travelling through different routes do not get lost and reach the destination because

A FTP transfers the packets safely.  
B Web Server monitors their movements.  
C Every Packet has address of destination.  
D Internet Protocol (IP) manages their paths.

g)



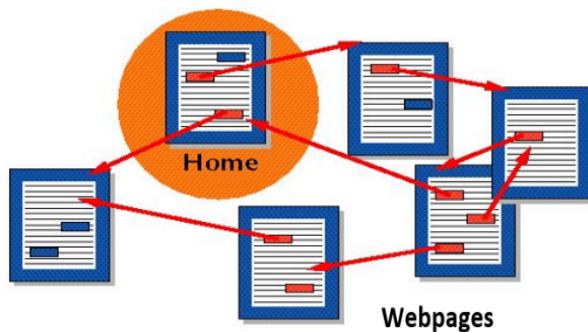
Identify the kind of piracy illustrated in the flow chart.

- A Bootlegging
- B Counterfeiting
- C Internet piracy
- D Hard disk loading

h) Dema is one of the members in a chat group dedicated to discuss about environment issues in Bhutan. As the discussion proceeded, she was asked not to shout in the chat room. Why was she asked not to shout?

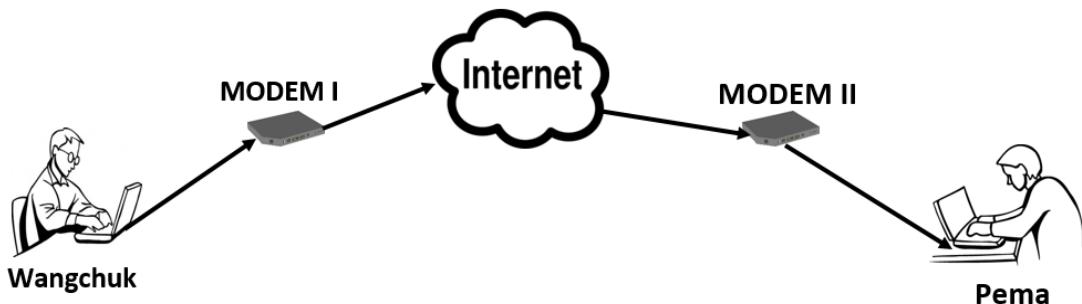
- A She used loud speakers.
- B She used capital letters.
- C She sent a flame message.
- D She sent an angry emoticon.

i) The figure given below shows a diagrammatic representation of the webpages of a typical website. Linking between the webpages is achieved by



- A interlink.
- B hypertext.
- C hyperlink.
- D interconnection.

j) Figure given below illustrates the transmission of a text message.



Wangchuk is sending a text message on a messenger to Pema. What processes are taking place at Modem I and Modem II respectively?

- A Modulation and modulation
- B Modulation and demodulation
- C Demodulation and modulation
- D Demodulation and demodulation

### Section B [10 Marks]

**Answer ALL the questions**

#### Question 2

**Direction:** Fill in each blank with appropriate words or phrases.

**[1 × 10]**

a) A block of text that is appended to the end of an email message, usually consisting of sender's name, address and other business contact information is called \_\_\_\_\_.

b) Ms. Dolkar works as a cashier in Bank of Bhutan. Her job requires the use of computer keyboard throughout the office time. If she is not careful with the use of keyboard, in the long run she will suffer from \_\_\_\_\_.

c) Code of good behaviors on the Internet, such as, while using email, social media, online chat, web forums, website comments and multiplayer gaming is known as \_\_\_\_\_.

d) DrukNet, TashiInfoCom and DrukCom are the \_\_\_\_\_ companies in Bhutan that provides customers with Internet access against a fee.

e) Copying a document from a file server to your computer is known as \_\_\_\_\_.

f) If the website is a book, the \_\_\_\_\_ is like the pages of that book.

g) To access files on your home computer from your office, you can use \_\_\_\_\_.

h) If you don't want the Google Chrome to remember your browsing activities, you can browse the Internet in incognito mode or private mode. This mode will not keep your online activity record in browser's \_\_\_\_\_.

i) To send an image file to your friend through an email, you can send it as \_\_\_\_\_.

j) To increase the Internet connection bandwidth, we can use \_\_\_\_\_ line to transmit data over digital telephone line.

### **Section C [10 Marks]**

**Answer ALL the questions**

**Question 3** **[2 × 5]**

a) Software companies have taken numerous steps to protect their software from counterfeiters. Describe TWO authentication features used by software companies on their products.



b) State TWO differences between web address and email address.


c) Many companies provide free messaging apps, such as, Facebook messenger, WeChat, Skype, and so on. These apps can be used to send instant messages, share photo or video, carry out group chats, record and send voice messages and conduct live video chat. Although these apps are useful, there are some risks and things to watch out for. Describe TWO common risks involved with the use of these apps.



d) An office in Thimphu has ten computers connected to its local area network. LAN is also connected to the Internet. Although the computers in the office had a genuine and valid antivirus software installed in them, these computers were found to be infected with virus.

Describe TWO measures to protect the computers from virus infection.


e) Yangchen Technologies has two offices, one in Paro and other in Thimphu. The owner of the company wants to connect the local area networks of these offices with each other. The distance between Paro and Thimphu is roughly 50 kilometers.

The company has offered you the contract to plan and design the network. Briefly describe your plan with appropriate justifications to support your network design.
