

Information and Communication Technology

Class Seven



National Curriculum and Textbook Board, Bangladesh

Prescribed by the National Curriculum and Textbook Board
as a textbook for class seven from the academic year 2013

Information and Communication Technology

Class Seven

Revised for the year 2025

NATIONAL CURRICULUM AND TEXTBOOK BOARD, BANGLADESH

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Preface

The importance of formal education is diversified. The prime goal of modern education is not to impart knowledge only but to build a prosperous nation by developing skilled human resources. At the same time, education is the best means of developing a society free from superstitions and adheres to science and facts. To stand as a developed nation in the science and technology-driven world of the 21st century, we need to ensure quality education. A well-planned education is essential for enabling our new generation to face the challenges of the age and to motivate them with the strength of patriotism, values, and ethics. In this context, the government is determined to ensure education as per the demand of the age.

Education is the backbone of a nation and a curriculum provides the essence of formal education. Again, the most important tool for implementing a curriculum is the textbook. The National Curriculum 2012 has been adopted to achieve the goals of the National Education Policy 2010. In light of this, the National Curriculum and Textbook Board (NCTB) has been persistently working on developing, printing, and distributing quality textbooks. This organization also reviews and revises the curriculum, textbook, and assessment methods according to needs and realities.

Secondary education is a vital stage in our education system. This textbook is catered to the age, aptitude, and endless inquisitiveness of the students at this level, as well as to achieve the aims and objectives of the curriculum. It is believed that the book written and meticulously edited by experienced and skilled teachers and experts will be conducive to a joyful experience for the students. It is hoped that the book will play a significant role in promoting creative and aesthetic spirits among students along with subject knowledge and skills.

The education policy has made Information and Communication Technology compulsory in all streams of the education from grade VI-XII to introduce the concepts as in acquiring literacy in this subject well as to make the students proficient in information and communication technology. The curriculum and textbooks of this subject have been developed in accordance with this. Hopefully, the textbook of Information and Communication Technology for class VII will make students interested in this subject along with acquiring literacy in Information and Communication Technology.

It may be mentioned here that due to the changing situation in 2024 and as per the needs the textbook has been reviewed and revised for the academic year 2025. It is mentionable here that the last version of the textbook developed according to the curriculum 2012 has been taken as the basis. Meticulous attention has been paid to the textbook to make it more learner-friendly and error-free. However, any suggestions for further improvement of this book will be appreciated.

Finally, I would like to thank all of those who have contributed to the book as writers, editors, reviewers, illustrators and graphic designers.

October 2024

Prof. Dr. A K M Reazul Hassan
Chairman

National Curriculum and Textbook Board, Bangladesh

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First Chapter

Information and Communication Technology in Daily Life



After completing this chapter, we will be able to:

1. explain the use of information and communication technology in daily life;
2. identify the fields of using information and communication technology in workplace;
3. analyse the importance of information and communication technology in workplace;
4. evaluate the impact of information and communication technology in social life;

Lesson 1: Information and Communication Technology in Personal life

New forms of technology frequently come into being in this world though we do not get the information right away. So it does not have any impact on us, but information and communication technology is such a kind of advanced technology which has immensely been influencing our lives since its invention. In this world, there is no one who has not used this technology, or it has not brought about a change in his life.

Information and communication technology is not only used in important state-affairs and in the international events, but also in the lives of ordinary people. If you look around, you will watch that the people of your acquaintance, kin, teachers, classmates, and you yourself in one way or another are using the technology. The textbook which you are reading right now is written by someone, printed by using the information technology, and thus brought before you. So you can read it. There are plenty of examples like this.



Anybody around us can communicate with others over mobile phone whenever they like.



Television is the most widely used medium of entertainment.

If we try to make a list of the various uses of information and communication technology in a human' life, it will never end. In spite of that, let us at least try to record the important parts of their life strongly influenced and guided by this technology.

Personal Communication: The very first instance of using information and communication technology may be personal communication. Almost everyone uses mobile phones, and they can communicate with anyone over mobile phones whenever they like. Perhaps you can realise that our life standard has been progressing forwards since communication with others over telephone has been easier. Now we can do any job with less effort that was unimaginable before.

Entertainment: Nowadays, information and communication technology is not only a way of communication but also an exciting medium of entertainment. Previously people had to purchase a separate machine to



GPS can locate any place on earth

enjoy music, but right now, they can listen to music in a mobile phone. Once camera was solely a commodity of the rich people, but now the ordinary people can take photographs and make videos by using mobile phone. It's gradually being an intelligent device that can manage to do works of different varieties. In the same way, the computer is gradually becoming smaller in size, i.e. from desktop to laptop, laptop to notebook, and notebook to smart phone. It means that we are going to have such an advanced device by which we can perform innumerable jobs.

GPS (Global Positioning System): Before of going anywhere by a transport we have to know the road links. How can a man reach the destination without knowing the road communications? But it is very amusing that nowadays one does not need to know the road links before going anywhere. By analysing the signals transmitted through the satellites moving round the earth, one can easily locate where one is, and by inserting a map in it, one can go anywhere one likes. All the new vehicles have GPS devices that show the driver the way they can choose to go. The first satellite of Bangladesh was sent to the space on the 12th May 2018. This satellite, named Bangabandhu Satellite-1, was launched from the Kennedy Space Center of the U.S. Bangladesh stands at fifty seven of the satellite owning countries of the world.

Group Activity

Suppose that you have decided to stay out without using any technology. Make a list of things that are impossible to do without its help.

Lesson 2: Information and Communication Technology in Personal Life

We use information and communication technology all the time in our personal life. We are so accustomed to using the technology that we do not even notice its inevitability carefully. We can make a list of the activities of an imaginary figure to understand how far the use of this technology has its impact on us. Suppose, the name of the man is Sagar.

He woke up with the sound of the alarm set at 6 am in his mobile phone. Getting off the bed, he suddenly remembered that it was a holiday. He did not need to go to the office. When he was switching off the alarm, the desk calendar caught his attention and reminded him that it was the birthday of his friend, and there was a celebration party in the afternoon at his residence.



Enjoying music by computer

Having washed his face, he ate his breakfast and watched the morning news on television. His heart rejoiced at the news of a bumper paddy crop this year. However, he felt a bit concerned as a depression in the Bay of Bengal might turn into a cyclone.



Reading book by using e-book reader

Having eaten his breakfast, he busied himself with his laptop. At first, he checked his e-mail box. His brother living abroad had sent a family-photograph that was very nice to look at. Sagar decided to fix it to the wall after giving it a nice framing.

He started playing some of his favorite songs after sending replies of the messages via e-mail. Then he started reading a book in his e-book reader. He did not realise how much time was passing.

When he finished reading the book, it was

late. He suddenly remembered there was nothing to eat at home, and he forgot to do the shopping. Then it came into his mind that he could order food through the Internet. They would send it through home delivery. Sagar instantly ordered for his favorite pizza through the Internet.

After some time, a cheerful young man came to his house with the pizza. 'Did you have any problem getting to my house?' Sagar asked him. 'Not at all, I inserted your address on GPS which showed me the way to your house,' he replied.



You can communicate with the whole world by using the computer network sitting in your room

Sagar again browsed the net and collected the latest news of the world while he was taking bites of pizza. An amazing piece of news of science regarding the neutrino was published. He did not know what a neutrino was. So he visited a website and read an informative article about neutrino on wikipedia. Not only that, a movie had been a blockbuster recently, and he thought it was not a bad idea to watch it. He started downloading the film to watch it in the night.

Sagar would go to attend the birthday party of his friend in the afternoon. He should give something to his friend as a gift. His friend likes to read books. So he ordered for a book through the Internet, and it would be delivered in time. He also ordered a book for himself. He checked the balance of his account and transferred some money from his savings to checking account.

Group Activity

Make a list of the works possible to be done by the computer, but are not mentioned here.

When he was about to leave the room, his mobile phone rang. It was a call from his mother. 'How are you, mother?' Sagar asked her. 'I am well, but the power of your father's spectacles has to be changed immediately. He can't see anything clearly,' his mother replied.

'Don't worry. I'll come home next week, and take father to an eye specialist.'

Sagar booked a train-ticket over mobile phone after he had finished talking to his mother. He will inquire about an eye-specialist at e-treatment centre in the night.

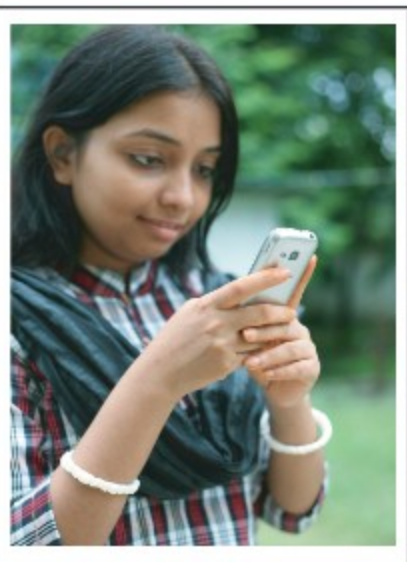
They enjoyed the birthday party at his friend's house. The kids were playing games on the computer and making a real hullabaloo. Sagar returned home after the feast and went to bed early. Lying on bed, he watched the news on television, and saw that the picture sent from the satellite showed that the cyclone changing direction and moving another way. So it was no longer a threat to the country. Sagar felt relieved, and went to sleep a relaxed.

The imaginary account of the life of an imaginary man has ended. Have you noticed how much work he did by using the information and communication technology? Can anybody guess it just before a few days?

Vocabulary: e-book reader, wikipedia, download, e-treatment centre

Lesson 3: Information and Communication Technology at workplace

You know that the learners usually, after finishing their education in school, go to college and from college to university. We have many public universities in our country. After completing the HSC examination, students have to sit for an admission test to get entry into the universities. Once, the admission procedure was very complicated. They had to go to the universities traveling by either bus, or train, or ship, and queue up to collect the forms. Again they had to take the burden of going to the universities physically to submit the forms after filling then up and the collect the fees and the admit cards. After the admission test and the assessment of the answer scripts, the result would be published in the newspaper, and the qualified students got entry into the universities.



The entry process into school, college and university can be initiated by sending SMS through.

In 2009, Shahjalal University of Science and Technology decided to conduct the whole admission process through information technology, and not a single piece of sheet would be used for any work. Candidates did not need to come out of the room for registration. Since 2009, schools, colleges and universities have been using information technology for admission. Everyone can complete the whole application procedure by using a smartphone. A mammoth task has become as easy as pie.



Group Activity

What are the requirements to make your school office a paperless working place?

Though the concept of doing all official jobs without papers has just been initiated in our country, it is not new at all. In 1975, an article regarding this concept was first published in a magazine called “Business Week,” but

then it sounded like science fiction as everyone at the office required a personal computer to materialise the idea. What once was beyond imagination is now a reality. Now, many offices have been turned into a paperless office where nobody writes anything on paper, just writing on a computer is sent to the official concerned. All the computers are connected within a single network, so, all the work is done in the blink of an eye. As paper is not used, the cost is saved



The electronic voting machine designed by the technologists of the country is successfully used in polling.

as well. Paper is produced from trees. As paper is saved, trees are saved too, and the environment remains unharmed. Since ink and toner are not used in writing on papers, chemical substance does not pollute the environment.

Computer monitors are being bigger than it was before with the passage of time. So reading on the screen has been easier. The new generation usually prefers to write using computers than to write on paper. They even prefer to read on the monitor. Once,

photos were printed with chemicals after taking snaps on camera. Nowadays people can directly have a look at the photographs either on computer or on the camera screen before getting the print.

The private banks of our country have also transitioned into paperless offices through the adoption of information technology. As a result, all customer activities, from banking transactions to bank-customer communication, are now conducted online. The key to this transformation in banking operations is the widespread use of online banking systems.



ICT in Banking Sector

These systems enable customers to manage

accounts, transfer funds, and pay bills without relying on physical documents. Mobile banking apps have become essential tools in this system, allowing customers to make transactions, check balances, pay utility bills, and access other services directly from their smartphones.

Group Activity

Arrange a debate between two groups of students on the merits and demerits of using EVM in polling.

Vocabulary: Toner, Electronic Voting Machine

Lesson 4: Information and Communication Technology at workplace

If it is such an advanced step of information technology to run the office without paper, what will be the next step?

Perhaps you have already guessed that we will successfully be able to do the official works without going to office. If we do all the works with the computer, and if they are connected through a network, does it matter if we work sitting in office or lying in bed at home? It does not make any difference, and that is the new concept of an office. In 1983, it was extensively discussed, and in 1994, an office of this concept started working. Those who are the

employees do not physically go to the office, but successfully conduct the office work. Office of this nature is called virtual office.



A large call centre

All the offices cannot be turned into virtual offices, but those that can be transformed are sure to be benefited in many ways. Firstly, they need not to build any multi-storey building for office set up. They need not reach the office building every day and bear the traffic jam. They can simultaneously do the household chores and the office works. In the conventional offices, employees work for a certain time, but in virtual offices, it is possible to continue work after the scheduled time. So the bulk of work in virtual offices can easily be larger than that of the conventional offices.



Today's youth prefer remote work to traditional 9am - 5pm office jobs.

The amazing facilities of a virtual office are yet to describe. Those who work at conventional offices have to remain closer.

As the employees of a virtual office need not to be present physically, they can stay anywhere. So the employees of an office may live in different cities. Many offices run in this way. The

earth moves round on its axis. That is why, when it is day in one hemisphere, it is night in the other hemisphere. When the people of half the earth sleep, the people of another half work, and vice versa. Thus, work goes on for 24 hours.

Now we frequently hear about call centres, and initiatives are taken to set up call centres in our country. There are various types of call centres, and their nature of work is different too. Suppose that somebody has purchased a computer that is not functioning well. That person may phone to the company authority to get the correct instructions on troubleshooting. It seems to them that the person answering their queries is distant. Perhaps the phone call has gone to a remote call centre in another part of the world. The people present

Group Activity

Make a list of what you require to make a virtual classroom in your school.

there know well the answers of what that person wants to know. Thus, the problems are solved and that person themselves becomes satisfied as well. Nowadays the new generation

do not refer to work from 9am - 5pm in the office. They would rather work freely staying at home. Then the periphery of their work remains confined neither to their own city nor to their country, but the whole world becomes their work field. They not only enjoy their job, but also earn a lot. Only a personal computer and an internet connection are required for having all the facilities, but it is true that they should be skilled enough.

So you can understand that employees of an office need not assembled together to work as a cohesive unit. Do you know that the people, who wrote the book you are reading did not confer together, but completed the whole task just by sitting at home?

Vocabulary: Virtual Office, Call centre, Paperless Office

Lesson 5: Information and Communication Technology at workplace

Certainly, you know that Bangladesh is now making large marine vessels and exporting in different countries. Many big rivers flow through this beautiful country. The people of this country are brought up in the midst of rivers, canals, marshes and seas. So it is not surprising that one day they will make marine vessels.



Industrial robot is now doing the dangerous mechanical works.

By cutting large sheets of metals into particular size and shape, and welding them together, large vessels are made. Perhaps, you have watched the act of welding at roadside sheds. If anybody directly looks at the sparks, they will certainly damage their eyes. Those who do the welding work wear a particular type of glass. A tremendous heat is created and tiny pieces of metal scatter around when welding work is done. Will it not be good if this risky job is done by robots and not by people?

You will be happy knowing that people are shifting the responsibilities of risky jobs to robots. People become tired of doing the same job day after day. It is monotonous, and they do not like to do it either. But robots do not get tired of working. They do not even complain about the monotonous job. So people have no longer been working as labourers in big industries of the world. The robots do the heavy works, and the people only monitor it. They can skillfully get the risky jobs done, and with more time, machines will do the heavy jobs instead of humans by using information and communication technology.



This car runs without driver.

Many accidents occur in our country everyday, but it is

predicted that accidents will be reduced after a few decades since people will no longer drive vehicles. In the future, information based devices will control the movements of vehicles. Though it is yet to be used in road transports, it is already being used in air traffic. When big aircrafts fly in the sky, the pilots do not have to do anything. The computer controls everything. Now, fighter aircrafts do not have any pilot. It is frequently known from newspapers that drone aircrafts are fighting and capturing image and video footage.

If we make a list of how information and communication technology is being used in our workplace, it may not end at all. We have already talked about running official communication through information technology, but official meetings are now held using this technology too. Officials of different offices make conferences sitting in their own workrooms. The



A camera drone

concept of e-class room is instituted in our universities. Innumerable people of the country will attend the class of an e-class teacher when they teach in their classroom. Office management cannot be imagined without information technology. Once, a lot of work was required to move a file from one office to another, but an electronic file can move from one place to another in a moment.

Group Activity

Make a list of what you require to make a virtual classroom in your school.

The most important job of an office is to keep accounts. Now they have neither to handle big ledgers nor to do anything manually since information technology provides all the facilities to accomplish everything instantly by computer.

In workplaces, people have to talk, confer and arrange seminars, but all these could be done so easily how that sometimes we become surprised at thinking how they were done previously.

Vocabulary: Robot, Drone aircraft, e-classroom

Lesson 6: Information and Communication Technology in Social Life

ICT for Developing Social Relations: We live in a society. Either you or your friends may live in urban or rural areas, and some of you may stay in school hostels. Our society consists of parents, grandparents, relatives, friends and others. Some of them are service holders, some are businessmen, some are learners, and some stay at home. The society advances through these activities and relationships among people. We use different kinds of tools for different purposes. Once people had to move physically from one place to another just to convey a message, and later an urgent piece of information was circulated through drumbeats. When they learnt how to write, they would communicate through writing letters. Thus the postal department was established, and the system of delivering letters from one place to another came into being. The invention of telegraph and telephone made all these things easier. Now information and communication technology (ICT) has brought all the social needs within reach. Innumerable websites of social communication are opened on the Internet to make these social activities easy along with the conventional tools of ICT.

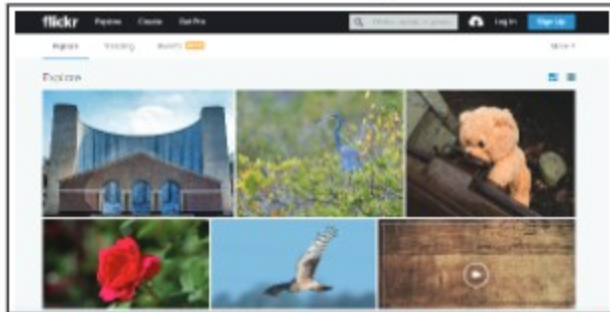


E-cards may be very attractive, and as paper and ink are not used, it's environment friendly.

The followings are the examples of how social relationships are flourishing by the use of ICT:

- Invitation to social functions: Once, people used to invite friends to social functions either by letters or over telephone calls. Now we can invite people through e-mails and short messages (SMS). The advantages of sending e-mails or SMS are that the receivers need not to be present on the other side of the computer or phone when the invitation is sent. They can open and see it at their convenience.
- Greeting on special days: You can send greetings to your friends on their birthday, or on the occasions of Eid, Christmas, and Puja. You can send cards

to people who stay around you, but what about those who stay abroad? You can send cards to them by post, but everybody sends e-cards now. You can send e-cards in two ways. Designing your own e-card when then you can email or picking one from a website of e-cards when you can send to your friend. You do not have to spend any money for that. Rather your friend or relative gets the greeting card through the Internet. Again, SMS through mobile phone is very popular right now. You can easily convey your greetings, concerns or worries to your friends. Nowadays a new tradition is to greet friends by playing their favourite song on FM radio which is very much in vogue. Social ties become stronger through these activities.



There are many attractive websites online for preserving and sending images.



You can watch video in Youtube

sent to the dear ones. There are many websites in the Internet from where you can upload films and share with others. Google Photos and flicker of yahoo are the most popular among all these websites. You can share your recorded videos before the world through video sharing sites. www.youtube.com is the most popular of the sites like this kind.

Group Activity

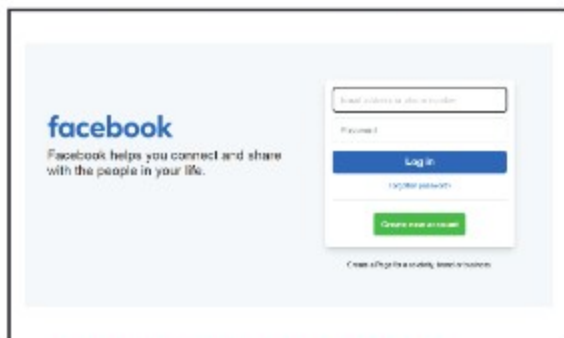
Invite the guests to a function of your class by using SMS through mobile phone.

Vocabulary: SMS, e-card, video sharing site

C. Preservation and Exchange of Memorable Events: We have a tradition and culture of preserving and exchanging memorable and important events since long ago. Those who have the ability can record programme on video. Now mobile phones with built-in camera and video camera are available in the market. So, it is possible to record and preserve any significant moment for the future. Again, these digital video clips can be

Lesson 7: Information and Communication Technology in Social Life

Websites of Social Communication: Information and Communication Technology has made our social communication faster, nicer and more effective. Besides, many of our social affairs are on the Internet. It has been said in the previous lesson that if you want to send or say anything to your dear ones, you have to send either an email or SMS. But what if what you are doing is automatically known to your friends, then how would it be? Some websites of social communication came into being from this idea.



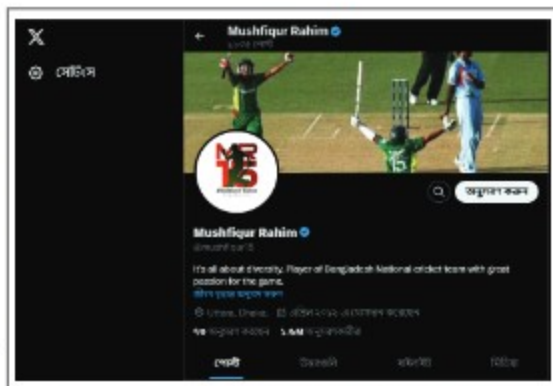
Millions of people use facebook

Information of social functions, professions, liking and disliking, photographs or videos of family affairs etc. can easily be shared through one of those sites. Currently we have hundreds of websites of this nature: www.facebook.com, www.x.com, www.linkedin.com, www.youtube.com. People of almost all languages use these websites.

Of those, facebook is used most. Millions of people are using facebook. The number of users is gradually increasing in Bangladesh. Every user can create a self-introducing webpage either on facebook or on similar websites. The user gives information about themselves and displays photographs, videos etc. in their account from where they can find their friends. Here friend is not meant in the conventional sense. According to facebook, how many people are acquainted with they someone will all be their friends. If your friend has a facebook account and if you ask them to be your friend, you will be friend after getting their consent. Similarly, if anybody sends you a friend request and you accept it, you will be their friend too. Thus, you and your friends together will build up your 'network' i.e. 'social network'.

Now your network will become gradually bigger and bigger. You can search for your

primary school classmate who, perhaps now living in Australia, was separated from you for a long time. When you post any information in your profile, it will instantly be visible in a corner of your friends' facebook notification tab. The feeling you send is called 'status' in facebook and post in 'x'. If you like to display any photograph or show any video that can immediately be watched by everyone connected in your network after adding them in your status. Besides, your facebook will remind your friends of your birthday. Then everybody will greet you. Not only your personal emotions, but also advertisements of commodities, circulations of jobs are sent through these social communication websites. Even, social movements are being organised through it.



Small posts can be spread quickly on 'x'

Social media platforms such as Facebook, YouTube, X, WhatsApp, Telegram, and Instagram played a crucial role in the Arab Spring uprisings in the Arab world, particularly in Tunisia, Egypt, Libya, and Syria during 2010-2011. These platforms were also



instrumental in organizing and mobilizing protesters during Bangladesh's 2018 Road Safety and Quota Reformation Movements.

Group Activity

Write what new things you can do by using a social network like facebook.

Vocabulary: Profile, Social Network, Status

Sample Questions:

1. Which invention shows drivers the location of their destination during travel?
a. Computer b. The Internet c. Mobile phone d. GPS
2. Which technology can we use to find out about the tonic Neutrino?
a. Computer b. The Internet c. Land phone d. Mobile phone
3. By using Information and Communication Technology, we can ?
a. read book
b. make banking transactions.
c. play games.

Which one is correct?

- a. i b. i & ii c. ii & iii d. i, ii & iii

Read the chapter below, and answer questions nos. 4, 5 & 6:

Reba was successfully qualified in the HSC examination this year. She wants to get admitted into a university. After watching the advertisement in the newspaper, he instantly applied to the university of Dhaka and Jahangir Nagar for the admission test.

4. Reba can apply using?
i. mobile phone.
ii. the Internet.
iii. the computer.

Which one is correct?

- a. i & ii b. i & iii c. ii & iii d. i, ii & iii

5. The advantage of this application process is ?
i. saving time and money.
ii. lessening physical exertion.
iii. protecting environment.

Which one is correct?

- a. i & ii b. i & iii
c. ii & iii d. i, ii & iii

6. What is the name of the technology Reba used to apply for admission?
a. Mobile technology b. ICT
c. The Internet d. Computer

7. Explain with reason why you picked the answer from the options given to the question number 6.

Second Chapter

Computer Oriented Devices



After completing this chapter, we will be able to:

1. describe the activities of different computer devices.
2. explain the interrelations of different computer devices.
3. identify the devices after drawing their pictures.

Lesson 8: Input Devices

You are familiar with different devices from class VI. Now you will know details of the devices in this lesson.

Computer devices are always upgrading themselves. The most modern device of today becomes old tomorrow. Besides, technological innovations are frequently coming into being. Think of the remote control device of the television. Today, technology-assisted televisions are available that can be operated solely by voice commands. Are you surprised? It is possible to give input by oral commands now. In that case, the remote control device will be outdated. Technology is changing fast. Now that in class VII; when you will study in higher classes, many devices may be housed in a museum. In spite of that, we have to know about the conventional devices being used right now. Though devices will change, the concept of input, storage, processing and output will not change.

Keyboard: The most commonly used input device for the computer is the keyboard. Input is usually given in all the devices of Information and Communication Technology through keyboard. Some commands should be given to have the works done by these devices. We enter commands into the computer by pressing the keys or buttons of the keyboard, and then the devices work as per the commands.

The concept of the modern keyboard came from the typewriter. Letters, numbers and characters are arranged in a line on the keyboard. Although the computer keyboard is similar to that of the typewriter, it has some additional keys for producing actions and commands. Usually English letters and characters are engraved on the keys, but keyboards of other languages are also available in the market. Recently, the Bangladesh Government has ordered to add Bengali layout to mobile phones of all brands.



Computer keyboard

Mouse: You have already used a device called mouse. It's a very popular input device. It is also called a pointing device. Those who invented it first thought that it looked like a mouse. That is why it was called so.



Mouse

Mouse usually has two buttons and a scroll wheel. These buttons are used in different ways to input command in the computer. Different kinds of mouse are currently being used in the world. Common users use the standard mouse.

The position of the mouse is shown on the monitor by a pointer that looks like an arrowhead. The position changes with the movement of the mouse. Commands to the computer are given by pressing the right button. The mouse is most commonly used in a graphics based operating system. Usually a programme is selected by clicking the left button of the mouse with the pointer on the icon of that programme, and a double click opens it. In a laptop, the touchpad does the work of a mouse.



Microphone

Microphone:

It is also an input device. We can enter our voice, songs or any other kinds of sound into the computer through this device. We can see its popularity in the Internet based communication. It was invented long ago as it had been used in telephones. Now it is being used as

an input device to the computer. We use microphone for voice recognition too.

Group Activity

1. Represent after writing the names of the devices that have keyboards though not mentioned here.
2. Make a uniformed list from the representation of every team.

Vocabulary: Scroll wheel, Icon, Voice recognition, Microphone

Lesson 9: Input Devices

Digital Camera: A very familiar as well as popular device now a days is the digital camera. Its used as a computer input device started long after its invention. At first, it was used in exploration, especially in the exploration of space, but now all types of digital cameras are being used as input devices to the computer. By connecting it to the computer through a USB port, digital pictures are entered directly into the computer.



Digital Camera



Webcam

Webcam: A webcam or Web Camera is another form of digital camera. It is connected to the computer as hardware. The webcam of the laptop is built-in. Stills or video images recorded by this device can easily be input into the computer. Computer users can directly share photographs or videos among themselves by using webcam through network. Webcam is used in

social websites in exchanging views. It is mostly used by allowing the computers to act as videophones and video conference stations. The common use of it as a video camera for the World Wide Web gave the webcam its name.

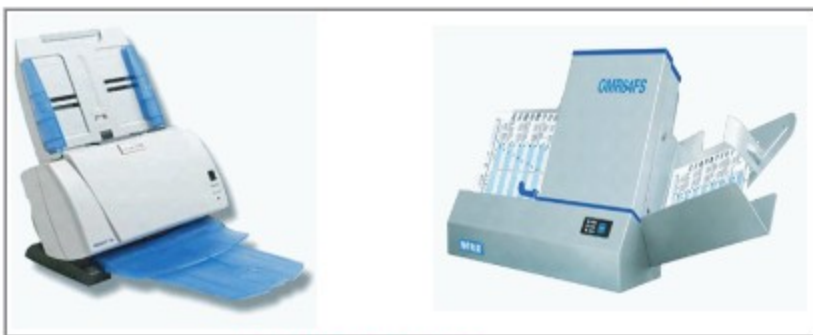
It is also used for security surveillance in the important national establishments, government and private organisations and residences. Since the camera is directly connected with the computers, it constantly feeds video images to a computer or computer network, and the images can be preserved in the computer. Later, criminals can be detected by watching the videos. In our country, this device is used to control crimes.

Scanner: Once we would make copies of documents by photocopiers, but we had to use the machine as many times as we needed to copy. The information was not preserved. The machine that solved the problem is called the scanner. The scanner is the name of the machine which makes digital images of photographs, printed or written documents. These digital images can be stored on a computer.



Scanner

OMR (Optical Mark Reader): OMR is the abbreviation for Optical Mark Reader which is also an input device. It can understand information by analysing the reflection of light. The nature of its working is like that of a scanner.



Optical Mark Reader

It is now familiar to almost everyone as it is mostly used in evaluating answer sheets of objective questions in competitive examinations. The positions of circles of the correct answers are previously stored in the memory of the computer. If the candidates fill up the circles of correct right answers, they will get the credit. Incorrect filling up of circles, even with the correct ones will not give any credit. This system has provided the facility of assessing thousands of answer scripts in a very short time. There is no possibility of anomaly or partiality in the evaluation. That is why it is very popular.

Group Activity

Represent after writing the names of the devices that have cameras though not mentioned here.

Vocabulary: Webcam, Digital camera, Scanner, OMR

Lesson 10: Memory and Storage Devices

We learnt many things about Memory and Storage Device in class VI. Now we will learn details about the device. At present, Memory and Storage Devices are used not only in computers and mobile phones, but also in almost all the technological commodities. Modern technology based commodities are operated by microprocessors that work on certain commands. Memory and Storage Devices are required to store these commands.

Memory is very essential for the right operations of the computer, smart phone, game console and machines like these ones. Memory is of two kinds: primary memory and secondary memory. When the CPU (Central Processing Unit) processes data, the necessary information or software are stored in primary memory. Primary memory is very fast and can work quickly keeping pace with the CPU. Primary memory is of two kinds: RAM (Random Access Memory) and ROM (Read only Memory). The capacities of primary memory is expressed in two ways, one through dynamic power or Hz and the other is by storing capacity or byte.

8 bits = 1 byte

1024 bytes = 1 Kilobyte

(1024×1024) bytes = 1 Megabyte

(1024×1024×1024) bytes = 1 Gigabyte

(1024×1024×1024×1024) bytes = 1 Terabyte

RAM: RAM is connected to the motherboard of the computer and smart phone. The processor primarily stores data in RAM. Later, the processor processes data from the RAM. As the processor can

collect data from anywhere on the RAM, it is called Random Access Memory. Now the capacity of the processor has tremendously increased and the software has become complex and effective, so, they use a vast area of memory, and now modern computers require at least a memory space of 8 gigabytes. The speed of the RAM is

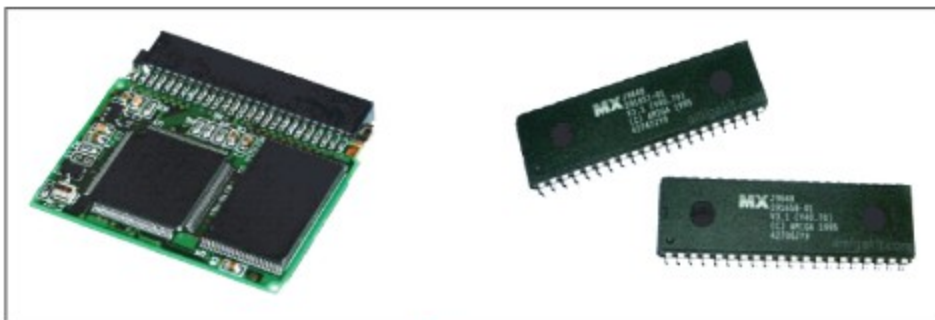


Ram

faster to cope with the speed of the processor.

You should know that stored information in RAM is lost if the power fails or is removed i.e. RAM stores data when the computer is on. As soon as the computer is shut off, the RAM does not have any data.

ROM (Read Only Memory): ROM or read only memory is also connected to the motherboard. Commands are required to keep ICT devices or the computer software operative. The computer cannot run without these commands. These commands are permanently stored in the ROM. Storage of memory does not depend on the power. Since it can only be read, it is called ROM (Read only Memory). It is also called permanent memory as stored data can not be modified, or new data can not be added in it without applying different procedures.



Rom

Group Activity

Make two groups and then as RAM and ROM and arrange a debate to specify which one is important for the computer.

Vocabulary: Microprocessor, Bit, Byte

Lesson 11: Storage Devices

Hard Disc: Perhaps you, who use computers, know about the hard disc, often called a 'hard disc drive'. An open file on computer is stored in the hard disc. It's the main device for storing data. The IBM computer company first used hard disc in the mainframe and mini computer to store data in 1956. The distinctive feature of all ICT devices is data storing. Today's computers usually come with a hard disk ranging from 500



Hard disc drive

gigabytes to 4 terabytes of storing capacity. Even a mobile phone has the hard disc of the capacity gigabyte. But you will be surprised at hearing that the size of a hard disc of 1 gigabyte capacity was as big as a refrigerator in 1980. It's price was high too. 15 thousand dollars had to be spent per megabyte. It's not a fairy tale, rather it was the reality. But today's hard disc drives are so tiny that they fit into the palm of the hand.

Usually a hard disc contains a set of stacked discs that are called platters made of either aluminium alloy, glass or ceramic on which an electromagnetic coating is given. Data is stored on it. When the hard disc runs, the platters spin, and two heads, one on each side of the disk, read or write with the spinning.

Hard disc is very popular for its enormous capacity of storing information. It is of two kinds: one is built-in, another is separated which is called an external hard disc. It can be connected to the computer, desktop or laptop, through a USB port. Thus, the external hard disc can be carried to transfer a large amount of data from one place to another.

Solid-State Drive (SSD): If you have recently purchased a computer or used one, you're likely familiar with solid-state drives, or SSDs. An SSD is a type of storage device used in computers and laptops. Unlike traditional hard disk drives (HDDs), SSDs have no moving parts, making them faster, more durable, and quieter.

SSDs utilize flash memory to store data, allowing for quick access to files and applications. Flash memory is an electronic non-volatile storage medium that

enables data to be erased and reprogrammed electronically. SSDs significantly improve system performance by reducing boot times and speeding up software loading. Additionally, they generate less heat and are more resistant to physical shock and vibration. SSDs are available in various capacities, ranging from 128 gigabytes (GB) to several terabytes (TB). Overall, SSDs are preferred for their speed, reliability, and efficiency.



SSD

Flash Drive & Memory Card: Computer users need to transfer data from one computer to another, and it can be easily done through networking. But, where there are no network facilities, a different kind of storage device is used. The name of the most easily portable storage device is a pendrive or flash drive. Perhaps you understand that it is small like a pen and can be carried in the pocket.



Pendrive

When it first came to the market in the year 2000, its data storing capacity was of 32 megabytes, but now pen drives of 1 terabyte are available in the market, and the price is cheap too. It is more durable than a CD or DVD. So its popularity is gradually increasing among users. Nice looking pendrives of a wide variety are up for grabs.

Group Activity

Which one, according to you, is the most effective device to store data among CD, DVD, pen drive and memory card? Explain with reason.

Now microchip implanted cards are used to store data except pen drive or flash drive. These are called memory cards that can store a huge

amount of information too, but they can not be directly connected. Either fixed slots or memory card readers are needed to use them Memory cards are of

different sizes and storing capacities. Its use is noticed not only in your favourite MP3, MP4 or game player but also in digital camera, mobile phone or smartphone.

Vocabulary: Gigabyte, Terabyte, Aluminium alloy, Ceramic, Polycarbonate, Laser beam.

Lesson 12 &13: Motherboard and Power Supply

Motherboard is a very familiar word to you. You already have an idea of motherboard. In spite of that, you should know more about the motherboard. If you open any electronic board, you will see a printed circuit board which provides a way for hardware in a computer to communicate with each other. This board keeps the power supply except maintaining the interconnection between the machineries. Before the innovation of motherboard, these machineries were connected with wires.



Motherboard

The computer motherboard is also called the main board, system board, planner board and logic board. However, it may be called, it provides connection of input, memory, output and storage device to the processor. Once in the motherboard, the slots or sockets for video card, sound card, RAM etc. were visible except for the processor or CPU socket. Nowadays, a motherboard has all the

cards built-in except the RAM. It has reduced the production cost of computer, and as the capacity of processor is increased, it can do the work of some devices.

The most essential part of a motherboard is the chipset which coordinates the functions of other devices with the CPU. The working capacity of a motherboard depends on its chipset. Which processor is compatible with a motherboard is determined by the chipset.

A modern motherboard includes:—

- | | | |
|---------------------------------|--------------------|--------------------|
| 1. Microprocessor or CPU socket | | |
| 2. RAM slot | 4. ROM | 6. Expansion Slot |
| 3. Chipset | 5. Clock generator | 7. Power connector |

Besides that a USB port, networking card and port are built-in the motherboard.

Power Supply: As you know, a computer is an electronic device that requires electrical power to operate. The power supply unit (PSU) is the component responsible for converting the alternating current (AC) power from the power outlet into direct current (DC) power, which is required by the computer's motherboard, hard drive, and other components.



Power Supply

Different components within a desktop computer require varying levels of DC power, ranging from +12 volts to +3 volts. To accommodate these diverse power needs, PSUs have multiple connectors that provide different voltage levels.

Desktop computer PSUs are available in a wide range of wattages, typically from 200 watts to 800 watts. It's important to choose a PSU with sufficient wattage to power your computer components. A low-quality or underpowered PSU can lead to system instability and potential damage to your hardware.

Group Activity

Open a ruined computer to observe the mother board and show it's different parts by drawing

- At least a session should be allotted for the practical lesson.

Vocabulary: Printed circuit board, Built-in, Chipset, RAM slot, Clock generator, Expansion slot, Networking card

Lesson 14 : Processor

If you are asked about the most important organ of the body, your answer will be certainly the head because the body works by the commands of the head. In the same way the processor is the most important component of computer, mobile phone and other ICT devices. It is also called the CPU (Central Processing Unit). Now all high-tech devices including cars, cameras, mobile phones, game consoles, television etc. are operated by a processor

Processor is the most modern technology of today's world. It is being modernised very fast since the invention. It sounds amazing that processor itself helps to modernise processor everyday.

Processor is built with numerous integrated circuits (IC). These ICs are made of transistors. All these are contained in a tiny chip. Though the number of ICs is increased in a processor, the size of chip is being gradually smaller. But its working capacity is increasing. The CPU controls all the processing works in a computer. Receiving the signals of the software and processing the data accordingly is the main job of it. It means that the CPU or the processor controls the job of data exchanging through input and output devices. In a word, the processor coordinates between the computer-related devices and the signals of software, and thus executes the job. The followings are the three constituent parts of a processor:

- 1. Arithmetic and Logic Unit:** The mathematical and logical calculations are executed in this unit;
- 2. Control Unit:** This unit controls all the desired works, i.e. which signal comes after what is determined by the control unit;
- 3. Registered Memory:** It's a tiny but fast temporary memory from where data is taken and instantly processed;

Bangladesh became free and was recognised as an independent country on December 16, 1971. The Intel Company invented microprocessor in the same year, called 4004. Ted Hoff, Stan Major, Federico Faggin of USA and Masatoshi Shima of Japan were the inventors. You already know that the working capacity of the processor has been increasing gradually after its invention. In the 4004 microprocessor, the number of transistors was only 2300, but now in a Core i7 processor, the number of transistors is 227,00,00,000. What will happen next?

The computer understands and carries out the commands given in

different languages by people of different races and anthropological groups. How can this machine understand them? Perhaps you are very much curious about knowing the answer of this question. The simple answer is that the computer does not understand any language at all. It only understands its own language. It has only two numerical figures in its language, '0' and '1'. '0' means electricity from 0-2 volts, and '1' means 3-5 volts. The name of this language is machine language. Suppose that you can talk in Bengali and English language, but want to talk to a French speaking person. What will you do? You have to seek the help of an interpreter who will co-operate you to communicate with that persons. In the same way, we need conversion programme or software to get the processor to comprehend our language.



The machine language has fixed codes for every letter and symbol of all the languages of the world. Conversion programmes change our language to codes comprehensible to the processor. There are different types of codes. We can cite ASCII (American Standard Code for Information Interchange) for example. ASCII code is 8 bits code. According to these codes:

A=01000001

B=01000010

?= 00111111

,= 00101100

Currently the most popular code is Unicode. When you will be programmers, you will understand the machine language along with many other languages.

Group Activity

Differentiate between the language of the processor and the language of people.

Vocabulary: IC, Chip, Arithmetic and Logic Unit, Control Unit, Register Memory, ASCII Code, Unicode

Lesson 15: Input and Output Device

Sound Card: A device that is very common in today's ICT oriented machine is sound card. It works as an input as well as an output device. It is controlled by software. Most

sound cards transform digital data into analogue sounds. by connecting the output audio signals to an amplifier, we can listen to the sound through either a headphone or a speaker. All sound cards have input and output connections. If any input is given from the outside either through any microphone or



Sound Card

through any input device, the sound card transmits it to the processor which, after processing it, sends it back to the sound card from where we can listen through output devices such as headphones or speakers.

Currently the motherboards of all brands have built-in sound cards. Multimedia is this metaphor necessary through sound card. We can enjoy music, movies, and play games with sound effects due to the sound card. But for professional uses, the sound card is usually connected to the motherboard separately.

Graphics Card: When you use computer or mobile phone, you give commands using the visual images or icons on the monitor. How are these images displayed on the monitor? The commands are controlled by the graphics card. It is also called video card, display card or graphic adaptor.

Like sound cards most of the graphic cards are built-in (though there are slots or sockets to connect graphic cards to the motherboard). But most modern processors have video or display chip with which they can display visual images without graphic cards. All graphic cards can display 2D (two dimensional) pictures but now graphic cards are available that can show



Graphics Card

3D (three dimensional) pictures. But a 3D monitor is required to watch 3D pictures. We can now watch live and bright pictures. Like sound cards, graphic cards have input and output connectors. Also it has a separate port for playing games. So you can easily connect joysticks or other devices.

Touch Screen: You have likely seen or used a smartphone or tablet. These devices utilize touchscreens, which allow users to interact with the device by touching the screen. A touchscreen is a type of display that can detect touch input from a finger or stylus and display the results on the screen. It functions as both an input device (touch panel) and an output device (visual display), making it an input-output device.



Touch Screen

Group Activity

What kind of output card may offer you extra facilities other than sound or graphics card? Represent after discussing among yourselves.

Vocabulary: Analogue, Amplifier, Adaptor, Two dimensional, Three dimensional, Touch Screen

Lesson 16 & 17: Output Device

Monitor: Monitor is intrinsically an output device. Now we have monitors that can input as well as output device. Yes, we are talking of touch-screen monitors. Nowadays, mobile phones, tablet PC, laptop with touch-screen and common monitors are available in the market. There is no difference between a television and a computer monitor.



CRT Monitor



LCD Monitor



LED Monitor

Monitors are of different sizes measuring diagonally. Previously, CRT (Cathode Ray Tube) monitors were usually used, but now LCD (Liquid Crystal Display) and LED (Light-Emitting Diode) monitors are very popular among users. These are light and slim, energy saving, and attractive.

Printer: The output device that we need most after the monitor is the printer. We use it to print the output after being processed into the computer. We print the images after capturing them on digital camera. Three types of printers are available:



a. Dot Matrix Printer: It is one of the earlier printers, and is still popular for low printing cost, but its print quality is not very good, and slow in running.

b. Inkjet Printer: It is commonly used as cheap printer. It is mostly used in personal work. Liquid ink is required for this printer. It prints good quality images. But photo printing is comparatively expensive.



Inkjet printer



Laser printer

c. Laser Printer: Perhaps you have guessed that this printer has some connection to laser beam. The print quality of a laser printer is of very high standard, and the device runs very fast. It is very useful in printing both texts and photographs. Once it was expensive, but now very economical.

Besides those, the plotter is a kind of printing machine. It is used to print architectural designs, maps etc. on a paper big in size.

Group Activity

Which printer is useful for school work? Discuss in your group and explain them.

Vocabulary: Cathode Ray Tube, Liquid crystal Display, Light-Emitting Diode, Architectural Design

Lesson 18: Output Device

Speaker: You undoubtedly like listening to music. The device connected to the musical instrument is speaker. We get the output of all kinds of sounds through the speaker. It is an essential output device. Speaker may be either built-in, or connected from the outside. We can connect standard speakers to get clear sound output. A speaker converts the electric waves generated from the sound card to sound waves which we can hear.



Speakers



Headphone

Headphones: Headphones are a device with a part to cover each ear through which you can listen to sounds without other people hearing. They are also called earphones or headset. Stereo headphone or earphone is usually used with mobile phones, CD/DVD players, MP3/MP4 players, laptops and personal computers. Headphones allow users to listen privately, avoiding disturbances to others. Headphones should not be played too loud because it may damage your ears.

Now, people use wireless headphones that facilitate sound to us by using Bluetooth or wi-fi technology.

Multimedia Projector: Multimedia projector is an electro-optical device. It can convert any data from the computer or any visual source to images that can be enlarged by using lens, and viewed focusing on a wall or a screen. Modern projectors can create 3D images.

Multimedia projector is mostly used in presentation. It is the modern version of a slide projector and multimedia projector. It can focus any digital image by enlarging it on any surface, either on a wall, or on a desk. The brightness ranging 1000-4000 lumens is required for using it in a big conference room though it depends on the capacity of the projector.

The lamp of the LCD projector must be changed after using 4000 hours. Another kind of projector uses LED technology that can be used for 20,000 hours though its price is comparatively high. Images from various sources, such as television, computers, and CDs/DVDs, are transmitted to the multimedia projector. The projector then focuses the image onto a flat surface using a lens. As LCD/LED projectors are small in size, it is portable, and does not need any big furniture for projection set-up. Now, pocket projector is available, and it facilitates the use from computer, tablet PC or mobile phone.



Multimedia projector

Group Activity

Make a list of the input and output devices in the light of your experience other than the devices discussed here, and present to the class.

Vocabulary: Sound wave, Bluetooth, Wi-fi, Lumens, LCD, LED

Sample Questions:

1. You want to make a digital copy of a photograph. Which device will you use?
 - a. Plotter
 - b. Keyboard
 - c. Printer
 - d. scanner
2. Processor is called the head of a computer because?
 - i. it is connected to the motherboard;
 - ii. it gives commands to the computer;
 - iii. it processes the data;

Which one of the following is correct?

- a. i
 - b. ii
 - c. iii
 - d. i, ii & iii
3. Which device will you use to save a photograph taken on your digital camera?
 - a. ROM
 - b. RAM
 - c. Processor
 - d. Hard disc
 4. Which device is used to watch images and to talk together?
 - a. Mobile phone & Webcam
 - b. Webcam & Microphone
 - c. Computer & Microphone
 - d. Computer & Webcam

Read the passage below, and answer the question nos. 4&5:

Kona, the eldest granddaughter of Mr. Matin, is watching the cricket match between Bangladesh and South Africa. Noticing her watching the cricket match, Mr. Matin asked her, 'Have you taken satellite connection to your laptop?' Kona recorded the match.

5. Kona can watch the match by...
 - i. the Internet.
 - ii. connecting TV card to laptop.
 - iii. connecting television-laptop.

Which one is correct?

- a. i & ii
 - b. i & iii
 - c. ii & iii
 - d. i, ii & iii
6. What's the convenient device to record the match?
 - a. Hard disc drive
 - b. Pen drive
 - c. CD
 - d. DVD
 7. Explain with reason why you picked the answer from the options given to the question number 6.

Third Chapter

Safe and Ethical Use



After completing this chapter, we will be able to:

1. explain the detrimental effects of the excessive use of ICT;
2. describe its impacts on society;
3. explain the rules and regulations of ICT;
4. explain the necessity of safe and ethical use;
5. draw cartoons about the consequence of excessive use.

Lesson 19: Sensible Use

If you are asked to cut down a branch of a tree with a tiny stick, you will hardly manage to peel the bark trying throughout the whole day. But, if you are given a sharp chopper, you will cut the branch down with a few strokes. If you use the tiny stick carelessly, you may just be pricked once or twice, but if you use the chopper absent-mindedly, you may receive serious wounds, and bleed heavily.

The cutting power of a sharp chopper is more than that of a tiny stick, and the careful use of it can successfully get the big job done, but an accident may happen if you abstractedly use it. It is also true to your life and true to the use of Information Technology as well. Perhaps, you can guess that a high risk of danger is involved in its wrong application.



Use Internet in front of everybody

So we will learn operation of the computer, the Internet and Information Technology, and use it carefully so that we may not fall in danger. The use of the Internet gets priority to the most of the users. Almost all the computers of the world are connected to the Internet,



You should not give your name, address, picture or password to any unacquainted person

and when someone uses the Internet in their PC, the whole world seems to appear at their room. In this world, there are many beautiful sites where you like to travel in, but there are also some dangerous places where you should keep yourselves away from. It is the same when using the Internet.

When you communicate with others using the Internet, you may come across people you do not know. What if it is revealed later that the person you trusted surfed the Internet with an ill intention? What if you gave them your name, address, phone number and photograph, and the person used it for a bad purpose? What will you do then?

The first rule you should follow is that you must never give your name, address and password to anybody.

Communication with unknown people through the Internet may sometimes be risky. As no one notices, you may be free to exchange views that may cross the limit of modesty. Why should you tolerate obscenity and filthy things online if you do not do it in your personal life?



Be friendly While using internet

Age is regarded as an important factor for every conduct and practice of life. Perhaps, you have noticed that you like the books written for children like you. Books written for adult people may not suit your taste. You may even be shocked by the subject matter. The same thing may happen in the cyber world. You may be shocked if anything unsuitable for your age comes across you. A feeling of disdain may grow in you.

Those who use the Internet must follow the three rules given below:

1. You must not use the Internet secretly. Work sitting in a position from where everyone can watch the monitor;
2. Never give unfamiliar person your name, address or photographs;
3. Use the Internet cheerfully. Never harm anybody. Though you stay out of sight, never cross your limit through unrestrained, filthy, or appalling behaviour;

Group Activity

1. Make a list of the technologies should be used carefully except the computer and the Internet.
2. Make a beautiful poster writing the three instructions of the use of the Internet.

Lesson 20-22: Obsession

In 2009, two people were arrested in China. They were husband and wife. They were arrested because they sold their children. In three different times, they sold their three children for \$9000. Perhaps, those who read newspapers daily might have noticed that a helpless mother of our country had also sold her kid for some money as she had not the financial solvency to bring them up. When we read news like this, we feel sad, and hope that one day, our country will be a prosperous one where no mother will have to sell her kids.

But, the Chinese couple did not sell their children for insolvency. They sold them to pay for online game. Both of them developed an obsession with playing an online computer game called MMO (Massively Multiplayer Online-game), and the obsession was so acute that they sold their children to pay for it.

It was a very unusual incident. When it was focused in the media, the whole world was perplexed. Panic gripped the people as they realised that computer game might develop a serious obsession and snatch away our sense of proportion. We should remember that being

fond of anything is a very usual instinct of human beings, and life becomes beautiful as we adore beauty. But obsession is completely a different thing, a negative aspect of nature. When something becomes an obsession with someone, reason does not work for him. Drug is the most significant example. When someone gets addicted to drug, he fails to come out of its dreadful infatuation. He destroys himself and makes the family life hell. Similarly, the obsession with computer games may be same as drug addiction. Those who are playing computer games now and will play in future should remember one thing that you will just enjoy the game, not be obsessed with it.

How will you understand whether you have developed an obsession with



The news of selling children by a Chinese couple in the media

anything or not? It's not very hard to find out. When you will notice someone crossing the limit on any work, it can be identified as an addiction. In our country, different satellite channels broadcast cartoons on television throughout 24 hours. The kids enjoy these animated films, and as soon as it is over, they concentrate on their other essential works. But if it happens that they all the time watch cartoons, and other family



Kids may easily be obsessed with cartoons

members can not watch anything, it is evident that they are going to develop an obsession with animation. Some parents do not have any clear idea about the danger ahead of their kids. So they always allow their kids to watch cartoons on television to keep them silent. Thus they develop an obsession with cartoons, and it hinders the mental as well as the intellectual growth of the kids.

The children can not only be obsessed with cartoons or computer games, but also be addicted to a particular type of food. Some days ago, it is known through the newspaper that a woman of Britain can eat nothing except pizza. She has been eating this item of fast food since the last 31 years at breakfast, lunch and dinner. It's an addiction too.

So, you will be very careful about not being addicted to anything. If you are obsessed with anything, it is difficult to get rid of it.

Group Activity

Compose a drama regarding the detrimental effect of obsession with the computer games, and perform on the stage.

Once the word 'addiction' was used to describe the habit of gambling and abusing drugs. Perhaps you will be surprised at hearing that the excessive use of computer is regarded as an addiction. Even those who keep themselves busy most of the time with browsing the web are suffering from a kind of disorder. A new jargon, IAD (Internet Addiction Disorder) is coined for these addicts.

Today, most of the people use the computer. So they should clearly

understand the difference between the essential use and addiction. When someone spends maximum time on the computer, it is obvious that he is going to develop an obsession that harms his study. It will equally harm his health if his addiction increases and if he does not take rest or sleep in time. As people bear a good notion of the computer, they do not clearly understand their children getting addicted to it. Going beyond the limit of anything is bad, and it is true for the users of computers too.

What are the harmful effects of the obsession with the computer use? Some damages are very evident. The growing up children need physical exercise and outdoor games, but if they remain busy with the computer inclining their heads, then it hinders their physical growth. An obsessed user of the computer can not think beyond this machine. He not only spends time but also compels his parents to spend money behind it.



We will use the computer, not be used by it

Once, if addicted, it is hard to get rid of it. So it is better not to develop any addiction. Children of your age should know that the computer is a very effective device, and you must use it in needs, not develop any obsession.

If anybody gets addicted to it, we should help him to shake his addiction off and show him the ways how he can get merriment from outer world, especially from games. Time should be fixed for him how long he will use the computer. It should not be more than 1 hour, and he will be given the condition that he may get the chance of using it if he completes the other essential works including study. He should remember that the computer is a nice device, and we will use it, not be used by it.

Now a new kind of obsession about Information technology has come into being. It is called social communication network such as facebook, 'x', linkedin, youtube etc. Crores of people of the world use facebook. At present, a large number of people of Bangladesh use facebook and the number is gradually increasing.

Group Activity

Write a story about a computer addicted boy/girl how he/she spends his/her time.

We guess its importance as thousands of people use these social communication networks that are unparalleled for communicating a bit of information to a huge number of people. The autocrats rule many countries in the world on the pretext of not practising basic democracy by the political parties, but movements can be launched by organising people through the social networks. You will be surprised at hearing that these social networks played a very vital role to oust the despots from the power of some countries, including Bangladesh. When we want to send messages to a huge number of people, we can instantly send it through networks.

People continue communicating with others through the social networks that are very popular among the younger generation as they can accept information technology very easily. Although there is an age limit to join the networks, but the adolescents join by giving fake information about them, and there is no easy way to stop them. You may argue that as it has so many positive sides, what if the adolescents join it? We do not prevent you from reading newspapers or watching television, why do not we allow you to join the networks?

Certainly, there are some valid grounds for that. People who are involved in this social communication networks can not watch them physically. We fail to guess anything about the people you are communicating through social networks. It's usual that a adolescent will spend his time with the friends same to his age, but if they develop friendship with adults, that may not be good for them.

Even the adults are obsessed with social networks, and it becomes a problem for them as well. They can spend hours exchanging views with familiar, little familiar or even unfamiliar people by using the network which has made the

whole process very convenient. In offices and workplaces, it has been made strictly prohibited as the officials neglect their responsibilities being busy with unnecessary communications. But prevention may not be a good solution. If they apply their rationality and use it sensibly, it will not be an obsession for them, and that is the best possible solution desired ever.



There is a gulf of difference between a real friend and a social network friend.

People may be unsocial even after being connected to social networks. Those who are related to each other through the social networks address themselves as friends, and consider exchanging views friendship. If anybody regards the friendship of Information technology as real and become complacent about it, you will definitely be deprived of many significant things of life.

Group Activity

Being divided into two groups, one in favour of and another against joining the social networks of the students of your class, arrange a healthy debate.

Vocabulary: MMO, Obsession, IAD (Internet Addiction Disorder), Autocrat/Despot, facebook, twitter, linked-in, Sumaji.

Lesson 23: Copyright

The concept of Copyright and Merit Ownership: Human beings need two kinds of property to live on. We can easily recognise the property that includes money, living house, transport, food and other material things. But people can not be satisfied only with these material belongings. They should foster their human faculties. They listen to music, recite poetry, conduct research, and develop new products and services to improve people's lives. We can make asset through these creative activities that we call intellectual assets. We can protect and save all the assets we have. No one can take away our material assets easily as our right is protected by the law. But you can compose a song that can be sung by many singers. Even someone can deceive people introducing him as the composer of the song. Similar thing may happen in the case of a writer. You may write something, but some one may publish it somewhere without your consent. If it happens, it's not good from either social or ethical point of view. The composer or the writer may not get the recognition, and they lose financially too. A writer spends his time, thought and intelligence in writing a book. The publisher invests capital to publish it, and fixes a price keeping a profit margin. The writer gets a percentage of it which is called royalty. If any body pirates the book and sells it, the writer is deprived of his right. In different countries of the world, laws were enacted to prevent the illegal reproduction, copying and use of creative things. As this law protects the right of the writer, it is called copyright law, in brief copyright.

Reproduction or copying books has been easier after the invention of printing machine. In 1662, the Licensing of the Press Act was passed in the parliament of the United Kingdom. Those who wanted to stop piracy of their book took a license after the registration under the Act. The procedure was started with the books, but later included all the creative things such as scientific inventions, business labels, merit ownership etc. After the invention of computer, reproduction of books, photographs, labels etc. have become easier, and now the Internet can spread it throughout the world. So the reproduction through the computer has come under the purview of this law, and as the computer programming is a creative work, the programmer can also protect his right too. Now the copyright continues after the death of the owner. In some countries, it remains in effect until 100 years, but usually until

50-70 years after the death of the writer, artist or playwright. In Bangladesh, under the clauses of the copyright Act of 2000, its duration is 60 years. When a creative work is reproduced breaking the copyright act, it is called piracy. As the computer software and programmes can be copied easily, the rules are frequently broken. We should be careful while using the computer. When we will give anything from our computer to anybody, we should not break the copyright act. We preserve many literary pieces of works along with the computer games and programmes. We should keep in mind that we do not have the right to transfer the copies of those pieces to anywhere, but there are some liberties in using the creative works. The academic or study materials are almost free, and copying of any such materials does not violate the act. It is called 'fair use'.

A different stream of thought is also active against this conservative outlook. They think that the writers, artists, programmers can free their creative pieces on some terms and conditions. It is called 'Open Philosophy' or 'Open Source Philosophy'. Those who are the followers of this philosophy allow people to use their creative products under some licensing regulations. The opposite of copyright is 'copyleft'. It means that the producers allow everyone to copy and use their products, and those who are 'creative commons' stay in between the copyright and copyleft. Some rights of the job-creators are protected in some categories of the creative commons licensing act which permits anyone to publish or copy any writing or any creation without the permission of the writers or the creators. But that must be published in the writers' names, and he will not make any profit by it. The computer software being operated under the regulations of open source philosophy are called 'Open source software'. Anyone can copy and give the software to anybody. As the software are permitted to be copied and modified, those become gradually upgraded. A remarkable contribution of this philosophy is wikipedia, an open storehouse of knowledge (www.wikipedia.org). People of the farthest corners of the world contribute together to enrich this website of knowledge under free licensing act.

Group Activity

Arrange a debate making two groups, one in favour of and another against the open source philosophy.

Vocabulary: Copyright, Copyleft, Creative Commons, Open Source Software, Piracy, Fair use, Open Philosophy.

Lesson 24-26: Ethics and Plagiarism

When we walk along the street, we watch the shops on the either side of the road, but do not push the door to see whether it is open or closed. If it remains open, an unknown person does not enter the shop or ransack the goods. Rather we call the shopkeeper to shut the door if he leaves the shop keeping the door open. It is our responsibility as civil citizen.

A similar situation happens after the invention of the information technology. When we visit various websites, we just see what the persons or organisations behind the constructions want to show us. We can not enter the private parts of the websites, and we do not have any need either. Only the selected persons have the access for knowing the password. But those who do not have the access of entry, may desperately try to enter the sites either bypassing password or breaking the security code. Entering there, they may come back just navigating the site, or damage a lot by changing the configurations. One can easily do it by using his personal computer sitting in his own room as the location is faraway, an invisible cyber world which is out of the peoples' sight. So it can not be traced. This process is called 'hacking', and nowadays, the computer websites are frequently being hacked. Those who hack into a website but do not damage it are called 'white hat hackers', but those who damage it are called 'black hat hackers'. Numerous hackers are active in the cyber world, but security measures are gradually being tightened. In 1983, a boy of 19 years of age hacked the website of the USA defense force.

So you have understood that hacking is an unethical work. A try out for intelligence or facing challenge might be a passion, but hacking into website is not a challenge at all. There is no honour in taking any unethical challenge. Hundreds of challenging fields are waiting for you, and you can try with any of them to measure your intelligence.

When the results of SSC, HSC or equivaled examinations are published in the website, all try to view the pages at a time, and then the website disappears from the net. It's not very unusual as every site has a containing capacity. The website goes beyond control when overloaded. Besides, somebody can intentionally create a situation so that a programme can artificially hit a website hundreds of times per second. This constant hits make the website malfunctioning. It's an unethical practice. No one deserves honour by stopping a website.

Nowadays, many newspapers are thrown into the websites, and the readers can write comments on a bit of news. They can easily write thought provoking and positive comments, but it is frequently seen that some readers write meaningless and obscene comments. It is unjustified from the ethical point of view.

As there is the freedom of speech in the Internet, visitors of websites can express their opinions as they like. Sometimes, they abuse this freedom either by threatening people or posting superimposed pictures or sending disgraceful information through email to humiliate someone. Communicating millions of people at a time was previously a tough job, but now it has been made easy. If anybody abuses the advantage provided by this technology, it is evident that his use was unethical.



All important newspapers of the world are found in the Internet, and writers can write comment on any news.

Group Activity

Estimate the damages of the websites done by hacking. Give an example to justify your statement.

In the Internet, unethical as well as unlawful works are done crossing the limit. There are people who do illegal and heinous crimes in the Internet. We should know how the crafty men deceive innocent people. As the whole procedure is done behind the back, in the cyber world, the most frequent is cheating. Suppose, someone may contact you and say that you have won a lottery, and ask you to meet somewhere to receive the money. When you meet them, they say that you have to spend some money to receive the prize of the lottery. After realising their demand, you saw that the lottery-story was a total fabrication, and you had been deceived by them. Again, an unfamiliar person may inform you that he has unexpectedly got a huge amount of money, and he wants to deposit a big sum in your account for security. Thus you may be entrapped. So an offer from any unknown person to your email box is nothing but an attempt to deceive you.

Credit card fraud is very massive and frequent in the Internet. Perhaps you know that exchanging of notes has been thinned, and the use of credit cards is rapidly increasing. Even the card is not essential to transfer money through the Internet. You should only know the number. So the criminals often commit cyber crimes to know the numbers of credit card holders. The question of security is the top priority while using the credit cards, and it is very tough to know the numbers, but the cyber criminals succeed to know the numbers by deceiving people, and draw a big amount from their accounts without their knowledge.

Nowadays the notorious criminals use the Internet to despatch their information through the Internet. So laws have been enacted globally to prevent this crimes. Those who can not be tried by the existing laws, will be tried by the new laws.

There are many confused people living with wrong ideologies. They are communal and fanatics. They propagate their beliefs through the Internet, and



Sending emails by using the names of renowned companies, the cyber criminals deceive people

people can commit cyber crimes by abusing the technology, but they are small in number. If we are careful, we will not be deceived by them. We will use the positive sides of it.

You are very much familiar with the computer virus. Someone may create computer virus to make fun or to commit crimes. They throw the virus in the Internet, and it entering our PC causes small trouble to massive problem like erasing data from the hard disc. A computer virus called 'Mydoom Worm' attacked 2,50,000 computers in a day in 2004. In 1999, a virus named 'Melissa' attacked the cyber world so strongly that Microsoft, the biggest computer

try to spread violence. It is also recorded that they intensify the frustration of the hopeless people, and provoked them to commit suicide. But you should not be worried of the situation. You should know that the information technology, or the Internet, or the Cyber world is a very powerful medium of communication. Some



David Smith was sentenced to 10 years' imprisonment for spreading Melissa virus in the Internet.

Group Activity

Draw a cartoon of a man who has fallen into a danger after committing the cyber crime.

Plagiarism: Use of references to any writing must be with due recognition.

1. The gist of it is authenticated on a specific aesthetic ideal and aesthetic perspective. We notice since the beginning to the end a mature expedition of aesthetic sense and a thought of his native country in his gradual practice of drama and dramatic theory.
2. Dr. Ahmed Aminul Islam, Swadesh o Shilpototter potobhumikay Nattokar Selim Al din (Selim Al Din on the Perspective of Native Country and Aesthetic Theory), Theatre Studies, Selim Al Din edition, June 2008, Volume-15, Department of Drama and Dramatics, University of Jahangir Nagar, Savar, Dhaka, page-61
3. Syed Shamsul Haque, Preface to Chaka by Selim Al Din
4. Dr. Afsar Ahmed, Selim Al Diner Shilpototto o Bisvabiksha (The Aesthetics and the Worldview of Selim Al Din), Theatre Studies, ibid, page-26
5. We feel interest about the fables, fairy tales, religion and culture of the small anthropological groups of Bangladesh... In 1986, we express our firm determination to strengthen communication with the multilingual anthropological groups in The National Drama Fair arranged by Dhaka Theatre.

When we study, we learn many new things that were unknown to us, and along with this, we learn to be enlightened and perfect. A perfect human being neither commits nor tolerates any crime. As they do not commit wrong, they prevent others from doing it. We expect our children to be perfect human beings when they will learn many things through study.

In spite of that, we notice students adopting unfair means in the examination, and being expelled from the examination hall. Thus they ruin their future.

The similar things happen in almost all the parts of the world, and in the age of the Information and Communication Technology, it has got a different

complexion. Homework is must in academic study, and the learner himself should do it. If anybody does it for him, he may get good credit, but definitely, he will not learn anything. In the higher classes, they have to write monograph or class project. The brilliant students undergo toil to prepare the papers, but some idle students do not work hard. They copy the subjects thoroughly from the webpage and submit in their names. It's called Plagiarism which is a very unethical job.



Farid Zakaria, the internationally famous journalist was sacked from his job for the complain of plagiarism

Perhaps the word is not familiar with you. Your superiors did not hear it either. But in the age of information technology, you must be acquainted with the terminology. It has become a real problem right now. People either knowingly or unknowingly plagiarise from others' writings. Some were strictly penalised.

We will learn from others' writings, and taking help from their writings is not a crime, but they should be given the due recognitions. There is nothing illegal if you correctly refer to the portion used in your writing.

Though plagiarism is increased, the ways of detecting it are increased too. Do you know if anybody plagiarise anything from anywhere that can easily be detected by using computer software?

If you commit any wrong, it may bring about a danger for you, but you will not evade doing crimes considering it dangerous for you. As you will be the perfect citizen of the country, you will be committed not to commit any wrong. You should remember that one day you would shoulder the responsibilities of the country.

Group Activity

Arrange a debate on the difference between plagiarising and memorising.

Vocabulary: Hacking, Black hat hacker, White hat hacker, Credit card, Mydoom worm, Melissa, Plagiarism

Sample Questions:

1. Which place at home is the most convenient to set a computer?
 - a. Drawing room
 - b. Bedroom
 - c. Dining room
 - d. Reading room
2. In the field of social network, ?
 - i. you may not directly communicate the individuals;
 - ii. people lack sincerity;
 - iii. there is every possibility of being deceived;Which one of the following is correct?
 - a. i & ii
 - b. i & iii
 - c. ii & iii
 - d. i, ii & iii
3. A man obsessed with the computer may be ?
 - a. unsocial.
 - b. skilled in computer
 - c. good at study
 - d. advanced in science and technology

Read the chapter below, and answer the question nos. 4 & 5:

Rimu is 5 years old. Recently waking up in the morning, she starts watching cartoons on television. As she does not bother her parents, they are also pleased.

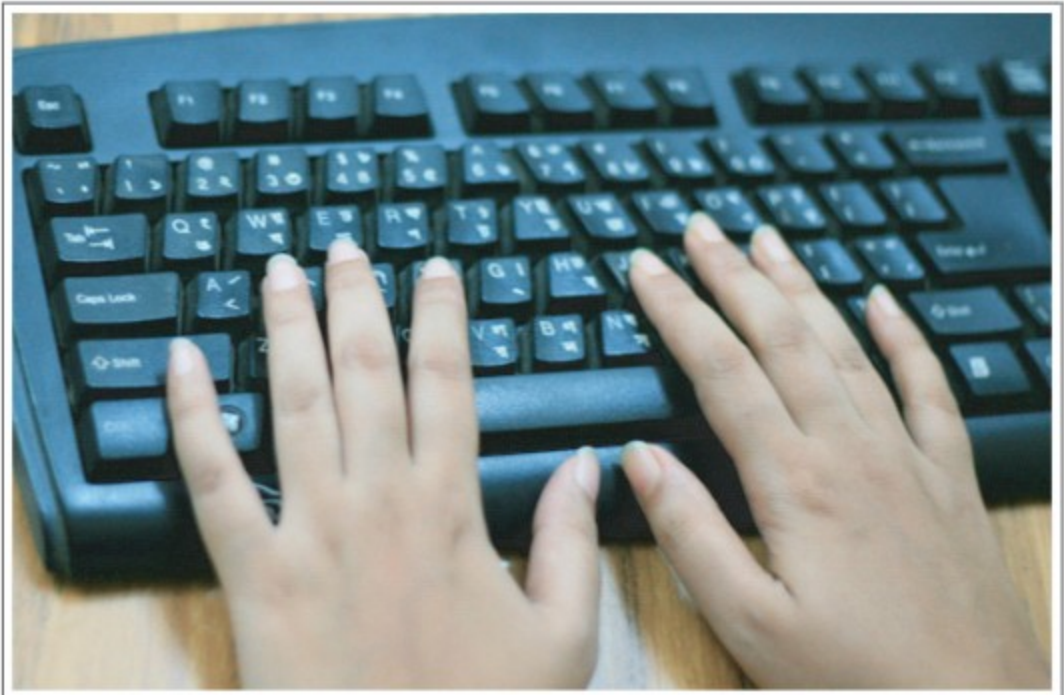
4. Her watching cartoons can be termed as ?
 - a. spending time.
 - b. serving purpose
 - c. an obsession with cartoons
 - d. enjoyment
5. Rimu, for the attitude of her parents to her, may be ?
 - i. unsocial to the utmost.
 - ii. physically weak.
 - iii. a creative being.

Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

Fourth Chapter

Word Processing



After completing this chapter, we will be able to:

1. explain the technique of applying word processor by using correct terminology;
2. explain the technique of using Bengali keyboard;
3. explain document management;
4. create Bangla documents in words;
5. arrange the documents in a right way.

Lesson 27-54: Word Processing and the Use of Bengali Keyboard

You have already know that we can do a lot of work including word processing and drawing images on the computer. You have learnt how to type documents in English. Now we will learn to create Bengali document by using word processor



layout of Munir Unicode keyboard

Bengali keyboard: We need a keyboard to write something with word processor. Keyboard is the main input device of word processor. We should have an idea of Bengali keyboard to write in Bengali in word processing. Martyr intellectual Professor Munir Chowdhury of the University of Dhaka at first invented a layout of a scientific keyboard for Bengali typewriter in 1965.

Later, this keyboard layout was developed for the computer, and it required a software which would help to write in Bengali in the computer. The 'Shaheed Lipi' software with some fonts were introduced in 1985, but it could not acclaim popularity. More software such as Bijoy, Proshika Shobdo, Probortana, Lekhoni came to the market since the mid-eighties to the late nineties. The Bijoy software became popular for being rightly upgraded and compatible with other software, and this time the Bijoy keyboard layout was ahead of all the layouts being used by the computer users.

☺ +	! 1	@ 2	# 3	¢ 4	% 5	^ 6	☯ 7	* 8	(9) 0	- =	+ =	Back Space ←
Tab	Q ১	W ২	E ৩	R ৪	T ৫	Y ৬	U ৭	I ৮	O ৯	P ০	{ [}]	↵ ;
Caps Lock	A ১	S ২	D ৩	F ৪	G ৫	H ৬	J ৭	K ৮	L ৯	:	"	'	Return ↵
Shift	↑ Z ↓	↑ X ↓	↑ C ↓	↑ V ↓	↑ B ↓	↑ N ↓	↑ M ↓	< ,	> .	? /	Shift		
Ctrl	Alt		Space Bar				Alt		Ctrl				

The Bijoy Keyboard Layout

Press Ctrl Alt B together to activate the Bijoy keyboard in word processor on your computer. Press 'g' after the first letter to write conjunct-letter in the Bijoy keyboard and then press the second letter.

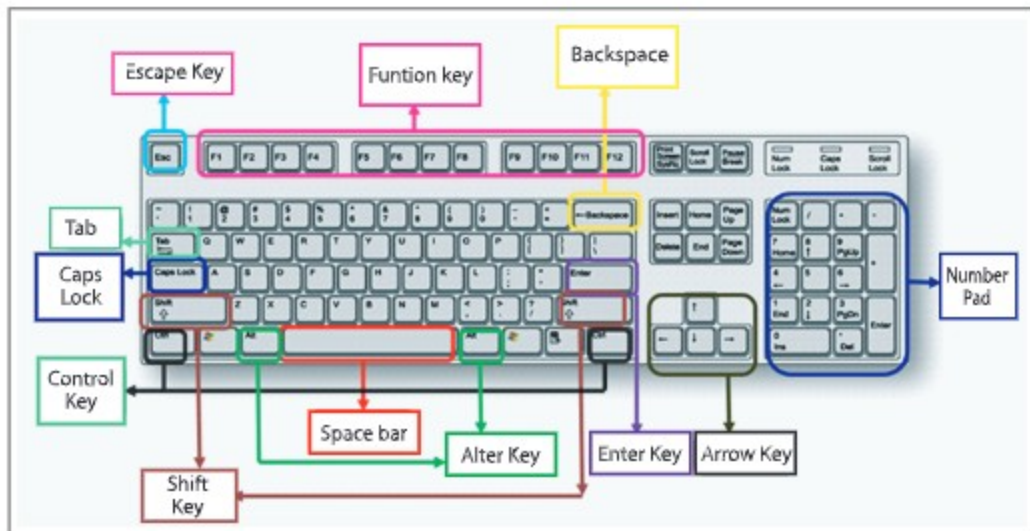
Some conjunct-letters:

letter	key	letter	key	letter	key	letter	key
ফ	fgN	ফঃ	NgB	ফঃ	lgy	জঃ	ugl
জ	lgu	জঃ	lgY	জঃ	qgo		

Though Bangladesh Computer Council has approved a keyboard layout called 'National Keyboard', it is yet to be introduced on the computer. Like other languages of the world, Bengali can be written by using Unicode.

ক k	ট T	ণ p	স s	অ o	ও O	OU	০ 0	নির্দেশনা: <input type="checkbox"/> কোন সেন্সিটিভ <input type="checkbox"/> কোন সেন্সিটিভ নয় (v) - (c) - - Accent Key 
খ kh	ঠ Th	ফ ph,f	হ h	আ a	ব (ফলা) w	১ 1		
গ g	ড D	ব b	ড় R	ই i	ঈ - য ফলা (e) y, Z	২ 2		
ঘ gh	ঢ Dh	ভ bh,v	ঢ় Rh	ঊ u	ঋ - র ফলা (e) r	৩ 3		
ঙ Ng	ণ N	ম m	য় y,Y	উ u	ঋ - রেক (v) rr (c)	৪ 4		
চ c	ত t	য z	ৎ t'	উ U	ঋ - হসন্ত ,,	৫ 5		
ছ ch	থ th	র r	ং ng	খ < ri	ঈ - দাড়ি .	৬ 6		
জ j	দ d	ল l	ঃ :	এ e	চ - টাকা S	৭ 7		
ঝ jh	ধ dh	শ sh,S	ঃ ^	ঐ OI	ঋ - ডট . (NumPad)	৮ 8		
ঞ NG	ন n	ষ Sh	জ J	ও O	ঃ (কোলন) :	৯ 9		

Phonetic Keys



The Special Keys of the Keyboard

It does not matter which keyboard we use to write Bengali, it will be preserved in the international system. So the importance of a selected keyboard is gradually lessening. The users of the Internet have been increasing since 2000. So an urgent need of designing Bengali webpage was felt. A Bengali software which would provide the facilities of writing Bengali in the different medium of the Internet was needed for its immense popularity. The Unicode software 'Auvro' developed by Mehdi Hasan Khan was introduced in 2007. Its Phonetic Bengali Typing System makes it popular among the young generation.

If '**ami banglay gaan gai**' is typed in Phonetic Bengali Typing System, it will be typed 'আমি বাংলায় গান গাই'। Bengali writing facility is added with connecting a mouse. So those who were afraid of using Bengali fonts on the computer feel comfort and started typing Bengali with ease. It is noteworthy that the keyboard layout of Munir Optima invented by Martyr intellectual Professor Munir Chowdhury has been programmed on almost all the software.



Mehdi Hasan Khan

Can you remember how to start a word processing programme?

After opening a word processing programme, you have to press Ctrl+Alt+B together for the Bijoy software and F12 for Auvro software to write in Bengali. The next step is selecting font. You have to select SutonnyMJ for Bijoy and Nikosh or any other unicode font for the Auvro. After making all these commands, prepare the word processor for writing in Bengali. Press the keys to locate the letters. You can take the help of the picture of keyboard layout to know the

locations of the letters. Now start writing, and you will gradually be familiar with the keys. After finishing a document, you will save it by giving it a name.

Group Activity

After having some idea of the keys, let us type the first line of the National Anthem.

আমার সোনার বাংলা, আমি তোমায় ভালবাসি

Editing Documents:

I think all of you are writing in Bangla. Making mistakes? It's not very unusual. How can you make the writings error free?

The process that is followed to erase errors on a document is called 'editing'. It is described in brief below:

Select: While editing a document, you need to select a letter, or a word, or a sentence, or a part. To select something, you have to take the cursor just before it and at first press the shift key, then the right arrow (Shift + →).

Cut: Sometimes you need to move words or pictures from one place to another in a computer document. To perform the action, at first select the words or the picture, then press Ctrl and x keys together (Ctrl + x).



Copy: If you want to copy something on a computer screen, you have to move it from one area to another. Press Ctrl and c together (Ctrl + c) after selecting what you want to move.



Paste: After copy or cut function, the next step is paste. To move a piece of text to a particular place in a computer document, take the cursor to that place and press Ctrl and v together (Ctrl + v).

Delete: To erase a piece of text, press del or backspace key after selecting it.

You should follow the commands given below to move the cursor to a particular place in a document by using the keyboard:

Functions	Command keys
Taking the cursor before a line	HOME
Taking the cursor after a line	END
At the starting point of a document	CTRL + HOME
At the end of a document	CTRL + END

Formatting a Document:

After creating and editing a document, you need to arrange it in such a way that it will look good. This is called formatting. We can arrange it in a different way, but we will keep our discussion limited on some elementary items. You will know more while working.

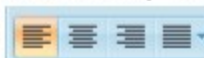
Increasing or reducing the font size: To increase or reduce the font size either of the partial or of the whole document, select it and then change the numerical figure by the side of font name on the toolbar or ribbon. Select the figure on the basis of what you want to make it, bigger or smaller in size. You can do it by giving commands through keyboard.

Functions	Commanding keys
To make font size 1 point bigger	CTRL +]
To make font size 1 point smaller	CTRL + [

Making writing bold, italic and underlining: At first Select which part you want to change, then taking the pointer on B, I, U on the toolbar, and clicking the right button of the mouse get the desired effect. You can do it by commanding through keyboard:

Functions	Commanding keys
Bold	CTRL + b
Italic	CTRL + i
Underline	CTRL + u

Alignment of a document: The margin alignment of the paragraphs of a document is determined by this command. Usually the paragraph is aligned with left, but the alignments are of four kinds, left, right, centre and justified alignment. To change the alignment of a document, at first select it, then clicking the icons get the desired alignment.



Keyboard Shortcut:


Functions	Commanding keys
Left Alignment	CTRL + L
Right Alignment	CTRL + R
Centre Alignment	CTRL + E
Justified Alignment	CTRL + J

Besides, formatting has so many works such as determining line space, making table, bullet symbols and numbers, and changing colour of fonts etc. You will master all the techniques by working in word processing software.

Printing: Now we can write document in Bengali by using Bengali word processor. Let's learn how to print the document.

To print a document, we need ?

- a printer connected rightly to the computer;
- software to install the printer;
- papers of perfect size;

After making everything ready and taking the permission of your teacher click the button of the mouse on the icon  of the printer. You can get the job done by pressing Ctrl + p together. Then press enter key, and the printing work will be started instantly.

Document Management: It's very easy to make a Bengali document in word processor. What is next? The next step is to save the document so that you can find it easily again when necessary. It is called document management.

Usually every document is saved in My Document folder, but your document will stay with a lot of documents. So you should follow the steps given below to find out the document easily:

- a. Open another folder in My Document folder;
- b. Initially the name of the folder will be New Folder. You may give it a new name as per your choice (after your name or according to dates);
- c. To save your document, press CTRL and s together, or click the left button of the mouse on the 'save' icon on the toolbar. A dialogue box will come, write the name in the file name box and save it;
- d. Name the file according to the nature of the document so that you can find it quickly when required;

Group Activity

Make a statement about the necessity of the document management and represent in the classroom.

Vocabulary: Keyboard layout, Document formatting, Cut, Copy, Paste, Keyboard shortcut, Printing

Sample Questions:

- Which one is the writing software in the computer?
 - Graphics Software
 - System Software
 - Word processing Software
 - Spreadsheet Software
- Which one is Bengali Phonetic Software?
 - Science
 - Probortan
 - Lekhoni
 - Auvro
- Why is 'Enter' key used?
 - to delete a selected part
 - to move the cursor down a line
 - to delete the letter before the cursor
 - to cancel menu or dialogue box
- Where of the following should be clicked to copy something?

a.



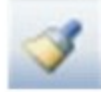
b.



c.



d.

**Read the chapter below, and answer the question nos. 5 & 6:**

Ranu was born in America. She can talk, but not write anything in Bengali. She has decided to design an Eid greeting card, and sent it to her grandpa wishing in Bengali.

- Which software will Ranu use to design the card?
 - Bijoy
 - Lekhoni
 - Proshika
 - Auvro
- To design the card, Ranu beautifully and easily can –
 - copy some words.
 - insert picture.
 - correct the spelling through editing.

Which one is correct?

- i & ii
- i & iii
- ii & iii
- i, ii & iii

Fifth Chapter

Use of the Internet in Education



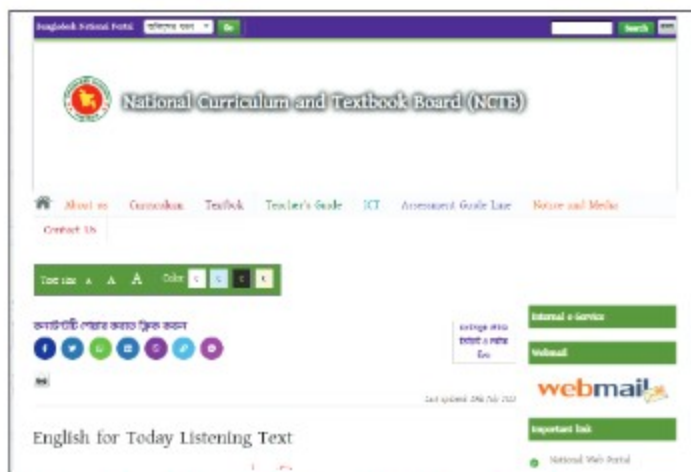
After completing this chapter, we will be able to:

1. analyse the importance of the Internet in education;
2. use the internet in education;
3. search education related information by using web-browsers.

Lesson 55: The Internet in Education

Story no. 1: Zara lost her Bangla book. She never thought of losing it, but the reality was that she lost it. When she was carrying her favourite books of stories from the school library, perhaps then, it fell down from her loose grip, and she could not notice it. She became deeply depressed since the examination was not far away. How could she take the preparation for the examination without the textbook?

Her father solved her problem. She knew that all the textbooks were kept in the website of NCTB. Anybody can download it from there. After taking the printout and binding it up, she can get a textbook almost like the original one. In this way, Zara got her favorite Bangla book within a few hours.



Any textbook can be downloaded from NCTB website (www.nctb.gov.bd)

Story no.2: Akash has learnt from his science textbook that Pluto is no longer a planet. He was very surprised at hearing it. He has been knowing since his boyhood that Pluto is a planet in the solar system. How is it excluded from the list of planets? He asked his parents and his elder brothers about the reason, but no one could give him a convincing answer. His class teacher could not give him the right answer either. Then he abruptly remembered of the Internet, and just searching a little got the answer he was looking for. It was fortunate that, the thought of the Internet came to his mind.

Story no. 3: Priyanka was busy with a computer programming, but she was stuck somewhere, and could not proceed further. She could not use a particular function though she tried hard. But she had to finish a huge homework, and without

knowing the function, it was impossible for her to complete the job. She searched a lot in the Internet for the solution, but her effort ended in vain. In spite of that, she did not give up. She put the question in the language forum. Five people replied to her by an hour, and one of the answers was what she really required. Priyanka was very delighted, and she can dived working with fresh enthusiasm.

Story no.4: Ratan will sit for the examination on English. He has been reading this subject for a long time, but can not understand whether his preparation was enough or not. He sought advice from a friend who told him, 'You'd better sit for an online test to assess how much you have learnt.' 'Is there any system of online test?' Ratan asked in surprise. 'Of course, there is,' his friend replied.

Ratan visited a website in the Internet and saw in great surprise that there was a system of sitting for test. He appeared at a test very enthusiastically, and discovered that his preparation was good enough. As online test has an additional advantage that the questions' answered incorrectly will be shown on the screen.

Story no. 5: Shukla teaches Fibre optics in a university. As she is younger, she lacks wide experience. She always thinks if she had acquaintance with an experienced teacher, she would have learnt how to teach the course more effectively by sharing knowledge with them.

One day while browsing the internet, she luckily got the lecture notes of the full course that she teaches. An efficient professor of a renowned university prepared the lecture.

She instantly downloaded the courses and arranged her lecture in an organised way, and next day, she went to attend her class with more confidence.

Story no. 6: Razib obtained a master's degree in Physics, but he felt a bit dejected for not having any course in Astrophysics in his university. He had long cherished desire to study the course. One day he came to know that a renowned professor of a famous university was going to run an online course in Astrophysics. He learnt that he might take the course, submit the homework and sit for the examination.

Razib instantly registered his name and started reading Astrophysics.

All the six events cited above are true. Do you still have any suspicion about the use of the Internet in education?

Group Activity

Write an essay on the steps that could have taken if all the students of Bangladesh had a laptop of their own.

Vocabulary: Astrophysics, Fiber Optics, Pluto

Lesson 56: The Internet in Education

Those who read the previous lesson very attentively have understood that the Internet is one of the most important of all the tools being used in education. It not only actively helps in teaching but also passively helps educational institutions to run effectively.

The screenshot shows the Shikhhok.com website interface. At the top, there is a banner with the word 'শিক্ষক' (Shikhhok) and the tagline 'বাংলায় অনলাইনে মুক্ত জ্ঞানের মেলা' (A fair of free knowledge online in Bangladesh). Below the banner is a navigation bar with options like 'গৃহপাঠ', 'সার্চ করুন', 'আমাদের কথা', and 'প্রশ্ন করুন?'. A search bar is also present. The main content area features a video player titled 'Introduction to computer programming' with a 'Welcome' message and 'Share' and 'More info' buttons. The video shows a man in a blue patterned shirt standing in front of a whiteboard. To the right of the video player is a sidebar with a 'সবকিছু' (Everything) section containing an 'Email Address' input field and a 'প্রেরণ করুন' (Send) button. Below that is a 'সর্বাঙ্গীণ' (All) section listing various courses such as 'অনুষ্ঠান ১০১', 'অনুষ্ঠান ১০২', 'প্রোগ্রামিং', '৩ডি * ১০১', 'অনুষ্ঠান ১০৩', 'অনুষ্ঠান ১০৪', 'অনুষ্ঠান ১০৫', 'অনুষ্ঠান ১০৬', 'অনুষ্ঠান ১০৭', 'অনুষ্ঠান ১০৮', 'অনুষ্ঠান ১০৯', 'অনুষ্ঠান ১১০', 'অনুষ্ঠান ১১১', 'অনুষ্ঠান ১১২', 'অনুষ্ঠান ১১৩', 'অনুষ্ঠান ১১৪', 'অনুষ্ঠান ১১৫', 'অনুষ্ঠান ১১৬', 'অনুষ্ঠান ১১৭', 'অনুষ্ঠান ১১৮', 'অনুষ্ঠান ১১৯', 'অনুষ্ঠান ১২০', 'অনুষ্ঠান ১২১', 'অনুষ্ঠান ১২২', 'অনুষ্ঠান ১২৩', 'অনুষ্ঠান ১২৪', 'অনুষ্ঠান ১২৫', 'অনুষ্ঠান ১২৬', 'অনুষ্ঠান ১২৭', 'অনুষ্ঠান ১২৮', 'অনুষ্ঠান ১২৯', 'অনুষ্ঠান ১৩০', 'অনুষ্ঠান ১৩১', 'অনুষ্ঠান ১৩২', 'অনুষ্ঠান ১৩৩', 'অনুষ্ঠান ১৩৪', 'অনুষ্ঠান ১৩৫', 'অনুষ্ঠান ১৩৬', 'অনুষ্ঠান ১৩৭', 'অনুষ্ঠান ১৩৮', 'অনুষ্ঠান ১৩৯', 'অনুষ্ঠান ১৪০', 'অনুষ্ঠান ১৪১', 'অনুষ্ঠান ১৪২', 'অনুষ্ঠান ১৪৩', 'অনুষ্ঠান ১৪৪', 'অনুষ্ঠান ১৪৫', 'অনুষ্ঠান ১৪৬', 'অনুষ্ঠান ১৪৭', 'অনুষ্ঠান ১৪৮', 'অনুষ্ঠান ১৪৯', 'অনুষ্ঠান ১৫০'.

Teachers of different disciplines conduct different courses in Shikhhok.com

Now you get the results of public examinations instantly by using the Internet. It was unimaginable a few days ago. People living in the periphery would come to the city to collect it. Now it can be known just through a SMS or by a click of the mouse.

Now the Internet plays a very vital role not only in publishing results but also in completing the admission process quickly. You are familiar with the registration process in universities through mobile phones. Similarly, thousands of students can complete their process by using the Internet. At least 4 lakh students appear at the admission test of the National University of our country. Do you know that all of them use the Internet for the application?

NATIONAL UNIVERSITY
জাতীয় বিশ্ববিদ্যালয়

New Student Registration

Student must use his/her own Email Address and Mobile number.

All Star (*) Field Information are Mandatory.

Roll No

* Registration No

* Student Name

* Father Name

* Mother Name

At least 4 lakh applications for the admission test to the National University were processed through Information Technology

Students want to have information about the institution before getting admission there. Once people would physically go there to collect the information, but now you can get the information of the institutions located in the farthest corner of the world by using the Internet sitting in your home.

We have availed of many advantages of the technology, and very soon, we are going to enjoy more facilities. Virtual classrooms are coming into being in our universities, and they will be interconnected with each other. When a teacher will teach in their classroom, not only the real students present there listen to them, but hundreds of students throughout the country will attend the class sitting in virtual classrooms.

Students of medical colleges will get the opportunity to watch a critical surgery from a long distance. A learner can watch a planet or a star of the remote galaxy through the telescope set on the peak of a mountain. A student can successfully accomplish an experiment of a modern lab staying in his reading room. He/She can easily collect the book from Internet which is not available in the school library.

Are you perplexed thinking about how people studied when there has no Internet?

Group Activity

Design a wall magazine imagining what role the information technology might play after a hundred years.

Vocabulary: Virtual Classroom, Telescope, Galaxy

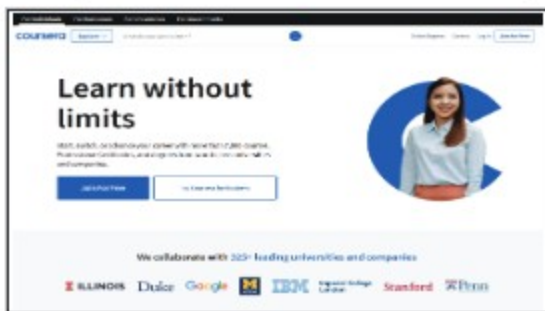
Lesson 57-70: Searching Academic Information by Using Web Browser

Academic Information in the Internet

The Internet is a big source of information. It contains information of almost all the subjects of the world including education, sports, culture, religion, and so on. We can get valuable information of education i.e. system of education, way of education, curriculum, syllabus etc. by browsing the Internet.

The information is kept in the Internet arranging in different ways. One is written information i.e. information in the black and white. Some websites have information that is direct and specific such as Newton's laws of motion. Some websites facilitate explanations and examples of the laws. Besides, many subjects are available in the Internet as audiovisual format. When an expert explains an academic subject, it is recorded in the video camera, and finally is uploaded in the video sharing site like youtube (www.youtube.com). Anybody can either watch or download it. There are cartoons or animated films on academic subjects in some websites where the subject is explained through animations. Some sites provide facilities of asking questions, quiz competitions, and even aptitude test.

Courses on different disciplines are available in the Internet. Generally, learners create accounts on the e-learning platform, providing necessary personal and contact information. Upon successful course completion and assessment, learners receive digital certificates. There are some sites in English language such as www.coursera.org, www.alison.com, www.edx.org etc.

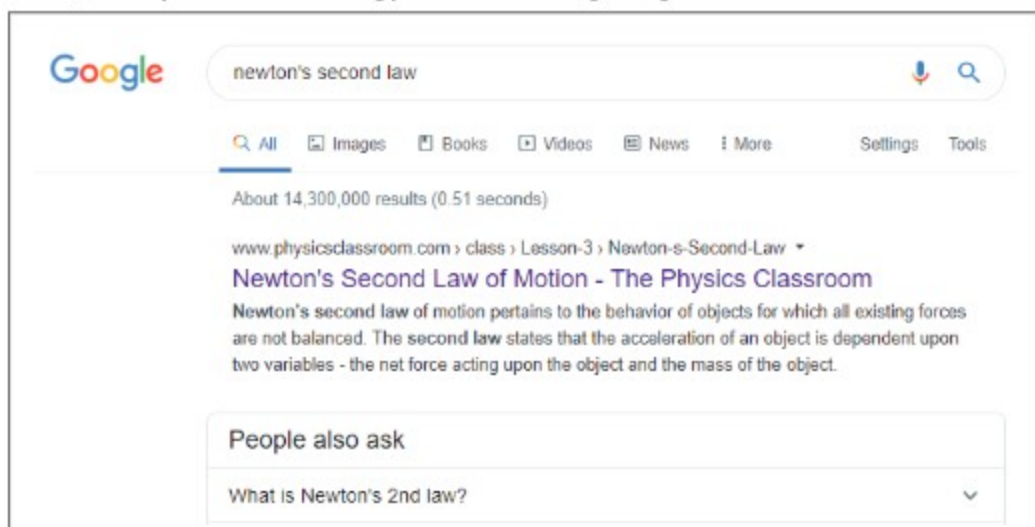


You can enrol free courses in www.coursera.org

The world famous American university, Massachusetts Institute of Technology (MIT) offers different courses in their website. Visiting ocw.mit.edu, anybody from any country can complete the course after the registration.

Not only in English but the academic curriculum in Bangla is thriving too. All the academic textbooks of the school have been posted online as e-book format by the government. You can download your necessary e-book edition from the NCTB website www.nctb.gov.bd.

Some academic courses have been running in the Bangla language. www.shikkhok.com is a site like this where Mathematics, Environmental Science, Computer Technology etc. are being taught.



The easiest way of getting a bit of academic information is to look for information in a search engine. To search a bit of information, the name should be written in correct spelling.

An example of searching Newton's Laws of Motion using the search engine "Google" is shown here. It is also noticed that at least 1,43,00,000 websites or videos contain information of this item.

If you write in correct spelling, you will get numerous links about any required information. You need to be skilled in using search engine to find out information from the Internet. If you use it regularly, you will easily be skilled

in the Internet. You will get the links of information of education in the Internet through right browsing. The following are the education related websites:

Group Activity

Get the results of the following subjects after searching through one of your favorite search engine like Google, Yahoo, or anything else:

1. The Education Policy of Bangladesh
2. Origin of Matter
3. William Shakespeare
4. Kazi Nazrul Islam
5. Three States of Material

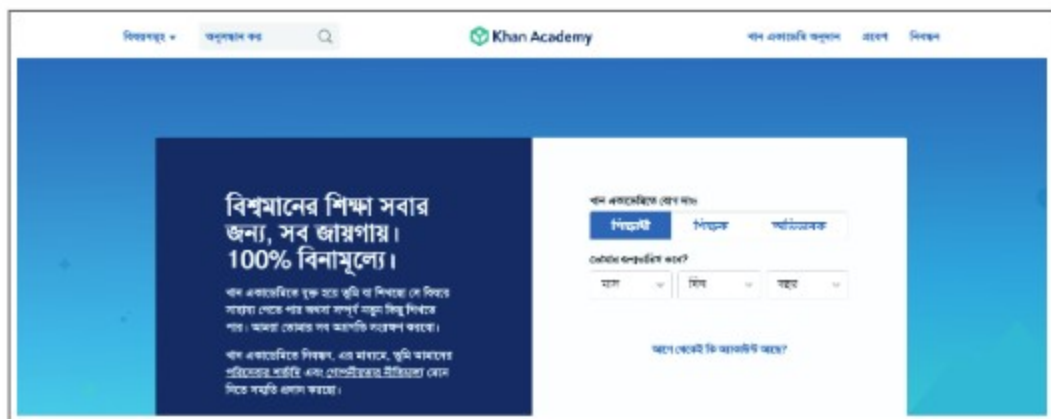
1. www.nctb.gov.bd : It is the website of NCTB, Bangladesh. The digital editions of the textbooks of all the classes are found here. You can read the book on the monitor of the computer. You can download any of the

textbooks of your class. The academic books of your elder and younger brothers and sisters can be downloaded from the site too.

2. www.moedu.gov.bd: It is the website of the Ministry of Education of Bangladesh. All the policy making decisions and directives regarding the educational system are circulated through the site. People can collect information of the national education policy, creative system of examination, the dates of public examinations, results etc.

3. www.wikipedia.org: It is the most enormous and free encyclopedia of the Internet. The people of the whole world volunteered to initiate the website. It provides people with information in almost two hundred languages. An English language version of the encyclopedia is very essential for us. You will get over 70 lakh articles in the English here, and some of the articles are education-related. There is a searching box in the wikipedia. After writing the name of the subject you want to search in the correct spelling, press the enter button, and you will get the search results. Bengali version of wikipedia (bn.wikipedia.org) is growing rapidly. It has only 1,60,000 articles, and can get your required information from there.

4. www.khanacademy.org: It is the most popular website of education in the world. Salman Khan, a Bangladeshi born educationist is the founder of the site.



Any academic video can be downloaded from the website of Khan Academy

He has explained different subjects including mathematics, history, healthcare physics, chemistry, biology, economics, space-technology, computer science etc. by making 3400 audiovisual files. These audiovisuals have been watched more than 213 crore times. You can download the videos that you require.

5. bn.khanacademy.org: All the audiovisuals of Khan Academy are in English, but those are translated in different languages that included Bengali. This site will provide you with the Bengali translations of these lessons that are divided into four categories such as biology, chemistry, physics and organic chemistry. There is a list at the beginning of every link from where you may pick your essential videos. www.youtube.com/user/khanacademybangla has several hundred audiovisuals on mathematics, algebra, arithmetic, statistics, trigonometry etc. You can download the necessary audiovisuals from the website.

6. <https://bbcjanala.ghorilearning.com>: It's a website of learning English language. There are plenty of websites in the Internet to learn English, but this site is useful for the learners of our country. There are some in this site courses to develop fluency in English Language. Anybody can attend the courses through free registration. After the completion of the course, you can take the printout of the course report and certificate. You can register for the course to enhance your fluency in English.

7. <https://www.themathdoctors.org>: It is a popular mathematics related website. Problems of algebra, geometry and calculus of school level have been explained clearly with examples in the website. If anything is not available in this site, consult Dr Math.

8. www.matholympiad.org.bd: It is a website of discussion or mathematical problems, and the learners can ask questions to solve their problems. Teachers and volunteers of Bangladesh Mathematics Olympiad run the site. They discuss and give the solutions of the problems of Bangladesh and the International Mathematics Olympiad in this forum. Besides, they arrange competitions in regular intervals.

9. www.learningscientists.org: You may have the practical knowledge of the subjects of science.

10. www.w3schools.com or www.tutorialspoint.com are two popular websites for learning programming language.

11. **The Ancient Elementary books**: Scientists and educationists of the world immensely contributed to develop science and knowledge, and they helped the civilization to advance. Their thought and experience were recorded in the books written by them. The digital versions of those fundamental books are found in the Internet. The links of some of those books are given below:

Elements by Euclid	https://www.gutenberg.org/files/21076/21076-pdf.pdf
Principia Mathematica by Newton	https://redlightrobber.com/red/links_pdf/Isaac-Newton-Principia-English-1846.pdf
The Origin of Species by Darwin	https://labgenmol-fo-unam.com/wp-content/uploads/2019/04/the-origin-of-species_charles-darwin.pdf

The digital version like these books can be collected from the internet free of cost: now. You can download the books by using search engine in a right way.

Sample Questions:

- Which website can the textbooks of the school and the Madrasa be downloaded from?
 - Secondary and Higher Secondary Education Board, Dhaka
 - Madrasa Education Board
 - Board of Technical Education
 - National Curriculum and Textbook Board

2. What are the textbooks of School and Madrasa posted in the website called?
- a. e-book b. Internet book
c. NCTB book d. digital book
3. Through the Internet, you can ?
- a. get help of your academic subject.
b. complete the admission process.
c. attend online classes.

Which one is correct?

- a. i & ii b. i & iii
c. ii & iii d. i, ii & iii

Read the passage below, and answer the question nos. 4 & 5:

Aoni often her forms badly in Mathematics and English. His parents sharply scold him. He does not like to learn Mathematics in the conventional way. He wants to learn it with delight. His earnest inclination is that he will amaze everyone by participating in the Mathematics Olympiad after mastering the subject well.

4. Aoni can solve his problem by ?
- a. using the Internet.
b. taking help of the friends through cell phones.
c. using the computer.

Which one is correct?

- a. i & ii b. i & iii
c. ii & iii d. i, ii & iii

5. Which one is a useful website for Aoni to learn Mathematics?
- a. www.matholympiad.org.bd
b. www.khanacademy.org
c. www.themathdoctors.org
d. www.bn.khanacademy.org

