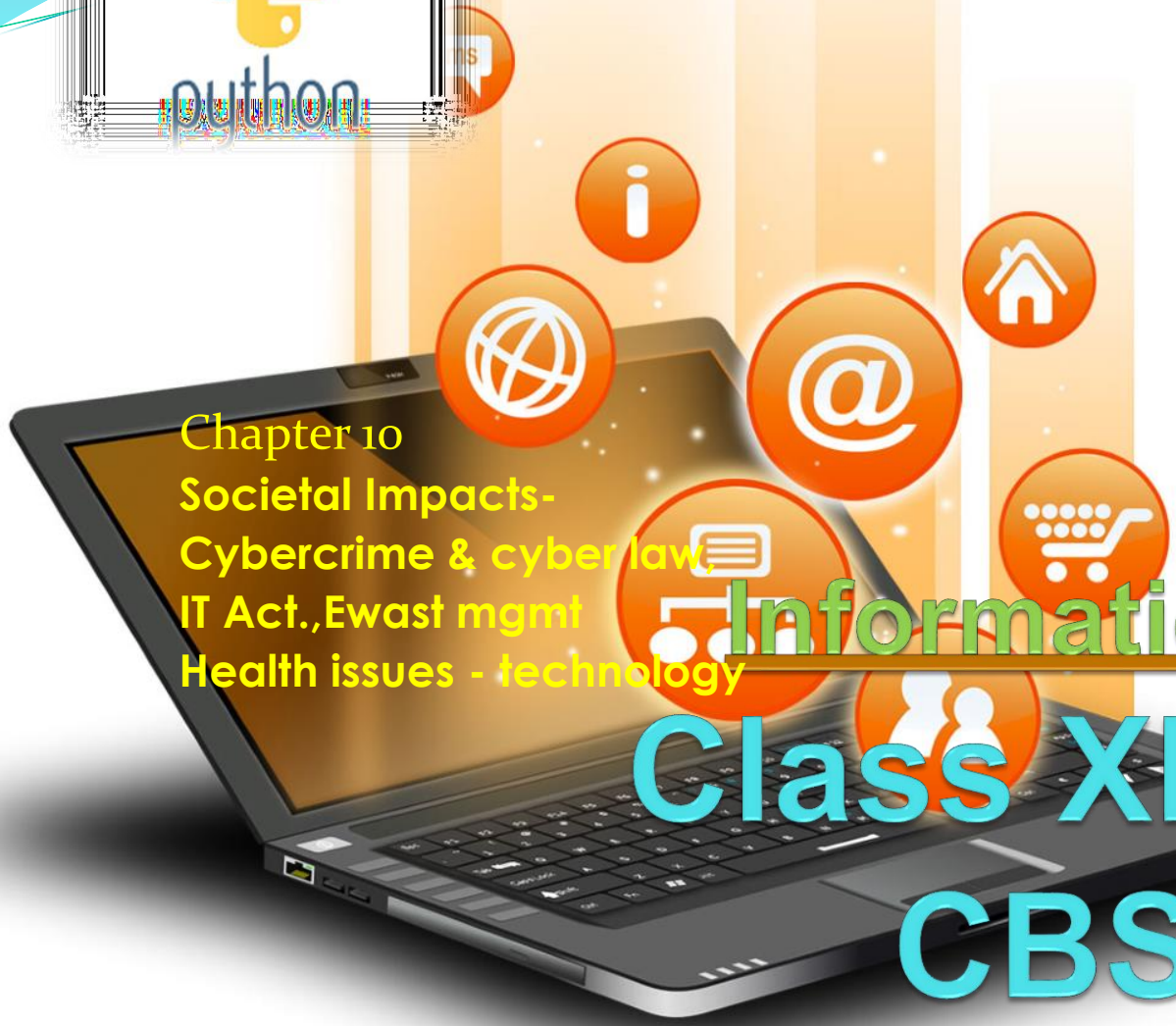

New syllabus 2022-23

Chapter 10
Societal Impacts-
Cybercrime & cyber law,
IT Act.,Ewast mgmt
Health issues - technology

Informatics Practices

Class XII (As per CBSE Board)

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Societal Impacts - 2

Cyber Crime - Any crime that involves a computer and a network is called a "Computer Crime" or "Cyber Crime.

Or in other term ,it is a crime in which a computer is the object of the crime (hacking, phishing, spamming) or is used as a tool to commit an offense (child pornography, hate crimes).

STEPS TO PROTECT YOURSELF AGAINST CYBER CRIME

1. Make sure your security software is current – and update it regularly.
2. Lock or log off your computer when you step away.
3. Go offline when you don't need an internet connection.
4. Consider sharing less online.
5. Think twice about using public Wi-Fi.
6. When in doubt, don't click.

Types of Cyber Crime

A computer is the target of the attack—for example, a data breach on a bank site

A computer is the weapon for an attack—for example, a denial of service (DoS) attack

A computer is an accessory to a criminal act—for example, digital identity theft which leads to theft of funds from a bank account

Hacking –

Hacking is the process of gaining unauthorized access into a computing device, or group of computer systems. This is done through cracking of passwords and codes which gives access to the systems.

Difference between hacker and cracker is that a cracker breaks the security of computer systems, and a hacker is a person who likes to explore computer systems and master them.

Types of Hackers

Black hat hackers or crackers are individuals with extraordinary computing skills, resorting to malicious / destructive activities. Black hat hackers use their knowledge and skill for their own personal gains probably by hurting others.

White hat hackers are those individuals who use their hacking skills for defensive purposes. This means that the white hat hackers use their knowledge and skill for the good of others and for the common good. Ethical hacking also known as penetration testing or white-hat hacking, involves the same tools, tricks, and techniques that hackers use,but with one major difference that Ethical hacking is legal.

Grey-Hat Hackers These are individuals who work both offensively and defensively at different times. Their behavior can't be predicted. Sometimes they use their skills for the common good

Societal Impacts - 2

Hacking Process

- Foot Printing - Whois lookup,NS lookup,IP lookup
- Scanning - Port Scanning,Network Scanning
- Gaining Access-Password Attacks,Social Engineering,Viruses
- Maintaining Access - Os BackDoors,Trojans,Clears Tracks

Required Skills of an Ethical Hacker

- Microsoft: skills in operation, configuration and management.
- Linux:knowledge of Linux/Unix;security setting, configuration, services.
- Network Protocols: TCP/IP; how they function and can be manipulated.
- Firewalls: configurations, and operation of intrusion detection systems.
- Project Management: leading, planning, organizing, and controlling a penetration testing team

What do hackers do after hacking?

- Clear logs and hide themselves
- Install rootkit (backdoor) -The hacker who hacked the system can use the system later, It contains trojan virus, and so on
- Patch Security hole- The other hackers can't intrude
- Install irc related program - identd, irc, bitchx, eggdrop, bnc
- Install scanner program- mscan, sscan, nmap
- Install exploit program
- Install denial of service program
- Use all of installed programs silently

How to Prevent Hacking?

- Download software from authorized websites
- Scan all types of hard drives before running
- Abstain from keeping easy passwords
- Never store or share login information

Societal Impacts - 2

Phishing is a cyber attack that uses disguised email as a weapon.The attackers masquerade as a trusted entity of some kind, The goal is to trick the email recipient into believing that the message is something they want or need — recipient fills/send sensitive information like account no, username ,password etc. ,then attacker use these.

How to prevent phishing

- Always check the spelling of the URLs before click
- Watch out for URL redirects, that sent to a different website with identical design
- If receive an email from that seems suspicious, contact that source with a new email, rather than just hitting reply
- Don't post personal data, like your birthday, vacation plans, or your address or phone number, publicly on social media

Societal Impacts - 2

Cyberbullying is the use of technology to harass, threaten or humiliate a target. Examples of cyberbullying is sending mean texts, posting false information about a person online, or sharing embarrassing photos or videos.

Cyberbullying differs from in-person bullying :

- More difficult to recognize –Bullying conducted via text or online medium can more easily go unnoticed.
- More relentless – Cyberbullying doesn't end at school, and can reach at child home.
- More enduring –It leaves a paper trail that can follow both the bully and the victim for years

Societal Impacts - 2

Different Types of Cyber Bullying

- Doxing – publishing revealing personal information about an individual online, for purposes of defaming,humiliating, or harassing the victim
- Harassment – posting threatening,hurtful, or intimidating messages online, or sending them directly to someone, with the intention of harming that person
- Impersonation – creating fake accounts or gaining access to a person's real social media accounts and posting things to damage the victim's reputation
- Cyberstalking – tracking and monitoring a person's online activity, and using the internet to stalk or harass an individual

Societal Impacts - 2

How to Prevent Cyber Bullying?

- Be aware of child's online activities
- Watch for the following signs of cyberbullying in children:

➢ Refusal to allow to see what they are doing online
➢ Avoidance of discussing what they are doing online
➢ Sudden, unexplained increase or decrease in online activity
➢ Deactivating social media accounts
➢ Emotional responses (including sadness, anger, happiness) linked to their device usage

Adults should also teach children to recognize and be aware of the signs of cyberbullying themselves.

Societal Impacts - 2

CYBER LAW

cyber law as it is the part of the legal systems that deals with the cyberspace,Internet and with the legal issues. It covers a broad area, like freedom of expressions, access to and utilization of the Internet, and online security or online privacy. Generically, it is known as the law of the web.

What is the importance of Cyber Law?

Cyber law plays a very important role in this new epoch of technology. It is important as it is concerned to almost all aspects of activities and transactions that take place either on the internet or other communication devices. Whether we are aware of it or not, but each action and each reaction in Cyberspace has some legal and Cyber legal views

Societal Impacts - 2

The Information Technology Act of India, 2000
According to Wikipedia "The Information Technology Act, 2000 (also known as ITA-2000, or the IT Act) is an act of the Indian Parliament (no 21 of 2000), it was notified on 17th October 2000. It is the most important law in India that deals with the digital crimes or cyber crimes and electronic commerce. It is based on the United Nations
Model Law on Electronic Commerce 1996 (UNCITRAL Model) recommended by the General Assembly of United Nations by a resolution dated 30 January 1997"

Societal Impacts - 2

Some key points of the Information Technology (IT) Act 2000 are as follows:

- Act has given birth to new business to companies to issue digital certificates by becoming the Certifying Authorities.
- This Act allows the government to issue notices on internet through e-governance.
- E-mail is now considered as a valid and legal form of communication.
- Digital signatures are given legal validity within the Act.
- The communication between the companies or between the company and the government can be done through internet.
- Addressing the issue of security is the most important feature of this Act. It introduced the construct of digital signatures that verifies the identity of an individual on internet.
- In case of any harm or loss done to the company by criminals, the Act provides a remedy in the form of money to the company

Societal Impacts - 2

The Information Technology Act, 2000 provides legal recognition to the transaction done via an electronic exchange of data and other electronic means of communication or electronic commerce transactions.Some of sections under it act 2000 are given below.

SECTION	OFFENCE	PENALTY
67A	Publishing images containing sexual acts	Imprisonment up to seven years, or/and with fine up to Rs. 1,000,000
67B	Publishing child porn or predating children online	Imprisonment up to five years, or/and with fine up to Rs.1,000,000 on first conviction. Imprisonment up to seven years, or/and with fine up to Rs.1,000,000 on second conviction.
67C	Failure to maintain records	Imprisonment up to three years, or/and with fine.
68	Failure/refusal to comply with orders	Imprisonment up to three years, or/and with fine up to Rs.200,000
69	Failure/refusal to decrypt data	Imprisonment up to seven years and possible fine.
70	Securing access or attempting to secure access to a protected system	Imprisonment up to ten years, or/and with fine.
71	Misrepresentation	Imprisonment up to three years, or/and with fine up to Rs.100,000

Societal Impacts - 2

E-Waste -Whenever an electronic device covers up its working life, or becomes non-usable due to technological advancements or becomes non-functional, it is not used anymore and comes under the category of e-waste or electronic waste. As the technology is changing day by day, more and more electronic devices are becoming non-functional and turning into e-waste. Managing such non-functional electronic devices is termed as e-waste management.

Ewaste Hazards -

On environment

- Acidification of soil
- Air pollution
- Pollution of ground water
- Landfills with lead and heavy metals

On Human Health

- Lung cancer
- DNA damage
- Asthmatic bronchitis
- Chronic damage to the brain
- Damage to heart, liver and spleen

Societal Impacts - 2

E-waste management can be defined as the practical and holistic approach and the founding pillar of cutting down waste from our mother earth. It is reusing and recycling of e-waste which is no longer in use and can be salved for some of its components. We are on the verge of a technological breakthrough with the introduction of AI and we need to dispose off toxic e-waste from our home before we pile up more and more e-waste. We are is dire need of introducing a customer awareness campaign because of lack of interest and knowledge regarding e-waste.

Proper disposal of used electronic gadgets

E-waste is a growing problem for us in India. As an 132cr strong economy, we produce e- waste in large quantities. It is very important to dispose off waste in a pragmatic manner.

Ways to dispose off e-waste:

1. Give Back to Your Electronic Companies and Drop Off Points
2. Visit Civic Institutions
3. Donating Your Outdated Technology
4. Sell Off Your Outdated Technology
5

Societal Impacts - 2

Awareness of Health concerns related to the usage of technology.

Physical Problems:

- Repetitive Strain Injury: the pain exists even when resting and that the lightest work becomes hard to do.
- Carpal Tunnel Syndrome: This is an illness caused by injuries that occur due to force on the median nerve found in the wrist.Its symptoms can occur as tingling in hands and fingers and the feeling of lethargy, sudden pain in wrists and arms and sometimes even in shoulders, neck and in the body
- Computer Vision Syndrome: Experts stated that people blink their eyes more frequently while using a computer than they do at other times and that they face some problems related to this situation.
- Radiation: Computer screens produce radiations of various types. There have always been doubts that Individuals will have illnesses such as headaches and inattentiveness
- Sleeping Disorders and Decrease in Productivity
- Loss of Attention and Stress

Societal Impacts - 2

Awareness of Health concerns related to the usage of technology.

Psychological Problems:

- Fear of technology
- Computer anxiety
- Internet addiction
  - Egosurfing: An illness of regularly searching for one's own name on the web and checking what information is available about one's own on the net.
  - Infornography: The word, derived from pornography and information, describes the state of "trying to soothe hunger for information on the net."
  - Blog streaking: A desire to spread information online that shouldn't be known by everybody.
  - Youtube-Narcissism: Constantly uploading one's own videos in order to introduce and make himself or herself known tooth ers.
  - Google-Stalking: Trying to get information about all his or her relatives or acquaintances in the web.
  - Photolurking: Looking at the photo albums of others' on the net.
  - Wikipediholism: Contributing to the internet encyclopedia, Wikipedia, sending some one's own writings, and revising the present texts.