

Chapter 6 · Societal Impacts

CBSE Class 12 Informatics Practices (065) · Unit 4 = 10 marks · Ultimate Revision Sheet

60-SECOND RECALL

Digital footprint	Active = you post it · Passive = collected without you knowing
3 IPR types	Copyright (creative works) · Patent (inventions) · Trademark (brand identity)
FOSS	Free and Open Source Software — “free” means freedom , not price
4 cybercrimes	Hacking · Phishing · Cyber bullying · Identity theft
Indian law	IT Act 2000 , amended 2008
E-waste rule	3 Rs — Reduce, Reuse, Recycle

1. Digital Footprint

DEFINITION A digital footprint is the trail of data you leave behind while using the Internet — websites visited, emails sent, posts, searches, and data submitted online. It is **permanent** and can be traced back to you.

Type	Meaning	Examples
Active	Data you deliberately share	Social media posts, comments, emails sent, filling an online form, uploading a photo
Passive	Data collected without your knowledge	IP address logged by a website, browsing history, cookies, location tracking, search history

Why it matters: a digital footprint is **permanent and public**; employers and colleges check it; it can be misused for identity theft or targeted advertising. **Manage it by** thinking before posting, adjusting privacy settings, using strong passwords, logging out of shared devices, and periodically searching your own name.

2. Net and Communication Etiquette

THE THREE ETIQUETTES

Type	Rules
Net etiquette <i>netiquette</i>	Be ethical — no copyright violation, no hacking · Be respectful — respect privacy and diversity · Be responsible — avoid cyber bullying, do not spread rumours
Communication etiquette	Be precise — do not waste others' time · Be polite — no abusive language · Be credible — do not post false information · Avoid ALL CAPS , which reads as shouting
Social media etiquette	Choose your friends carefully · Do not overshare personal information · Beware of fake news · Respect others' sentiments · Keep personal and professional profiles separate

3. Data Protection

CONCEPT Data protection means safeguarding data from unauthorised access, loss, corruption or misuse. Sensitive personal data includes bank details, passwords, biometric data, medical records and Aadhaar numbers.

Ways to protect data: strong and unique passwords · two-factor authentication · encryption · firewalls and antivirus · regular backups · avoiding public Wi-Fi for sensitive work · checking for HTTPS before entering data · logging out of shared computers.

4. Intellectual Property Rights (IPR)

DEFINITION Intellectual Property Rights are the legal rights given to a person over the creations of their mind — inventions, literary and artistic works, designs, symbols and names.

THE THREE TYPES — know exactly what each protects

Type	Protects	Duration	Example
Copyright	Creative and literary works — books, music, films, software code, paintings, photographs	Life of author + 60 years (India)	© symbol on a book or song
Patent	Inventions — a new product or process that is novel, useful and non-obvious	20 years	A new drug formula; a new machine design
Trademark	Brand identity — names, logos, symbols, slogans that distinguish goods	10 years , renewable	™ and ® symbols; the Nike swoosh

THE ONE-LINE TEST Copyright → something *created* (a work of expression).

Patent → something *invented* (a new product or process).

Trademark → something that *identifies a brand* (name, logo, slogan).

5. Plagiarism, Licensing and Copyright

Term	Meaning
Plagiarism	Presenting someone else's work or ideas as your own without giving credit. It is academic theft , whether intentional or not.
Copyright infringement	Using copyrighted material without permission of the owner — even with credit. Illegal .
Licence	The permission given by the owner stating how the work may be used, modified and distributed.
Public domain	Works whose copyright has expired or been waived — free for anyone to use.
Creative Commons (CC)	A set of licences that let creators allow certain uses while keeping some rights.

PLAGIARISM vs COPYRIGHT INFRINGEMENT — a frequent 2-marker

Plagiarism = using someone's work **WITHOUT** giving credit → an *ethical / academic* offence.

Copyright infringement = using copyrighted work **WITHOUT** permission, even if you credit the author → a *legal* offence.

Citing the source fixes plagiarism but **not** copyright infringement — for that you need permission.

Avoid plagiarism by: citing all sources · using quotation marks for exact text · paraphrasing in your own words *and still citing* · adding a bibliography · using plagiarism-check tools.

6. Free and Open Source Software (FOSS)

THE CATEGORIES

Type	Meaning	Examples
Free Software	Freedom to run, study, modify and redistribute . "Free" refers to freedom , not price.	GNU tools
Open Source Software	Source code is available and may be modified and redistributed	Linux, Firefox, Python, LibreOffice, MySQL
FOSS	Free and open source — both freedoms together, usually free of cost	Ubuntu, GIMP, Apache
Proprietary Software	Source code is closed ; usage restricted by licence; usually paid	Microsoft Windows, MS Office, Photoshop
Freeware	Free of cost but the source code is NOT available	Adobe Reader, Skype, Zoom (basic)
Shareware	Free to use for a trial period , then payment is required	Trial versions of WinZip, WinRAR

THE CLASSIC TRAP

Freeware is NOT open source. Freeware costs nothing but its **source code is hidden**. Open source gives you the **code**, whether or not it costs money. "Free" in FOSS means **freedom**, not price — "free as in speech, not free as in beer".

7. Cybercrime and Cyber Law

THE MAIN CYBERCRIMES

Crime	Meaning
Hacking	Gaining unauthorised access to a computer system or network. White hat = ethical hacker, tests security with permission. Black hat = malicious hacker, illegal. Grey hat = in between; breaks in without permission but without malicious intent.
Phishing	Sending fake emails, messages or websites that look genuine to trick users into revealing passwords, OTPs or bank details .
Cyber bullying	Harassing, threatening, humiliating or targeting a person using digital technology — abusive messages, spreading rumours, posting embarrassing content.
Cyber trolling	Deliberately posting provocative or offensive comments online to upset people.
Identity theft	Stealing someone's personal information to impersonate them, usually for financial gain.
Ransomware	Malware that encrypts the victim's data and demands payment to release it.

Cyber stalking

Repeatedly following or monitoring a person online, causing fear.

THE INFORMATION TECHNOLOGY ACT, 2000

India's primary law on cybercrime and electronic commerce, amended in 2008. It:

- gives legal recognition to electronic records and digital signatures
- defines cyber offences and their penalties — hacking, identity theft, publishing obscene material, data theft
- provides for the Cyber Appellate Tribunal
- makes provision for data protection and privacy

Reporting: cybercrime can be reported at a cyber cell or on the national portal cybercrime.gov.in.

8. E-Waste — Hazards and Management

DEFINITION E-waste is discarded electrical and electronic equipment — old computers, mobile phones, printers, batteries, televisions, cables.

Hazards

- Contains **toxic metals** — lead, mercury, cadmium, arsenic
- **Soil and water pollution** when dumped in landfills
- **Air pollution** from open burning of plastics
- Serious **health effects** — damage to the nervous system, kidneys, lungs and skin
- Harms workers in the informal recycling sector, often children

Management — the 3 Rs and more

- **Reduce** — buy only what is needed; extend device life
- **Reuse** — donate or resell working equipment
- **Recycle** — hand over to **authorised e-waste recyclers**
- Follow the **E-Waste (Management) Rules**; use producer take-back schemes
- **Never** dump electronics with household waste

9. Health Concerns from Technology Use

Problem	Cause and prevention
Eye strain Computer Vision Syndrome	Long screen exposure. Prevention: the 20-20-20 rule — every 20 minutes , look at something 20 feet away for 20 seconds . Adjust brightness; blink often.
Repetitive Strain Injury (RSI)	Repeated typing and mouse use. Prevention: take breaks, stretch, use ergonomic keyboard and mouse.
Back and neck pain	Poor posture. Prevention: ergonomic chair, screen at eye level, feet flat on the floor.
Internet addiction	Excessive use affecting daily life. Prevention: set screen-time limits, take digital detox breaks.
Sleep disturbance	Blue light before bed. Prevention: avoid screens an hour before sleeping; use night mode.
Obesity	Sedentary screen time. Prevention: regular physical activity.

Ergonomics is the science of designing the workplace to fit the user, reducing strain and injury.

10. Question Triggers identify the concept

If the case says...	The answer is
"posted a photo on social media"	Active digital footprint
"website recorded her IP address silently"	Passive digital footprint
"copied an essay without citing the source"	Plagiarism
"used a copyrighted song with credit but no permission"	Copyright infringement
"invented a new machine and wants protection"	Patent
"wants to protect the company logo"	Trademark
"wrote a book and wants protection"	Copyright
"received a fake bank email asking for OTP"	Phishing
"someone repeatedly sent threatening messages"	Cyber bullying
"gained access to a server without permission"	Hacking
"tested security with the company's permission"	White hat / ethical hacking
"data encrypted, money demanded"	Ransomware
"free to use but source code hidden"	Freeware (not open source)
"source code available to modify"	Open source
"free for 30 days then pay"	Shareware
"old laptops dumped in a landfill"	E-waste hazard
"eyes hurt after long screen use"	Computer Vision Syndrome → 20-20-20 rule
"wrist pain from constant typing"	RSI
"which law covers cybercrime in India?"	IT Act 2000 (amended 2008)

MOST-ASKED BOARD QUESTIONS

1. **[2-3M]** *Case study:* identify the cybercrime/IPR issue and suggest what the person should do.
2. **[2M]** Differentiate between plagiarism and copyright infringement.
3. **[2M]** Differentiate between active and passive digital footprint / freeware and open source.
4. **[2-3M]** What is e-waste? Explain its hazards and management.
5. **[2M]** Explain any two health concerns from technology and how to prevent them.
6. **[1M]** Expand FOSS / IPR. Which Act deals with cybercrime in India?

THE HABIT THAT SCORES — This unit is examined almost entirely through **short case studies**. Answer in three steps: **name the concept** → **define it in one line** → **state what the person should do**. The "what to do" step is where half the marks sit, and it is the one students skip.