G.C.E. O/L Grade 11 ICT

Lesson 6: ICT in Society: Uses, Laws, Security, Health and Jobs

- 6.1 ICT in Health: Telemedicine, Medical Equipment and Medical Records
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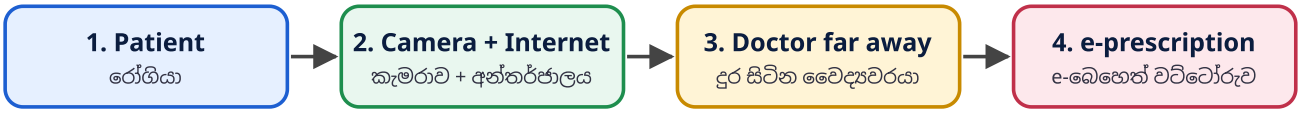
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6.1 ICT in Health: Telemedicine, Medical Equipment and Medical Records

Syllabus 15.1. Hospitals and doctors use ICT every day. A doctor can talk to a patient who is far away (**telemedicine**), watch a patient's heart from another room (**telemonitoring**), take pictures inside the body with a **CAT scanner** or **MRI**, and keep all patient details safely in **electronic medical records**.

1. Telemedicine

Telemedicine means giving medical care from a distance using ICT. The patient and the doctor are in different places. They talk by video call, send photos and reports, and the doctor can send an e-prescription.



Telemedicine: the patient and the doctor are joined by the Internet.

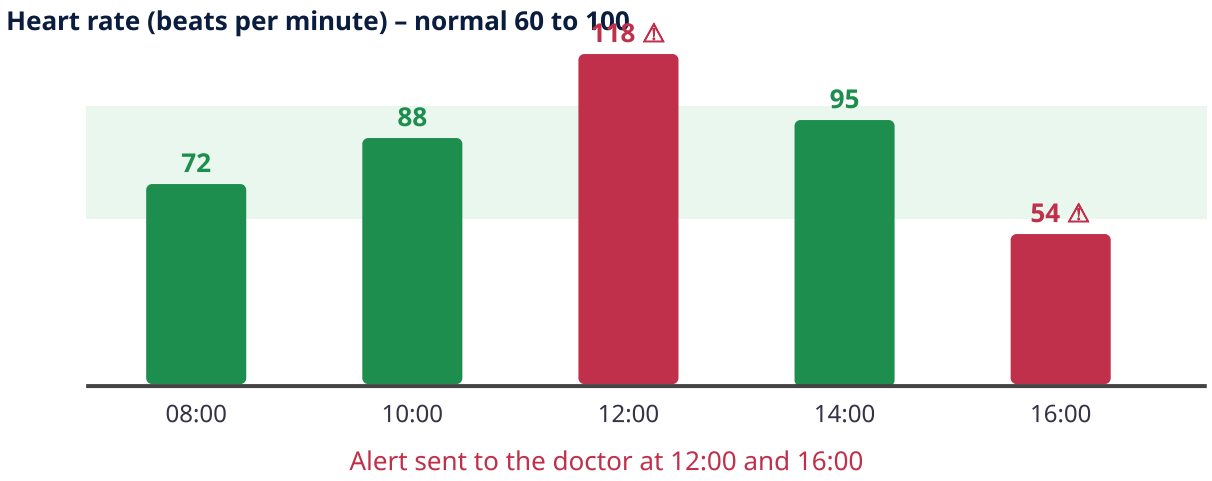
- Good for people in villages far from big hospitals.
- Saves travel time and money.
- A specialist can help a small hospital.
- Needs a good Internet connection and privacy.

2. Telemonitoring

Telemonitoring means checking a patient's body readings from a distance. Sensors measure heart rate, blood pressure, sugar or oxygen. The readings go to a computer. If a reading is outside the safe range, the computer gives an **alert** to the nurse or doctor.

Time	Heart rate	Result
08:00	72	Normal
10:00	88	Normal
12:00	118	High
14:00	95	Normal
16:00	54	Low

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Normal heart rate is 60 to 100 beats per minute. The readings at 12:00 and 16:00 are outside this range, so an alert is sent.

> 💡 Think of telemonitoring like a smoke alarm for the body: it watches all the time and rings only when something is wrong.

3. Computer-controlled medical equipment

Equipment	What it does
CAT (CT) scanner	Uses X-rays from many angles. A computer joins them into slice pictures of the body.
MRI scanner	Uses a strong magnet and radio waves (no X-rays). Very clear pictures of the brain, muscles and joints.
ECG machine	Records the electrical signals of the heart.
Patient monitor in ICU	Shows heart rate, blood pressure and oxygen all the time.
Infusion pump	Gives the exact amount of medicine into a vein.

4. Electronic medical records

A **medical record** keeps everything about a patient's health. When it is stored on a computer it is an **electronic medical record (EMR)**. Any doctor in the hospital can see it quickly, and it is not lost like paper.

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An electronic medical record holds the clinical history, medication and test reports.

Clinical history
Past illnesses, operations and visits.

Medication
Medicines given, doses and allergies.

Test reports
Blood tests, X-rays and scan results.

In Sri Lanka many government hospitals use a **Hospital Health Information Management System (HHIMS)** to keep patient records, and people can book doctor channelling online.

> NEW 2026 2026: **AI** helps doctors read X-rays and scans faster, **smart watches** measure heart rate and oxygen at home, and **online channelling** apps are common. Health data is very private, so the **Personal Data Protection Act (PDPA) No. 9 of 2022** says it must be kept safe.

Key Words

Telemedicine – Giving medical care from a distance using ICT.

Telemonitoring – Checking a patient's body readings from a distance with sensors.

Sensor – A device that measures something such as heart rate or temperature.

Alert – A warning given when a reading is outside the safe range.

CAT scanner – A machine that joins many X-ray pictures into slice images of the body.

MRI – A scanner that uses a strong magnet and radio waves to make clear body pictures.

ECG – A machine that records the electrical signals of the heart.

Medical record – All the details of a patient's health and treatment.

EMR – A medical record kept on a computer.

Clinical history – A list of past illnesses, operations and hospital visits.

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Test report – The result of a blood test, X-ray or scan.

E-prescription – A list of medicines sent electronically by a doctor.

Sample Q&A

1. What is telemedicine?

> **Answer:** Giving medical care from a distance using ICT, such as a video call between a patient and a doctor.

2. Give two advantages of telemedicine.

> **Answer:** Village patients can see a specialist; it saves travel time and money.

3. How does telemonitoring warn a nurse?

> **Answer:** Sensors send readings to a computer. If a reading is outside the safe range the computer gives an alert.

4. Give one difference between a CAT scanner and an MRI.

> **Answer:** A CAT scanner uses X-rays; an MRI uses a magnet and radio waves.

5. Name three things in a medical record.

> **Answer:** Clinical history, medication and test reports.

6. Why must medical records be protected?

> **Answer:** They are very private personal data. The PDPA No. 9 of 2022 says personal data must be kept safe.

MCQ

1. A doctor in Colombo treats a patient in Jaffna by video call. This is

A. telemedicine
B. telemonitoring
C. robotics
D. e-business

2. Sensors send a patient's heart rate to the nurses' room all day. This is

A. CAD
B. e-learning
C. telemonitoring
D. plagiarism

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3. Normal heart rate is 60–100. Which reading gives an alert?

A. 88
B. 72
C. 118
D. 95

4. Which scanner uses a strong magnet and no X-rays?

A. MRI
B. X-ray machine
C. barcode reader
D. CAT scanner

5. A CAT scanner makes pictures by

A. taking a normal photo
B. joining many X-ray images with a computer
C. reading a barcode
D. using sound only

6. Which is NOT part of a medical record?

A. medication
B. test reports
C. clinical history
D. the doctor’s salary

7. One advantage of electronic medical records is that they

A. can be shared with anyone
B. are always on paper
C. can be found quickly by any doctor
D. never need a password

8. Which Sri Lankan law protects patients’ personal data?

A. Traffic Act
B. PDPA No. 9 of 2022
C. No law
D. Copyright only

9. Which term means: “Giving medical care from a distance using ICT”?

A. Telemedicine
B. MRI
C. EMR
D. Alert

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10. Which term means: “Checking a patient’s body readings from a distance with sensors”?

A. Clinical history
B. CAT scanner
C. Telemonitoring
D. ECG

11. Which term means: “A device that measures something such as heart rate or temperature”?

A. Medical record
B. Test report
C. MRI
D. Sensor

12. Which term means: “A warning given when a reading is outside the safe range”?

A. Alert
B. EMR
C. E-prescription
D. ECG

13. Which term means: “A machine that joins many X-ray pictures into slice images of the body”?

A. Clinical history
B. CAT scanner
C. Medical record
D. Telemedicine

14. Which term means: “A scanner that uses a strong magnet and radio waves to make clear body pictures”?

A. EMR
B. Test report
C. Telemonitoring
D. MRI

15. Which term means: “A machine that records the electrical signals of the heart”?

A. Clinical history
B. ECG
C. E-prescription
D. Sensor

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Structured Questions

1. Explain telemedicine and give two advantages. *(3 marks)*

> Medical care from a distance using ICT (1); village patients reach specialists (1); saves travel time and cost (1)

2. The heart rate readings were 08:00 = 72, 10:00 = 88, 12:00 = 118, 14:00 = 95, 16:00 = 54. Which times give an alert and why? *(2 marks)*

> 12:00 and 16:00 (1); the readings are outside the normal range 60–100 (1)

3. Compare a CAT scanner and an MRI scanner. *(3 marks)*

> CAT uses X-rays from many angles (1); MRI uses a magnet and radio waves (1); both use a computer to build the image (1)

4. List three parts of an electronic medical record and give one advantage of keeping it on a computer. *(4 marks)*

> Clinical history; medication; test reports; quick to find and not lost (1 each)

5. Give two ways a hospital should keep patient data safe. *(2 marks)*

> Passwords and user access levels (1); backups and following the PDPA (1)

Summary

- Telemedicine = medical care from a distance by ICT.
- Telemonitoring = sensors watch a patient and give alerts.
- CAT scanner = many X-rays joined by a computer.
- MRI = magnet and radio waves, no X-rays.
- ECG, ICU monitors and infusion pumps are computer controlled.
- Medical records: clinical history, medication, test reports.
- EMRs are quick to find but must be kept private.
- 2026: AI reads scans, smart watches, PDPA 2022.

MCQ answer key – 6.1

1. **A** – Care from a distance by ICT is telemedicine.
2. **C** – Watching readings from a distance is telemonitoring.
3. **C** – 118 is above 100.
4. **A** – MRI = magnet and radio waves.
5. **B** – Computed tomography joins X-ray slices.
6. **D** – Records are about the patient's health.
7. **C** – EMRs are fast to find but must stay private.

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8. **B** – The Personal Data Protection Act 2022.
9. **A** – Telemedicine – Giving medical care from a distance using ICT.
10. **C** – Telemonitoring – Checking a patient's body readings from a distance with sensors.
11. **D** – Sensor – A device that measures something such as heart rate or temperature.
12. **A** – Alert – A warning given when a reading is outside the safe range.
13. **B** – CAT scanner – A machine that joins many X-ray pictures into slice images of the body.
14. **D** – MRI – A scanner that uses a strong magnet and radio waves to make clear body pictures.
15. **B** – ECG – A machine that records the electrical signals of the heart.

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6.2 ICT in Education: e-Learning, LMS and School Management

Syllabus 15.2. ICT changes how we learn and how schools are run. You can learn from anywhere with **e-learning**, use **interactive** lessons, study on the web, and use a **Learning Management System (LMS)**. The school office uses a **Management Information System (MIS)** to keep student and staff data.

1. e-Learning

e-Learning means learning with electronic devices such as computers, tablets and phones. You can learn at any time and in any place, and you can go at your own speed.

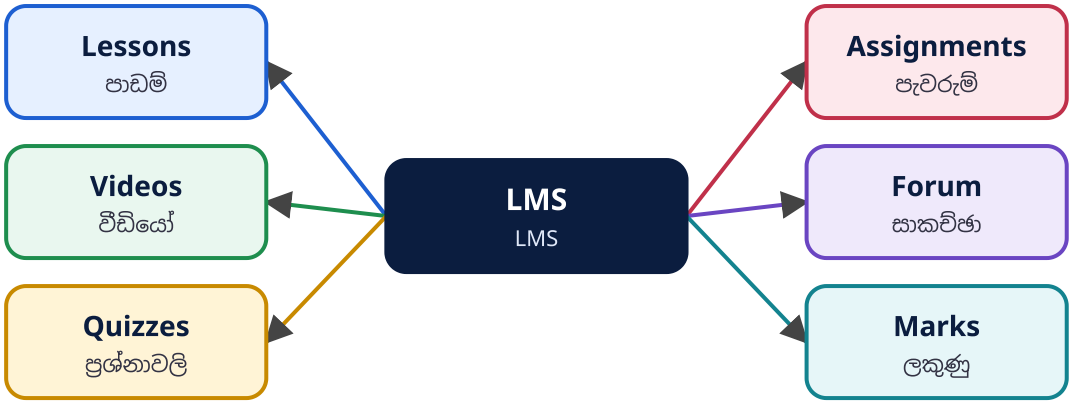
Type	Meaning	Example
Interactive material	You click, drag or answer and the lesson responds.	Quiz with instant marks, simulation, game
Web-based learning	Lessons opened in a web browser over the Internet.	schoolict.net notes, e-thaksalawa
Online class	A live lesson by video call.	Zoom or Google Meet class
Video lessons	Recorded lessons you can pause and replay.	YouTube lessons, Nenasa TV

💡 An e-book is like a normal book. An interactive lesson is like a teacher who answers back.

2. Learning Management System (LMS)

An **LMS** is a website where teachers put lessons and students learn, do quizzes, hand in work and see marks. Examples: **Moodle**, **Google Classroom**, and Sri Lanka's **e-thaksalawa**.

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An LMS keeps lessons, videos, quizzes, assignments, a forum and marks in one place.

- Teachers can see who has finished the work.
- Quizzes are marked automatically.
- Students can ask questions in the forum.

3. School Management Information System (MIS)

A **school MIS** stores data about students, teachers, attendance, marks, timetables and fees. It turns this data into **reports** that help the principal make **decisions**. Sri Lanka uses **NEMIS** (National Education Management Information System) to collect school data.



A school MIS turns data into reports that help decisions.

Data entered	Report made
Daily attendance	Students absent for many days
Term test marks	Class averages and rank lists
Teacher subjects	Timetable

4. Good and bad points

Advantages
Learn anytime, anywhere; many free lessons; instant feedback.

Problems
Needs devices and Internet; less face-to-face talk; easy to get distracted.

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NEW 2026 2026: **AI tutors** and chatbots can explain a lesson again in simple words. Use them to learn, not to copy answers – your teacher can tell. Always check AI answers with your notes, because AI can make mistakes.

Key Words

e-Learning – Learning with electronic devices at any time and place.

Interactive material – Lesson content that responds when you click or answer.

Web-based learning – Learning from lessons opened in a web browser.

LMS – A website for lessons, quizzes, assignments and marks.

Online class – A live lesson given by video call.

Forum – A place in an LMS to ask and answer questions.

MIS – A system that turns stored data into reports for managers.

NEMIS – Sri Lanka's national system for school data.

Report – Organised information made from data.

e-thaksalawa – The free Sri Lankan e-learning website of the Ministry of Education.

Instant feedback – Being told at once if your answer is right.

AI tutor – A computer program that explains lessons and answers questions.

Sample Q&A

1. What is e-learning?

Answer: Learning with electronic devices such as computers and phones, at any time and place.

2. What makes learning material interactive?

Answer: It responds to the learner, for example a quiz that shows the right answer at once.

3. Give three things a student can do in an LMS.

Answer: Read lessons, do quizzes and hand in assignments.

4. Name two LMS examples.

Answer: Moodle and Google Classroom (also e-thaksalawa).

5. How does a school MIS help the principal?

Answer: It makes reports such as attendance and marks that help the principal make decisions.

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6. Give one problem with e-learning.

> **Answer:** It needs a device and Internet, which some students do not have.

MCQ

1. A quiz that shows your marks as soon as you answer is an example of

A. a printed book
B. interactive material
C. data theft
D. a school MIS

2. Which is an LMS?

A. Microsoft Paint
B. Audacity
C. AutoCAD
D. Moodle

3. Sri Lanka’s free Ministry of Education e-learning site is

A. e-thaksalawa
B. HHIMS
C. Govi Mithuru
D. Daraz

4. A school MIS is mainly used to

A. scan the body
B. make reports from school data
C. play games
D. design buildings

5. Which is an advantage of e-learning?

A. learn at your own speed
B. teachers are not needed at all
C. no reading is needed
D. no device is needed

6. A live lesson by video call is

A. an e-book
B. a backup
C. an online class
D. a CAD drawing

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7. Which report would a school MIS make from attendance data?

A. students absent for many days
B. the weather forecast
C. a CAT scan
D. share prices

8. The best way to use an AI tutor is to

A. believe every answer
B. copy its answers as your homework
C. share your password with it
D. ask it to explain and then check with your notes

9. Which term means: “Learning with electronic devices at any time and place”?

A. Forum
B. e-Learning
C. Report
D. LMS

10. Which term means: “Lesson content that responds when you click or answer”?

A. Interactive material
B. Online class
C. e-thaksalawa
D. MIS

11. Which term means: “Learning from lessons opened in a web browser”?

A. Forum
B. NEMIS
C. Web-based learning
D. Instant feedback

12. Which term means: “A website for lessons, quizzes, assignments and marks”?

A. AI tutor
B. Report
C. LMS
D. MIS

13. Which term means: “A live lesson given by video call”?

A. e-thaksalawa
B. Online class
C. NEMIS
D. e-Learning

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14. Which term means: "A place in an LMS to ask and answer questions"?

A. Interactive material
B. Instant feedback
C. Report
D. Forum

15. Which term means: "A system that turns stored data into reports for managers"?

A. e-thaksalawa
B. Web-based learning
C. MIS
D. AI tutor

Structured Questions

1. Define e-learning and give two advantages. *(3 marks)*

> Learning with electronic devices (1); learn anytime and anywhere (1); instant feedback or own speed (1)

2. What is an LMS? Give two features. *(3 marks)*

> A website to manage lessons and learning (1); quizzes marked automatically (1); assignments and marks (1)

3. Give one difference between web-based learning and interactive material. *(2 marks)*

> Web-based learning is any lesson opened in a browser (1); interactive material responds to the learner (1)

4. Name three kinds of data stored in a school MIS and one report it can make. *(4 marks)*

> Attendance; marks; timetables or fees; e.g. class average report (1 each)

5. Give two problems of e-learning. *(2 marks)*

> Needs devices and Internet (1); less face-to-face contact or distraction (1)

Summary

- e-Learning = learning with electronic devices.
- Interactive material responds to the learner.
- Web-based learning uses a web browser.
- LMS: lessons, quizzes, assignments, forum, marks.
- Examples: Moodle, Google Classroom, e-thaksalawa.
- School MIS turns data into reports for decisions.

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- e-Learning needs devices and Internet.
- 2026: use AI tutors to learn, not to copy.

MCQ answer key – 6.2

1. **B** – It responds to you.
2. **D** – Moodle manages courses.
3. **A** – e-thaksalawa has lessons for all grades.
4. **B** – MIS = data into information for managers.
5. **A** – You can pause and repeat.
6. **C** – Online class = live by video.
7. **A** – Attendance data gives absence reports.
8. **D** – AI can be wrong; use it to learn.
9. **B** – e-Learning – Learning with electronic devices at any time and place.
10. **A** – Interactive material – Lesson content that responds when you click or answer.
11. **C** – Web-based learning – Learning from lessons opened in a web browser.
12. **C** – LMS – A website for lessons, quizzes, assignments and marks.
13. **B** – Online class – A live lesson given by video call.
14. **D** – Forum – A place in an LMS to ask and answer questions.
15. **C** – MIS – A system that turns stored data into reports for managers.

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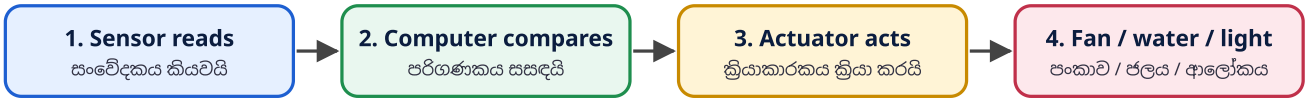
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6.3 ICT in Agriculture: Greenhouses, Virtual Markets and Smart Farming

Syllabus 15.3. Farmers use ICT to grow more food with less work and less waste. Computers control **greenhouses**, farmers **search for information** and sell in **virtual markets**, and ICT helps with **pest control**, **fertilizer** and **weather prediction**. This raises **productivity**.

1. Computer-controlled greenhouses

A **greenhouse** is a glass or plastic house for plants. **Sensors** measure temperature, soil moisture, light and humidity. A **computer** compares each reading with a set value. Then it switches **actuators** such as fans, water sprinklers and lights ON or OFF. No person needs to watch all night.



Sensor → computer → actuator: the control loop in a greenhouse.

Rules used here: if temperature > 30 °C, switch the fan ON. If soil moisture < 40 %, switch the water ON.

Time	Temperature °C	Soil moisture %	Computer action
06:00	24	55	No action
10:00	29	38	Water ON
13:00	34	45	Fan ON
16:00	32	30	Fan ON + Water ON

💡 Think of the computer like a careful gardener who never sleeps: it checks, decides and acts again and again.

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2. Other ways ICT helps farmers



ICT gives farmers weather, pest and fertilizer information and a place to sell.

Use	How ICT helps
Information searching	Find the best seeds, prices and methods on the Internet or a phone app. Sri Lanka: 1920 Govi Sahana Sarana call centre.
Virtual market	Sell crops online straight to buyers, without many middle men, so the farmer earns more.
Pest detection and control	Take a photo of a sick leaf; an app names the pest and the right treatment. Drones spray only where needed.
Fertilizer optimisation	Soil sensors show what the soil needs, so the farmer uses the right amount – less waste and less pollution.
Weather prediction	Computers process satellite and weather station data. Farmers plan planting and harvesting. Sri Lanka: Department of Meteorology.

3. Productivity

Productivity means how much you produce for the work, land and money you use. ICT raises productivity: more harvest from the same land, less water and fertilizer wasted, and fewer crops lost to pests and bad weather.

> NEW 2026 2026: **smart farming** uses Internet of Things (IoT) sensors, **drones** with cameras, and **AI apps** that spot plant diseases from a phone photo. Weather warnings come as SMS so farmers can protect crops before heavy rain.

Key Words

Greenhouse – A glass or plastic house where plants grow in a controlled climate.

Sensor – A device that measures temperature, moisture or light.

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Actuator – A device such as a fan or pump that the computer switches on or off.

Control loop – Measure, compare and act, again and again.

Set value – The target reading the computer compares with.

Virtual market – An online place to buy and sell crops.

Information searching – Finding farming facts on the Internet or by phone.

Pest detection – Finding insects or diseases on crops, often with an app or camera.

Fertilizer optimisation – Using exactly the fertilizer the soil needs.

Weather prediction – Using computers and data to tell future weather.

Productivity – How much is produced for the land, work and money used.

Drone – A small flying machine with a camera or sprayer.

Sample Q&A

1. How does a computer control a greenhouse?

> **Answer:** Sensors measure conditions, the computer compares them with set values and switches actuators such as fans and water ON or OFF.

2. At 16:00 the temperature is 32 °C and moisture 30 %. What does the computer do?

> **Answer:** Fan ON + Water ON – both rules are broken.

3. What is a virtual market?

> **Answer:** An online place where farmers sell crops directly to buyers.

4. How can ICT help with pests?

> **Answer:** An app can name a pest from a photo; drones can spray only where needed.

5. Why is weather prediction useful to farmers?

> **Answer:** They can plan planting and harvesting and protect crops before storms.

6. What is productivity?

> **Answer:** How much is produced for the land, work and money used.

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MCQ

1. In a greenhouse, the device that measures soil moisture is a

A. sensor
B. router
C. actuator
D. printer

2. A fan switched ON by the computer is an

A. LMS
B. input device
C. actuator
D. sensor

3. Temperature 34 °C, moisture 45 %. Rules: fan if > 30, water if < 40. Action?

A. Fan ON
B. Fan ON + Water ON
C. Water ON
D. No action

4. Selling vegetables on a website directly to buyers uses a

A. CAT scanner
B. virtual market
C. firewall
D. greenhouse

5. Soil sensors help farmers to

A. pay taxes
B. watch movies
C. use the right amount of fertilizer
D. print bills

6. Which Sri Lankan service gives farmers advice by phone?

A. e-thaksalawa
B. NEMIS
C. 1990 Suwa Seriya
D. 1920 Govi Sahana Sarana

7. ICT raising the harvest from the same land means higher

A. piracy
B. eye strain
C. productivity
D. digital divide

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8. Weather prediction mainly uses

A. CAD drawings
B. music software
C. barcode readers
D. satellite data processed by computers

9. Which term means: “A glass or plastic house where plants grow in a controlled climate”?

A. Fertilizer optimisation
B. Greenhouse
C. Control loop
D. Virtual market

10. Which term means: “A device that measures temperature, moisture or light”?

A. Sensor
B. Weather prediction
C. Information searching
D. Set value

11. Which term means: “A device such as a fan or pump that the computer switches on or off”?

A. Pest detection
B. Actuator
C. Virtual market
D. Productivity

12. Which term means: “Measure, compare and act, again and again”?

A. Drone
B. Information searching
C. Control loop
D. Fertilizer optimisation

13. Which term means: “The target reading the computer compares with”?

A. Set value
B. Greenhouse
C. Weather prediction
D. Pest detection

14. Which term means: “An online place to buy and sell crops”?

A. Fertilizer optimisation
B. Sensor
C. Productivity
D. Virtual market

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15. Which term means: “Finding farming facts on the Internet or by phone”?

A. Actuator
B. Information searching
C. Drone
D. Weather prediction

Structured Questions

1. Explain how a computer-controlled greenhouse works. Name one sensor and one actuator. *(4 marks)*

> Sensor measures and computer compares with set value (1); computer switches actuator (1); sensor e.g. temperature sensor (1); actuator e.g. fan or pump (1)

2. Using the rules (fan if > 30 °C, water if < 40 %), give the action at 10:00 (29 °C, 38 %) and at 06:00 (24 °C, 55 %). *(2 marks)*

> 10:00: Water ON (1); 06:00: No action (1)

3. Give two benefits of a virtual market for farmers. *(2 marks)*

> Sell directly without middle men so earn more (1); reach more buyers (1)

4. Explain how ICT helps with pest control and fertilizer. *(3 marks)*

> App identifies pest from a photo (1); drones spray only where needed (1); soil sensors give the right fertilizer amount (1)

5. What is productivity? Give two ways ICT raises it. *(3 marks)*

> Output for the land, work and money used (1); less waste of water and fertilizer (1); fewer crops lost through weather prediction (1)

Summary

- Greenhouse: sensor → computer → actuator, again and again.
- Sensors measure; actuators act.
- Farmers search information online or by phone (1920).
- Virtual market = sell crops online, fewer middle men.
- Apps and drones help detect and control pests.
- Soil sensors give the right fertilizer amount.
- Weather prediction helps plan planting and harvest.
- ICT raises productivity; 2026 smart farming uses IoT and AI.

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MCQ answer key – 6.3

1. **A** – Sensors measure.
2. **C** – Actuators do the action.
3. **A** – Only the temperature rule is broken.
4. **B** – Online market = virtual market.
5. **C** – That is fertilizer optimisation.
6. **D** – 1920 is the farmer call centre.
7. **C** – More output for the same input.
8. **D** – Computers model the weather.
9. **B** – Greenhouse – A glass or plastic house where plants grow in a controlled climate.
10. **A** – Sensor – A device that measures temperature, moisture or light.
11. **B** – Actuator – A device such as a fan or pump that the computer switches on or off.
12. **C** – Control loop – Measure, compare and act, again and again.
13. **A** – Set value – The target reading the computer compares with.
14. **D** – Virtual market – An online place to buy and sell crops.
15. **B** – Information searching – Finding farming facts on the Internet or by phone.

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G.C.E. O/L Grade 11 ICT · Lesson 6

6.4 ICT in Industries: CAD, CAM, Computerised Machines and Robotics

Syllabus 15.4. Factories and builders use ICT to design and make things quickly and exactly. Architects draw buildings with **CAD**, machines cut and shape parts with **CAM**, and **robots** do heavy, dangerous or repeated work.

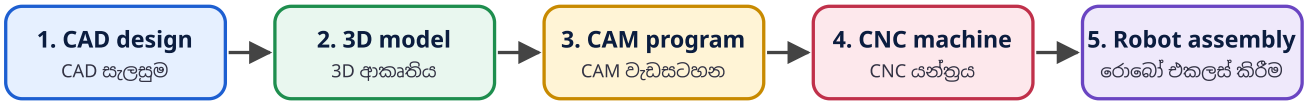
1. CAD – Computer Aided Design

CAD software helps you draw exact plans and **3D models** on a computer. **Architects** use CAD to design houses and buildings. You can turn the model, change sizes in seconds, and walk through the building before it is built. Examples: AutoCAD, SketchUp, Revit.

- Exact measurements, fewer mistakes.
- Easy to change and copy.
- 3D view shows the customer what it will look like.
- Can calculate materials and cost.

2. CAM – Computer Aided Manufacturing

CAM uses the CAD design to control **computerised machines**. A **CNC machine** (Computer Numerical Control) cuts metal, wood or plastic exactly as the program says. **3D printers** build objects layer by layer. Garment factories in Sri Lanka use computer-controlled cutting machines.



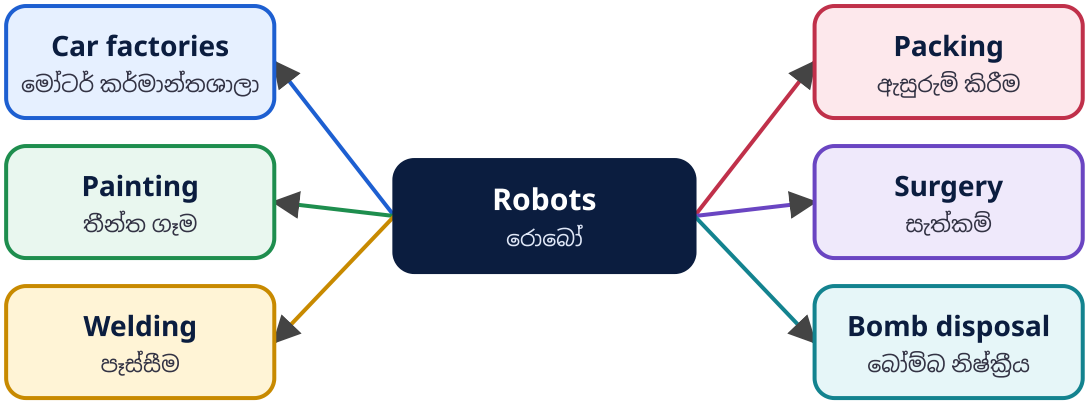
From CAD design to a finished product made by machines and robots.

> 💡 CAD is the drawing. CAM is the making. Remember: D for Design, M for Manufacturing.

3. Robotics

A **robot** is a machine controlled by a computer program that can move and do work by itself. Robots have **sensors** to sense, a **controller** (computer) to decide, and **actuators** (motors, arms, grippers) to act.

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Robots work in factories, hospitals and dangerous places.

Advantages of robots	Disadvantages of robots
Work 24 hours without tiring	High cost to buy and repair
Same high quality every time	Some workers may lose jobs
Safe in dangerous places	Cannot think like people in new situations

NEW 2026 2026: **collaborative robots (cobots)** work safely next to people, **AI** checks products with cameras for faults, and **digital twins** are computer copies of a whole factory used to test changes first. Many factories now use **3D printing** for spare parts.

Key Words

CAD – Using a computer to draw exact designs and 3D models.

CAM – Using a computer to control machines that make products.

Architect – A person who designs buildings.

3D model – A computer drawing with length, width and height that can be turned.

CNC machine – A machine that cuts material exactly by following a program.

3D printer – A machine that builds an object layer by layer.

Computerised machine – Any machine whose work is controlled by a computer.

Robot – A program-controlled machine that moves and works by itself.

Robotics – The study of designing, building and using robots.

Gripper – The hand part of a robot arm that holds things.

Cobot – A robot made to work safely beside people.

Digital twin – A computer copy of a real machine or factory.

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Sample Q&A

1. What is CAD?

> **Answer:** Computer Aided Design: using a computer to draw exact plans and 3D models.

2. How do architects use CAD?

> **Answer:** To draw building plans, make 3D models, change designs quickly and show customers a walk-through.

3. What is CAM?

> **Answer:** Computer Aided Manufacturing: computers control machines that make products from CAD designs.

4. What does a CNC machine do?

> **Answer:** It cuts or shapes metal, wood or plastic exactly as its program says.

5. Name the three main parts of a robot.

> **Answer:** Sensors, a controller (computer) and actuators such as motors and grippers.

6. Give one advantage and one disadvantage of robots.

> **Answer:** Advantage: work 24 hours with the same quality. Disadvantage: high cost or job loss.

MCQ

1. An architect draws a 3D house plan on a computer. This uses

A. CAD
B. LMS
C. MIS
D. CAM

2. A machine cuts metal parts by following a program from the design. This is

A. telemedicine
B. CAM
C. e-learning
D. CAD

3. CNC stands for

A. Central Network Computer
B. Control Number Card
C. Computer Numerical Control
D. Computer New Code

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4. Which builds an object layer by layer?

A. plotter
B. scanner
C. 3D printer
D. laser printer

5. Which job is BEST for a robot?

A. comforting a sad child
B. judging a court case
C. writing a new poem
D. welding car bodies all day

6. The part of a robot that senses the world is the

A. motor
B. gripper
C. sensor
D. battery

7. A disadvantage of robots in factories is

A. they get tired quickly
B. they cannot work at night
C. quality changes every hour
D. some workers may lose jobs

8. A robot built to work safely beside people is a

A. cobot
B. drone
C. chatbot
D. router

9. Which term means: “Using a computer to draw exact designs and 3D models”?

A. 3D printer
B. CAD
C. 3D model
D. Robotics

10. Which term means: “Using a computer to control machines that make products”?

A. CAM
B. CNC machine
C. Gripper
D. Computerised machine

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11. Which term means: “A person who designs buildings”?

A. 3D printer
B. Robot
C. Cobot
D. Architect

12. Which term means: “A computer drawing with length, width and height that can be turned”?

A. Digital twin
B. Computerised machine
C. 3D model
D. Robotics

13. Which term means: “A machine that cuts material exactly by following a program”?

A. CNC machine
B. Gripper
C. Robot
D. CAD

14. Which term means: “A machine that builds an object layer by layer”?

A. CAM
B. 3D printer
C. Cobot
D. Robotics

15. Which term means: “Any machine whose work is controlled by a computer”?

A. Architect
B. Computerised machine
C. Gripper
D. Digital twin

Structured Questions

1. Explain CAD and give two advantages for an architect. *(3 marks)*

> Using a computer to draw designs and 3D models (1); exact measurements (1); easy to change or show a 3D view (1)

2. Give the difference between CAD and CAM. *(2 marks)*

> CAD is for designing (1); CAM is for making with computer-controlled machines (1)

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3. Name two computerised machines used in manufacturing and say what each does. *(4 marks)*

> CNC machine; cuts material exactly; 3D printer; builds objects layer by layer (1 each)

4. Name the three parts of a robot and give one place where robots are used. *(4 marks)*

> Sensors; controller; actuators; e.g. car factory or surgery (1 each)

5. Give two advantages and one disadvantage of using robots. *(3 marks)*

> Work 24 hours (1); same quality or safe in danger (1); high cost or job loss (1)

Summary

- CAD = computer aided design (drawing).
- Architects use CAD for plans and 3D models.
- CAM = computer aided manufacturing (making).
- CNC machines cut exactly; 3D printers build in layers.
- Robot = sensors + controller + actuators.
- Robots suit heavy, dangerous, repeated work.
- Robots cost a lot and can replace some jobs.
- 2026: cobots, AI quality checks, digital twins.

MCQ answer key – 6.4

1. **A** – Design = CAD.
2. **B** – Making by computer = CAM.
3. **C** – CNC machines follow numbers in a program.
4. **C** – 3D printers add layers.
5. **D** – Robots suit repeated, dangerous work.
6. **C** – Sensors give input.
7. **D** – Robots replace some manual jobs.
8. **A** – Cobot = collaborative robot.
9. **B** – CAD – Using a computer to draw exact designs and 3D models.
10. **A** – CAM – Using a computer to control machines that make products.
11. **D** – Architect – A person who designs buildings.
12. **C** – 3D model – A computer drawing with length, width and height that can be turned.
13. **A** – CNC machine – A machine that cuts material exactly by following a program.
14. **B** – 3D printer – A machine that builds an object layer by layer.
15. **B** – Computerised machine – Any machine whose work is controlled by a computer.

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6.5 ICT in Business: e-Business, Online Shopping, Share Market and IT BPO

Syllabus 15.5. Businesses use ICT to sell, buy, advertise and work with customers all over the world. You will learn about **e-business**, **online shopping**, the **online share market**, **safety measures** when buying online, **online advertising** and **IT BPO** jobs.

1. e-Business and e-commerce

e-Business means running a business with ICT: selling, ordering stock, paying staff and talking to customers online. **e-Commerce** is the buying and selling part of e-business.

Type	Who sells to whom	Example
B2C	Business to customer	An online shop selling phones
B2B	Business to business	A factory ordering cloth online
C2C	Customer to customer	Selling an old bicycle on ikman.lk

2. Online shopping



Online shopping: search, add to cart, pay, delivery and review.

For buyers
Shop 24 hours from home; compare prices easily.

For sellers
Reach the whole country; no need for a big shop.

Problems
Cannot touch the item; fake sellers; delivery delays.

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3. Safety measures when buying online



Simple rules for safe online shopping.

- Check for **https** and the padlock before you pay.
- **Never** tell anyone your OTP or card PIN – banks never ask for it.
- Use cash on delivery or LankaQR with trusted shops.
- Do not click links in strange SMS or e-mail offers (phishing).

4. Online share market

A **share** is a small part of a company. People buy and sell shares on the **Colombo Stock Exchange (CSE)**. With online trading you can buy and sell shares from a phone or computer and see prices change live.

Step	Working	Rs.
Buy 100 shares at Rs. 50	100 × 50	5,000
Sell them at Rs. 56	100 × 56	5,600
Gain (before fees)	5,600 − 5,000	600

> 💡 Share prices can go down as well as up. Never invest money you cannot lose.

5. Online advertising

Businesses advertise on websites, search engines, YouTube and social media. Online adverts can be shown to the right people (by age, place or interest), they cost less than TV, and the business can count clicks.

6. IT BPO

BPO (Business Process Outsourcing) means a company pays another company to do some of its work, such as accounts, customer call centres or software testing. Sri Lanka has many **IT BPO** companies that do this work for foreign companies – this brings jobs and foreign money.

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NEW 2026 2026: **digital payments** such as LankaQR and mobile wallets are common, **AI chatbots** answer customers, and online **scams** are growing. Report frauds to Sri Lanka CERT or the police, and check sellers before paying.

Key Words

e-Business – Running all parts of a business with ICT.

e-Commerce – Buying and selling goods or services online.

Online shopping – Choosing and paying for items on a website or app.

Shopping cart – The list of items you plan to buy online.

OTP – A one-time code sent to your phone to confirm a payment.

Phishing – A fake message that tries to steal your password or card details.

Share – A small part of a company that people can buy.

CSE – The Colombo Stock Exchange where shares are traded.

Online advertising – Showing adverts on websites, search engines and social media.

BPO – Paying another company to do some of your business work.

Digital payment – Paying with a card, QR code or mobile wallet instead of cash.

B2C – A business selling directly to customers.

Sample Q&A

1. What is the difference between e-business and e-commerce?

Answer: e-Business is running the whole business with ICT; e-commerce is only the buying and selling part.

2. Give two advantages of online shopping for buyers.

Answer: Shop 24 hours from home and compare prices easily.

3. Give three safety measures for online shopping.

Answer: Check https, never share the OTP and buy from trusted sellers.

4. You buy 100 shares at Rs. 50 and sell at Rs. 56. What is the gain?

Answer: 5,600 − 5,000 = Rs. 600 before fees.

5. Why do businesses like online advertising?

Answer: It reaches the right people, costs less than TV and clicks can be counted.

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6. What is IT BPO and how does it help Sri Lanka?

> **Answer:** Doing work such as accounts or call centres for other companies; it brings jobs and foreign money.

MCQ

1. Selling your old phone to another person on ikman.lk is

A. B2C
B. BPO
C. B2B
D. C2C

2. Before paying on a website you should check for

A. bright colours
B. a long web address
C. https and a padlock
D. many pop-up ads

3. A caller says he is from your bank and asks for your OTP. You should

A. refuse and tell your parents
B. give it quickly
C. post it online
D. send it by SMS

4. Buy 100 shares at Rs. 50, sell at Rs. 56. Gain before fees?

A. Rs. 5,000
B. Rs. 600
C. Rs. 5,600
D. Rs. 6

5. Sri Lanka’s stock exchange is the

A. CSE
B. TRCSL
C. CEA
D. ICTA

6. A fake e-mail asking you to type your bank password is

A. CAD
B. e-learning
C. phishing
D. BPO

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7. A Sri Lankan company answers phone calls for a UK bank. This is

A. C2C
B. CAM
C. IT BPO
D. telemonitoring

8. One advantage of online advertising is that it

A. needs no Internet
B. is always free
C. can never be skipped
D. can target people by age or interest

9. Which term means: “Running all parts of a business with ICT”?

A. Phishing
B. Shopping cart
C. e-Business
D. Online advertising

10. Which term means: “Buying and selling goods or services online”?

A. e-Commerce
B. BPO
C. Share
D. OTP

11. Which term means: “Choosing and paying for items on a website or app”?

A. CSE
B. Online shopping
C. Phishing
D. Digital payment

12. Which term means: “The list of items you plan to buy online”?

A. Share
B. Shopping cart
C. Online advertising
D. B2C

13. Which term means: “A one-time code sent to your phone to confirm a payment”?

A. OTP
B. BPO
C. CSE
D. e-Business

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14. Which term means: "A fake message that tries to steal your password or card details"?

A. Online advertising
B. e-Commerce
C. Digital payment
D. Phishing

15. Which term means: "A small part of a company that people can buy"?

A. B2C
B. Share
C. Online shopping
D. BPO

Structured Questions

1. Define e-commerce and give one example each of B2C and C2C. *(3 marks)*

> Buying and selling online (1); B2C e.g. an online phone shop (1); C2C e.g. selling a used bicycle on ikman.lk (1)

2. Give two advantages and one problem of online shopping. *(3 marks)*

> Shop any time (1); compare prices (1); fake sellers or cannot touch items (1)

3. List three safety measures for paying online. *(3 marks)*

> Check https and padlock (1); never share OTP or PIN (1); avoid links in strange messages (1)

4. Nimal buys 100 shares at Rs. 50 each and sells them at Rs. 56 each. Calculate the cost, the selling value and the gain. *(3 marks)*

> Cost 100 × 50 = Rs. 5,000 (1); value 100 × 56 = Rs. 5,600 (1); gain Rs. 600 (1)

5. What is IT BPO? Give two benefits to Sri Lanka. *(3 marks)*

> Doing business work for other companies, often abroad (1); jobs for young people (1); foreign money (1)

Summary

- e-Business = whole business with ICT; e-commerce = buying and selling.
- B2C, B2B and C2C are kinds of e-commerce.
- Online shopping: search, cart, pay, delivery, review.
- Safety: https, never share OTP, trusted sellers.
- Shares are traded online on the CSE.
- Gain = selling value − cost.

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- Online adverts target the right people and count clicks.
- IT BPO brings jobs and foreign money to Sri Lanka.

MCQ answer key – 6.5

1. **D** – Customer to customer.
2. **C** – https means the data is encrypted.
3. **A** – Banks never ask for an OTP.
4. **B** – 5,600 − 5,000.
5. **A** – Colombo Stock Exchange.
6. **C** – Phishing steals details.
7. **C** – Outsourced business work.
8. **D** – Targeted adverts reach the right people.
9. **C** – e-Business – Running all parts of a business with ICT.
10. **A** – e-Commerce – Buying and selling goods or services online.
11. **B** – Online shopping – Choosing and paying for items on a website or app.
12. **B** – Shopping cart – The list of items you plan to buy online.
13. **A** – OTP – A one-time code sent to your phone to confirm a payment.
14. **D** – Phishing – A fake message that tries to steal your password or card details.
15. **B** – Share – A small part of a company that people can buy.

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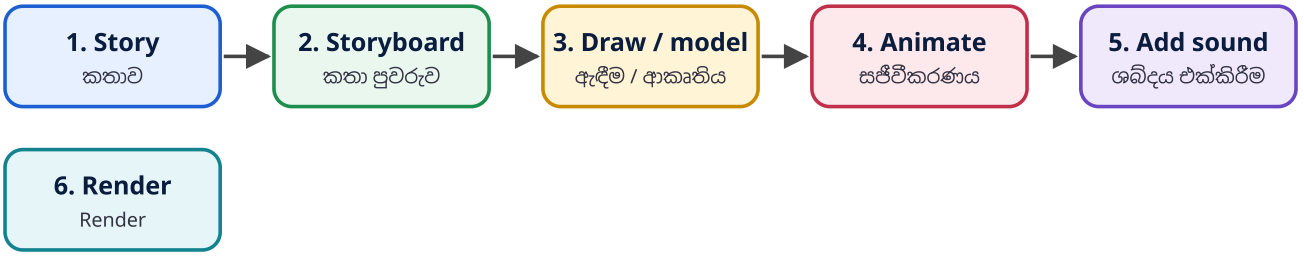
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6.6 ICT in Entertainment: Movies, Cartoons, Sound, Games and Simulations

Syllabus 15.6. Most of the films, cartoons, songs and games we enjoy are made with computers. ICT is used for **movies and cartoons**, **digital sound editing**, **games** and **simulations**.

1. Movies and cartoons

Computers help to film, edit and add **special effects (visual effects)** to movies. Actors can stand in front of a **green screen**, and the computer puts a new background behind them. **Animation** software makes drawings or 3D models move to create **cartoons**.



Steps to make an animated cartoon.

Task	Software example
Video editing	DaVinci Resolve, OpenShot
2D and 3D animation	Blender, Synfig
Sound editing	Audacity
Game making	Unity, Scratch

2. Digital sound editing

Sound is recorded as digital data. With sound editing software you can **cut**, **join**, change the **volume**, remove **noise**, add **effects** such as echo, and **mix** many tracks (voice, music, drums) into one song.

> 💡 Think of tracks like layers of a cake: voice on top, music in the middle, drums at the bottom – the mixer joins them into one.

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3. Games

Computer and mobile **games** are programs that use graphics, sound and user input. Some games are just for fun; **educational games** help you learn. Online games let people play together over the Internet.

- Good: fun, quick thinking, teamwork, learning.
- Bad: addiction, less sleep, eye strain, spending money in games.
- Set a time limit and take breaks.

4. Simulations

A **simulation** is a computer model of a real thing or situation. People can practise safely, cheaply and many times. Examples: a **flight simulator** for pilots, a **driving simulator**, a **virtual science lab**, and simulations of floods or traffic.



ICT is used in many kinds of entertainment.

NEW 2026 2026: **streaming** (YouTube, Netflix, Spotify) is the main way to watch and listen, **virtual reality (VR)** headsets make games and simulations feel real, and **AI** can create music, voices and pictures. Using AI to copy a real person's face or voice without permission (**deepfake**) is wrong and can be a crime.

Key Words

Special effects – Computer-made pictures added to a film.

Green screen – A green background that the computer replaces with another scene.

Animation – Making pictures appear to move by showing many frames quickly.

Storyboard – A set of sketches that plan each scene.

Rendering – The computer making the final pictures or video from a model.

Sound editing – Cutting, joining and improving recorded sound.

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Track – One layer of sound, such as voice or drums.

Mixing – Joining many sound tracks into one.

Simulation – A computer model of a real thing used to test or practise.

Flight simulator – A machine where pilots practise flying safely.

Virtual reality – A headset that makes you feel inside a computer world.

Deepfake – A fake video or voice of a real person made by AI.

Sample Q&A

1. How are computers used in movies?

> **Answer:** For editing, special effects and green screen backgrounds.

2. What is animation?

> **Answer:** Showing many pictures (frames) quickly so they seem to move.

3. Name three things you can do with sound editing software.

> **Answer:** Cut and join sound, remove noise and mix tracks.

4. Give one good and one bad effect of games.

> **Answer:** Good: quick thinking or learning. Bad: addiction or eye strain.

5. What is a simulation? Give an example.

> **Answer:** A computer model of a real situation, for example a flight simulator.

6. Why is a deepfake wrong?

> **Answer:** It copies a real person without permission and can trick or harm people.

MCQ

1. Actors stand in front of a green screen so that the computer can

A. measure heart rate
B. record sound
C. print the film
D. put in a new background

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2. Making a cartoon by showing many frames quickly is

A. telemedicine
B. animation
C. CAM
D. phishing

3. Which software is mainly for sound editing?

A. AutoCAD
B. Moodle
C. Audacity
D. Excel

4. Joining voice, music and drum tracks into one song is

A. mixing
B. scanning
C. backing up
D. rendering

5. Pilots practise landing safely using a

A. LMS forum
B. flight simulator
C. CNC machine
D. UPS

6. One main advantage of simulations is that people can

A. never make mistakes
B. earn shares
C. practise safely many times
D. avoid all computers

7. A bad effect of playing games for many hours is

A. eye strain and less sleep
B. more exercise
C. faster Internet
D. better posture

8. An AI video that shows a real person saying things they never said is a

A. storyboard
B. deepfake
C. simulation
D. cobot

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9. Which term means: “Computer-made pictures added to a film”?

A. Special effects
B. Storyboard
C. Sound editing
D. Simulation

10. Which term means: “A green background that the computer replaces with another scene”?

A. Flight simulator
B. Track
C. Green screen
D. Rendering

11. Which term means: “Making pictures appear to move by showing many frames quickly”?

A. Mixing
B. Virtual reality
C. Sound editing
D. Animation

12. Which term means: “A set of sketches that plan each scene”?

A. Deepfake
B. Track
C. Storyboard
D. Simulation

13. Which term means: “The computer making the final pictures or video from a model”?

A. Special effects
B. Rendering
C. Flight simulator
D. Mixing

14. Which term means: “Cutting, joining and improving recorded sound”?

A. Green screen
B. Virtual reality
C. Simulation
D. Sound editing

15. Which term means: “One layer of sound, such as voice or drums”?

A. Track
B. Animation
C. Flight simulator
D. Deepfake

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Structured Questions

1. Explain two ways computers are used to make movies. *(2 marks)*

> Editing scenes together (1); special effects or green screen backgrounds (1)

2. List the steps to make an animated cartoon. *(3 marks)*

> Story and storyboard (1); draw or model and animate (1); add sound and render (1)

3. Give three tasks done in digital sound editing. *(3 marks)*

> Cut and join (1); remove noise or change volume (1); mix tracks or add effects (1)

4. What is a simulation? Give two examples and one advantage. *(4 marks)*

> A computer model of a real situation (1); flight simulator; virtual science lab (1); safe and cheap practice (1)

5. Give two good effects and two bad effects of computer games. *(4 marks)*

> Fun or learning; quick thinking or teamwork; addiction or less sleep; eye strain or wasted money (1 each)

Summary

- Movies use editing, special effects and green screens.
- Animation = many frames shown quickly.
- Cartoon steps: story, storyboard, draw, animate, sound, render.
- Sound editing: cut, join, remove noise, mix tracks.
- Games: fun and learning, but limit your time.
- Simulation = computer model for safe practice.
- Examples: flight simulator, driving simulator, virtual lab.
- 2026: streaming, VR and AI media; deepfakes are wrong.

MCQ answer key – 6.6

1. **D** – Green is replaced by another scene.
2. **B** – Frames + speed = animation.
3. **C** – Audacity edits audio.
4. **A** – Mixing joins tracks.
5. **B** – A simulation of flying.
6. **C** – Mistakes in a simulation hurt no one.
7. **A** – Take breaks and set limits.
8. **B** – Deepfakes are fake and harmful.
9. **A** – Special effects – Computer-made pictures added to a film.

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10. **C** – Green screen – A green background that the computer replaces with another scene.
11. **D** – Animation – Making pictures appear to move by showing many frames quickly.
12. **C** – Storyboard – A set of sketches that plan each scene.
13. **B** – Rendering – The computer making the final pictures or video from a model.
14. **D** – Sound editing – Cutting, joining and improving recorded sound.
15. **A** – Track – One layer of sound, such as voice or drums.

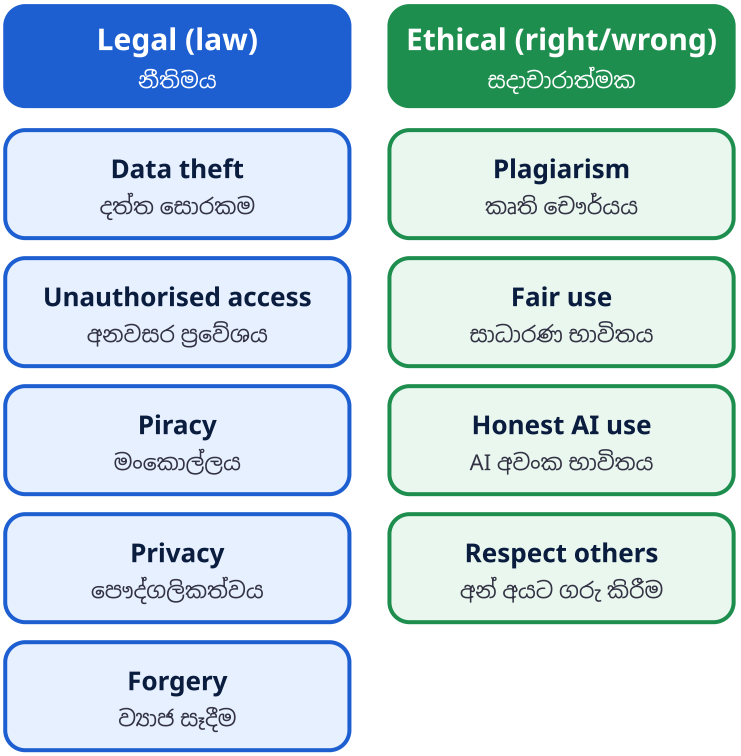
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G.C.E. O/L Grade 11 ICT · Lesson 6

6.7 Legal and Ethical Issues in ICT: Copyright, Privacy and Sri Lankan Laws

Syllabus 15.7. ICT can be used in wrong ways. Some wrong acts break the **law** (legal issues) and some are simply **unfair or dishonest** (ethical issues). You will learn about data theft, unauthorised access, intellectual property, privacy, forgery, Sri Lanka's ICT laws, fair use and plagiarism.

1. Legal issues



Main legal issues in ICT.

Issue	Meaning	Example
Data theft	Stealing or copying data without permission	Copying a customer list to sell it
Unauthorised access	Entering a computer or account without permission (hacking)	Logging in to a friend's account
Privacy	The right to keep personal information private	Posting someone's phone number online
Forgery	Making fake documents or changing real ones with a computer	A fake certificate or edited bill

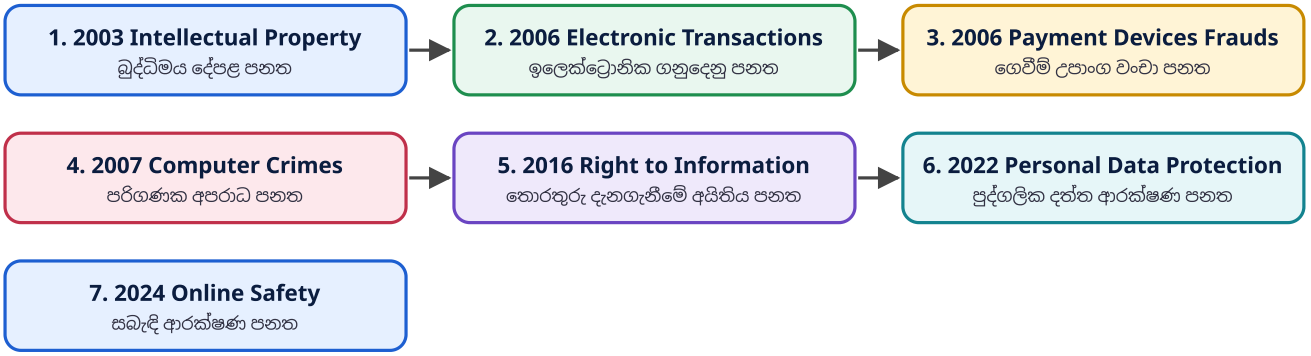
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2. Intellectual property

Intellectual property (IP) is something created by the mind, such as a song, book, software or invention. The law protects it:

- **Copyright** © – only the creator can copy and sell a song, book, film or program.
- **Patent** – protects a new invention so others cannot copy it for some years.
- **Piracy** – illegally copying or sharing software, films or music. It is a crime.

3. ICT laws in Sri Lanka



Sri Lanka's ICT legal framework on a timeline.

Act	Number	What it does
Electronic Transactions Act	No. 19 of 2006	E-documents and e-signatures are legal.
Computer Crimes Act	No. 24 of 2007	Hacking, unauthorised access and data damage are crimes.
Intellectual Property Act	No. 36 of 2003	Protects copyright, patents and trademarks.
Payment Devices Frauds Act	No. 30 of 2006	Card and payment device fraud is a crime.
Right to Information Act	No. 12 of 2016	Citizens can ask for public information.
Personal Data Protection Act	No. 9 of 2022	Organisations must protect personal data.
Online Safety Act	No. 9 of 2024	Deals with harmful online statements.

> 💡 Easy memory trick: 2003 IP, 2006 ETA and payment fraud, 2007 computer crimes, 2016 RTI, 2022 PDPA, 2024 Online Safety.

4. Ethical issues

Fair use means you may use a small part of someone's work for study, news, review or teaching, **if you name the source**. **Plagiarism** means copying someone's words or ideas and saying they are yours. It is dishonest, even if it is not always a crime.

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Fair use
Quote two lines of a poem in your essay and name the poet.

Plagiarism
Copy a whole web page into your project with no name.

Piracy
Download a paid game free from an illegal site.

NEW 2026 2026: under the **PDPA (2022)** organisations must ask before they collect your data and keep it safe. Using **AI** tools to write homework and handing it in as your own is **plagiarism** – say when you used AI and check its facts.

Key Words

Data theft – Stealing or copying data without permission.

Unauthorised access – Entering a computer system without permission.

Hacking – Breaking into a computer or network.

Intellectual property – Work created by the mind, such as songs, books and software.

Copyright – The creator's right to copy and sell their work.

Patent – Protection for a new invention.

Piracy – Illegally copying software, films or music.

Privacy – The right to keep personal information private.

Forgery – Making fake documents with a computer.

Fair use – Using a small part of a work for study and naming the source.

Plagiarism – Presenting someone else's work as your own.

PDPA – Sri Lanka's Personal Data Protection Act No. 9 of 2022.

Sample Q&A

1. What is the difference between a legal issue and an ethical issue?

Answer: A legal issue breaks the law; an ethical issue is unfair or dishonest but may not be a crime.

2. Which Sri Lankan law makes hacking a crime?

Answer: The Computer Crimes Act No. 24 of 2007.

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3. What is the difference between copyright and a patent?

> **Answer:** Copyright protects creative work like songs and software; a patent protects an invention.

4. What is piracy?

> **Answer:** Illegally copying or sharing software, films or music.

5. How can you avoid plagiarism?

> **Answer:** Write in your own words and name every source you use.

6. What does the PDPA of 2022 do?

> **Answer:** It makes organisations protect people’s personal data.

MCQ

1. Logging in to a friend’s e-mail without permission is

A. unauthorised access
B. e-learning
C. fair use
D. a patent

2. Selling copied DVDs of a new film is

A. a backup
B. telemedicine
C. fair use
D. piracy

3. A new kind of solar charger can be protected by a

A. firewall
B. patent
C. copyright
D. password

4. The Computer Crimes Act of Sri Lanka is

A. No. 9 of 2022
B. No. 12 of 2016
C. No. 24 of 2007
D. No. 19 of 2006

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5. Which law protects people’s personal data?

A. Personal Data Protection Act 2022
B. Electronic Transactions Act 2006
C. Intellectual Property Act 2003
D. Payment Devices Frauds Act 2006

6. Copying a web page into your project and calling it your own is

A. a patent
B. plagiarism
C. mixing
D. fair use

7. Quoting two lines of a song in a review and naming the singer is

A. piracy
B. forgery
C. fair use
D. data theft

8. Making a fake birth certificate on a computer is

A. fair use
B. copyright
C. simulation
D. forgery

9. Which term means: “Stealing or copying data without permission”?

A. Data theft
B. Forgery
C. Patent
D. Intellectual property

10. Which term means: “Entering a computer system without permission”?

A. Unauthorised access
B. Fair use
C. Piracy
D. Copyright

11. Which term means: “Breaking into a computer or network”?

A. Privacy
B. Plagiarism
C. Hacking
D. Patent

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12. Which term means: “Work created by the mind, such as songs, books and software”?

A. Piracy
B. Forgery
C. Intellectual property
D. PDPA

13. Which term means: “The creator’s right to copy and sell their work”?

A. Data theft
B. Copyright
C. Fair use
D. Privacy

14. Which term means: “Protection for a new invention”?

A. Forgery
B. Unauthorised access
C. Plagiarism
D. Patent

15. Which term means: “Illegally copying software, films or music”?

A. Fair use
B. Piracy
C. PDPA
D. Hacking

Structured Questions

1. Name and explain two legal issues in using ICT. *(2 marks)*

> Data theft: stealing data without permission (1); unauthorised access: entering a system without permission (1)

2. Explain copyright, patent and piracy. *(3 marks)*

> Copyright protects creative work (1); patent protects an invention (1); piracy is illegal copying (1)

3. Name three ICT laws of Sri Lanka with their years. *(3 marks)*

> Electronic Transactions Act 2006 (1); Computer Crimes Act 2007 (1); Personal Data Protection Act 2022 (1)

4. What is the difference between fair use and plagiarism? *(2 marks)*

> Fair use: a small part for study with the source named (1); plagiarism: presenting others’ work as your own (1)

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5. Give two ways to protect your privacy online. *(2 marks)*

> Do not post personal details such as address or phone (1); use privacy settings and strong passwords (1)

Summary

- Legal issues break the law; ethical issues are unfair or dishonest.
- Legal issues: data theft, unauthorised access, privacy, forgery.
- Copyright protects creative work; patents protect inventions.
- Piracy is illegal copying.
- Computer Crimes Act No. 24 of 2007 covers hacking.
- PDPA No. 9 of 2022 protects personal data.
- Fair use: small part, for study, name the source.
- Plagiarism: passing off others' work (or AI work) as yours.

MCQ answer key – 6.7

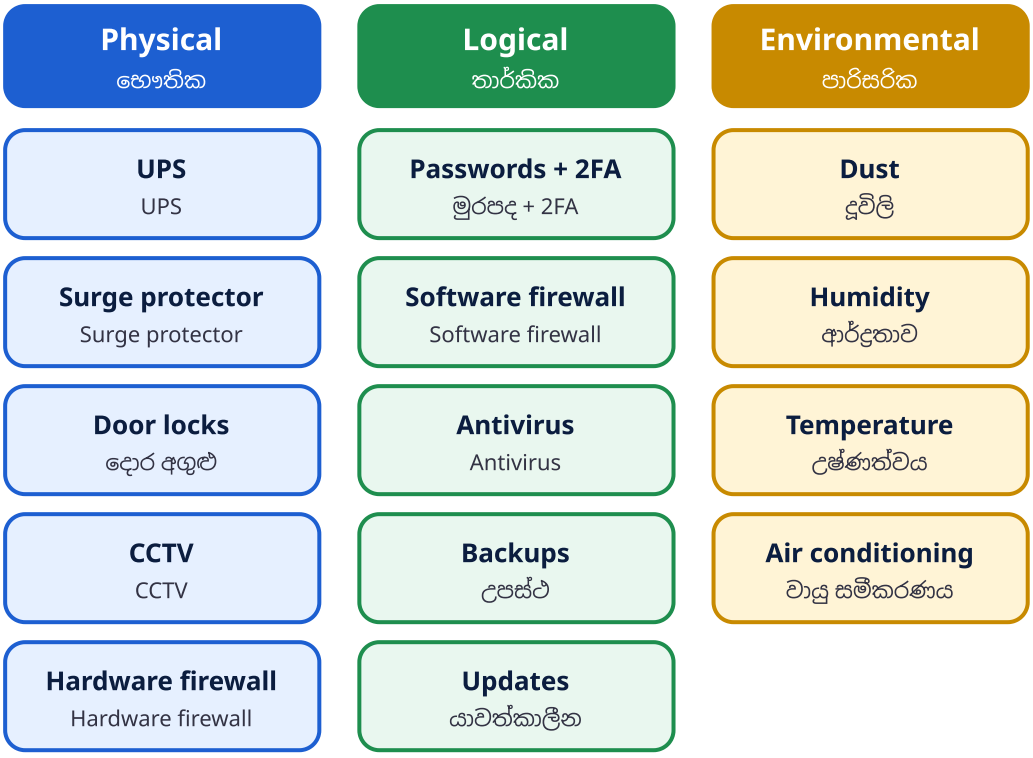
1. **A** – It breaks the Computer Crimes Act.
2. **D** – Illegal copying = piracy.
3. **B** – Patents protect inventions.
4. **C** – CCA = 2007.
5. **A** – PDPA No. 9 of 2022.
6. **B** – Always name sources.
7. **C** – A small part + the source = fair use.
8. **D** – Fake documents = forgery.
9. **A** – Data theft – Stealing or copying data without permission.
10. **A** – Unauthorised access – Entering a computer system without permission.
11. **C** – Hacking – Breaking into a computer or network.
12. **C** – Intellectual property – Work created by the mind, such as songs, books and software.
13. **B** – Copyright – The creator's right to copy and sell their work.
14. **D** – Patent – Protection for a new invention.
15. **B** – Piracy – Illegally copying software, films or music.

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6.8 Protecting ICT Infrastructure: Physical, Logical and Environmental Security

Syllabus 15.8. Computers and data must be kept safe. We protect them in three ways: **physical security** (the machines), **logical security** (the data and programs) and control of **environmental factors** (dust, humidity and temperature). Sri Lanka also has **institutions** that help with information security.



Three ways to protect ICT infrastructure.

1. Physical security

Method	How it protects
UPS	A battery that keeps the computer on during a power cut so you can save work
Surge protector	Stops sudden high voltage (e.g. lightning) from damaging devices
Hardware firewall	A device that blocks unwanted network traffic before it reaches the computers
Door locks	Only allowed people can enter the computer room (keys, cards, fingerprints)
CCTV	Cameras watch and record who comes in

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UPS example: a UPS stores **108 Wh**. The load is Computer 150 W + Monitor 30 W = **180 W**. Running time = 108 ÷ 180 × 60 ≈ **36 minutes** – enough to save and shut down.

2. Logical security

- **Passwords:** long (12+ characters), mixed letters, numbers and symbols; never share; turn on two-step verification.
- **Software firewall:** a program on the computer that allows or blocks network connections.
- **Backups:** extra copies of data in case it is lost.



The 3-2-1 backup rule.

> 💡 3-2-1 rule: keep **3** copies, on **2** different kinds of media, with **1** copy away from home or office (e.g. the cloud).

3. Protection against malware

Threat	What it does	Protection
Spam	Unwanted bulk e-mail, often with scams or bad links	Spam filter; do not reply or click
Virus	A program that copies itself and damages files	Antivirus, updates, scan USB drives
Key-logger	Secretly records keys you press to steal passwords	Antivirus; avoid public computers for banking

4. Environmental factors

Dust
Blocks fans and causes overheating – keep covers on and clean.

Humidity
Damp air rusts parts and causes short circuits – use AC or a dehumidifier.

Temperature
Heat damages chips – keep rooms cool and air flowing.

5. Information security institutions in Sri Lanka

Institution	Role
Sri Lanka CERT	National cyber security help and warnings.

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ICTA	Government ICT agency; digital government.
TechCERT	Security services for organisations.
CID Cyber Crimes Division	Police investigation of computer crimes.
Data Protection Authority	Makes sure the PDPA is followed.

NEW 2026 2026: **ransomware** locks files and asks for money – offline backups are the best defence. Turn on **automatic updates** and **two-step verification**, and report cyber attacks to **Sri Lanka CERT**.

Key Words

Physical security – Protecting the hardware and the computer room.

Logical security – Protecting data and programs with software methods.

UPS – A battery unit that powers a computer during a power cut.

Surge protector – A device that stops sudden high voltage reaching equipment.

Firewall – Hardware or software that blocks unwanted network traffic.

CCTV – Cameras that watch and record an area.

Backup – An extra copy of data kept in case of loss.

Malware – Harmful software such as viruses and key-loggers.

Spam – Unwanted bulk e-mail messages.

Virus – A program that copies itself and damages files.

Key-logger – Malware that secretly records the keys you press.

Sri Lanka CERT – The national team that helps with cyber security problems.

Sample Q&A

1. What is the difference between physical and logical security?

Answer: Physical security protects the hardware; logical security protects data and programs.

2. Why do we use a UPS?

Answer: To keep the computer on during a power cut so work can be saved.

3. A 108 Wh UPS runs a 180 W load. About how long will it last?

Answer: 108 ÷ 180 × 60 ≈ 36 minutes.

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4. What is the 3-2-1 backup rule?

> **Answer:** 3 copies, on 2 kinds of media, 1 copy off-site.

5. How does a key-logger steal passwords?

> **Answer:** It secretly records every key you press and sends it to the attacker.

6. Name three environmental factors that can damage computers.

> **Answer:** Dust, humidity and high temperature.

MCQ

1. Which device keeps a computer running during a power cut?

A. CCTV
B. router
C. UPS
D. scanner

2. Lightning causes a sudden high voltage. Which device helps?

A. surge protector
B. key-logger
C. spam filter
D. webcam

3. A 108 Wh UPS supplies a 180 W load. Running time is about

A. 72 minutes
B. 180 minutes
C. 18 minutes
D. 36 minutes

4. Which one is logical security?

A. a door lock
B. a strong password
C. CCTV
D. a UPS

5. Malware that secretly records every key you press is a

A. spam filter
B. key-logger
C. firewall
D. UPS

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6. In the 3-2-1 backup rule, the “1” means

A. one copy kept off-site
B. one computer only
C. back up once a year
D. one password

7. Damp air in a computer room is a problem of

A. spam
B. piracy
C. humidity
D. plagiarism

8. Cyber attacks in Sri Lanka can be reported to

A. Met Department
B. CSE
C. Survey Department
D. Sri Lanka CERT

9. Which term means: “Protecting the hardware and the computer room”?

A. Physical security
B. Surge protector
C. CCTV
D. Spam

10. Which term means: “Protecting data and programs with software methods”?

A. Backup
B. Firewall
C. Virus
D. Logical security

11. Which term means: “A battery unit that powers a computer during a power cut”?

A. CCTV
B. UPS
C. Key-logger
D. Malware

12. Which term means: “A device that stops sudden high voltage reaching equipment”?

A. Backup
B. Sri Lanka CERT
C. Surge protector
D. Spam

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13. Which term means: “Hardware or software that blocks unwanted network traffic”?

A. Physical security
B. Firewall
C. Malware
D. Virus

14. Which term means: “Cameras that watch and record an area”?

A. Key-logger
B. Spam
C. CCTV
D. Logical security

15. Which term means: “An extra copy of data kept in case of loss”?

A. Backup
B. UPS
C. Virus
D. Sri Lanka CERT

Structured Questions

1. Name three physical security methods and say how each helps. *(3 marks)*

> UPS keeps power on (1); door locks stop strangers (1); CCTV records who enters (1)

2. A UPS stores 108 Wh. A computer uses 150 W and a monitor 30 W. Calculate the running time. *(3 marks)*

> Total load 180 W (1); 108 ÷ 180 = 0.6 hours (1); × 60 ≈ 36 minutes (1)

3. Explain spam, virus and key-logger, with one protection for each. *(3 marks)*

> Spam: unwanted e-mail – spam filter (1); virus: damages files – antivirus (1); key-logger: records keys – antivirus and care on public PCs (1)

4. Explain the 3-2-1 backup rule. *(3 marks)*

> 3 copies (1); on 2 kinds of media (1); 1 copy off-site, e.g. the cloud (1)

5. How do dust, humidity and temperature harm computers? Give one precaution for each. *(3 marks)*

> Dust blocks fans – clean and cover (1); humidity rusts parts – AC or dehumidifier (1); heat damages chips – cool room (1)

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Summary

- Three kinds of protection: physical, logical, environmental.
- Physical: UPS, surge protector, hardware firewall, locks, CCTV.
- UPS time = Wh ÷ W × 60 minutes.
- Logical: passwords, software firewall, backups.
- Backup rule 3-2-1.
- Malware: spam, virus, key-logger – use antivirus and care.
- Environment: control dust, humidity and temperature.
- Sri Lanka CERT, ICTA and the CID help with cyber security.

MCQ answer key – 6.8

1. **C** – Uninterruptible Power Supply.
2. **A** – It stops voltage spikes.
3. **D** – 108 ÷ 180 × 60.
4. **B** – Passwords protect data.
5. **B** – It steals passwords.
6. **A** – Off-site protects from fire or theft.
7. **C** – Use AC or a dehumidifier.
8. **D** – CERT handles cyber security.
9. **A** – Physical security – Protecting the hardware and the computer room.
10. **D** – Logical security – Protecting data and programs with software methods.
11. **B** – UPS – A battery unit that powers a computer during a power cut.
12. **C** – Surge protector – A device that stops sudden high voltage reaching equipment.
13. **B** – Firewall – Hardware or software that blocks unwanted network traffic.
14. **C** – CCTV – Cameras that watch and record an area.
15. **A** – Backup – An extra copy of data kept in case of loss.

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6.9 Health, Safety and E-waste: Ergonomics, RSI, Eye Strain and Safe Disposal

Syllabus 15.9. Using computers for a long time in a bad way can hurt our body, and old electronic equipment can harm the environment. You will learn about **ergonomics**, **RSI**, **eye strain**, **backache**, **e-waste** and how to **dispose of** old devices safely.

1. Ergonomics

Ergonomics means designing the workplace (chair, desk, screen, keyboard) to fit the human body so that people can work safely and comfortably.



Good sitting position at a computer.

2. Health issues

Problem	Cause	Prevention
RSI (Repetitive Strain Injury)	Doing the same hand movement (typing, mouse, phone) for a long time	Keep wrists straight, use a wrist rest, stretch and rest often
Eye strain	Looking at a bright screen for a long time; glare	Follow the 20-20-20 rule, reduce glare, blink often
Backache and neck pain	Bad posture; bending over a laptop or phone	Adjustable chair with back support; screen at eye level

💡 **20-20-20 rule:** every **20 minutes**, look at something about **6 metres** (20 feet) away for **20 seconds**. In a 2-hour study session that is **6** short eye breaks.

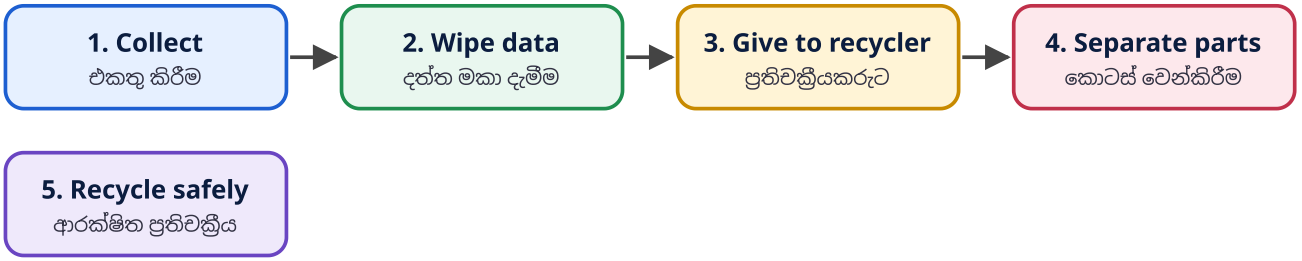
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3. E-waste

E-waste is old or broken electronic equipment: phones, computers, monitors, batteries and printers. It contains **hazardous elements** that are dangerous if thrown away with normal rubbish or burned.

Hazardous element	Found in	Harm
Lead	Old CRT monitors, solder	Damages the brain and nerves
Mercury	Old screen backlights, switches	Poisons water and fish
Cadmium	Rechargeable batteries	Harms kidneys
Lithium	Phone and laptop batteries	Can catch fire if crushed

4. Safe disposal and destruction



Reduce, reuse, recycle and safe disposal of e-waste.

- **Reuse:** repair, or donate working devices to schools.
- **Recycle:** give e-waste to an approved collector (e.g. through the Central Environmental Authority programmes).
- **Never** burn e-waste or throw it in rivers or normal bins.
- **Destroy data first:** wipe or reset the device; break the hard disk if it held secret data.

> NEW 2026 2026: people change phones often, so e-waste is growing fast. Long **phone use** causes “text neck” and poor sleep – keep phones away at bedtime and use night mode.

Key Words

Ergonomics – Designing the workplace to fit the human body.

RSI – Pain in hands, wrists or arms from repeating the same movement.

Eye strain – Tired, dry or sore eyes from looking at screens too long.

Backache – Back pain caused by bad sitting posture.

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Posture – The way you hold your body when sitting or standing.	**Glare** – Strong light reflecting off the screen.
20-20-20 rule – Every 20 minutes look 6 m away for 20 seconds.	**E-waste** – Old or broken electronic equipment.
Hazardous element – A dangerous substance such as lead or mercury.	**Recycling** – Taking useful materials out of old devices to use again.
Safe disposal – Getting rid of e-waste without harming people or nature.	**Data destruction** – Wiping or breaking storage so no one can read old data.

Sample Q&A

1. What is ergonomics?

> **Answer:** Designing the workplace to fit the body so we work safely and comfortably.

2. What causes RSI and how can we prevent it?

> **Answer:** Repeating the same movement; keep wrists straight, stretch and rest often.

3. Explain the 20-20-20 rule.

> **Answer:** Every 20 minutes look about 6 m away for 20 seconds.

4. How can you avoid backache at a computer?

> **Answer:** Sit straight with back support, feet flat and the screen at eye level.

5. Name two hazardous elements in e-waste.

> **Answer:** Lead and mercury (also cadmium and lithium).

6. Why should you wipe data before giving away an old phone?

> **Answer:** So no one can read your photos, messages and passwords.

MCQ

1. Pain in the wrist from typing for many hours is

A. RSI
B. CAD
C. BPO
D. UPS

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2. Under the 20-20-20 rule, how many eye breaks are needed in 2 hours?

A. 4
B. 6
C. 20
D. 12

3. The top of the monitor should be

A. at about eye level
B. on the floor
C. far above the head
D. behind you

4. Designing chairs and desks to fit the body is

A. piracy
B. e-commerce
C. ergonomics
D. rendering

5. Which element in old CRT monitors damages the brain and nerves?

A. oxygen
B. nitrogen
C. lead
D. carbon

6. The best way to get rid of an old laptop is to

A. throw it in a river
B. bury it in the garden
C. burn it
D. wipe it and give it to an approved recycler

7. Strong light reflecting off the screen is called

A. surge
B. glare
C. spam
D. mixing

8. A swollen phone battery should be

A. taken to an e-waste collection point
B. put in a fire
C. kept under the pillow
D. crushed with a hammer

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9. Which term means: “Designing the workplace to fit the human body”?

A. Hazardous element
B. Ergonomics
C. Glare
D. Backache

10. Which term means: “Pain in hands, wrists or arms from repeating the same movement”?

A. 20-20-20 rule
B. Recycling
C. RSI
D. Posture

11. Which term means: “Tired, dry or sore eyes from looking at screens too long”?

A. Eye strain
B. Glare
C. Safe disposal
D. E-waste

12. Which term means: “Back pain caused by bad sitting posture”?

A. 20-20-20 rule
B. Data destruction
C. Backache
D. Hazardous element

13. Which term means: “The way you hold your body when sitting or standing”?

A. Ergonomics
B. E-waste
C. Recycling
D. Posture

14. Which term means: “Strong light reflecting off the screen”?

A. Hazardous element
B. RSI
C. Safe disposal
D. Glare

15. Which term means: “Every 20 minutes look 6 m away for 20 seconds”?

A. Recycling
B. 20-20-20 rule
C. Eye strain
D. Data destruction

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Structured Questions

1. Name three health problems from long computer use and give one prevention for each. *(3 marks)*

> RSI – rest and wrist support (1); eye strain – 20-20-20 rule (1); backache – good chair and posture (1)

2. What is ergonomics? Give two features of a good computer workstation. *(3 marks)*

> Fitting the workplace to the body (1); adjustable chair with back support (1); screen at eye level about an arm's length away (1)

3. Kamal studies at a screen for 3 hours. Using the 20-20-20 rule, how many eye breaks should he take, and what does he do in each? *(3 marks)*

> 180 ÷ 20 = 9 breaks (1); look about 6 m away (1); for 20 seconds (1)

4. What is e-waste? Name two hazardous elements and their harm. *(3 marks)*

> Old or broken electronics (1); lead – harms the brain (1); mercury – poisons water (1)

5. Give three safe ways to dispose of old electronic equipment. *(3 marks)*

> Reuse or donate (1); give to an approved recycler (1); wipe or destroy data first (1)

Summary

- Ergonomics fits the workplace to the body.
- RSI comes from repeating the same movement.
- Eye strain: use the 20-20-20 rule and reduce glare.
- Backache: good chair, straight back, screen at eye level.
- E-waste = old or broken electronics.
- Hazardous: lead, mercury, cadmium, lithium.
- Reduce, reuse, recycle – never burn e-waste.
- Wipe or destroy data before disposal.

MCQ answer key – 6.9

1. **A** – Repetitive Strain Injury.
2. **B** – 120 ÷ 20 = 6.
3. **A** – Avoids neck and eye strain.
4. **C** – Ergonomics = fit to the body.
5. **C** – Lead is hazardous.
6. **D** – Safe disposal and data destruction.
7. **B** – Glare causes eye strain.

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8. **A** – Lithium can catch fire.
9. **B** – Ergonomics – Designing the workplace to fit the human body.
10. **C** – RSI – Pain in hands, wrists or arms from repeating the same movement.
11. **A** – Eye strain – Tired, dry or sore eyes from looking at screens too long.
12. **C** – Backache – Back pain caused by bad sitting posture.
13. **D** – Posture – The way you hold your body when sitting or standing.
14. **D** – Glare – Strong light reflecting off the screen.
15. **B** – 20-20-20 rule – Every 20 minutes look 6 m away for 20 seconds.

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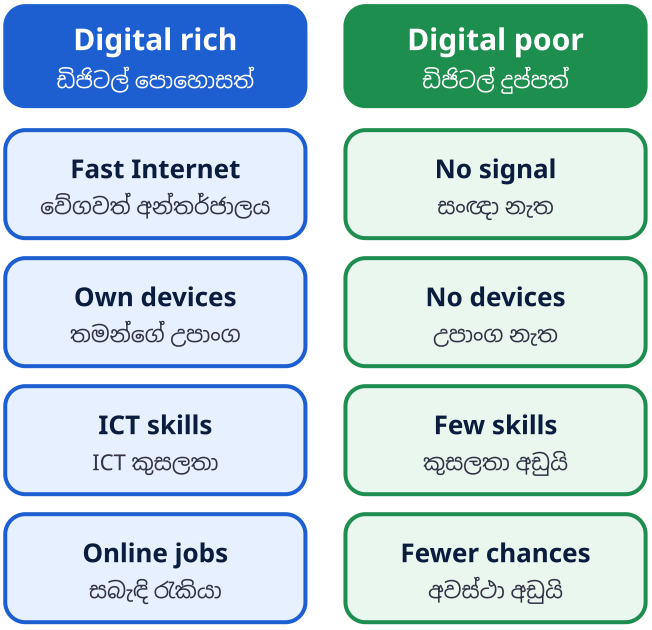
G.C.E. O/L Grade 11 ICT · Lesson 6

6.10 ICT and Society: Digital Divide, Jobs, Equal Opportunities and Social Media

Syllabus 15.10. ICT changes the way people live and work. Some changes are good and some cause problems. You will learn about the **digital divide** and **digital bridge**, **de-skilling**, **techno-rich jobs**, **equal opportunities**, and how to use **social media** safely.

1. Digital divide

The **digital divide** is the gap between people who **can** use computers and the Internet and people who **cannot**. Causes include money, place (city or village), age, education, language and disability.

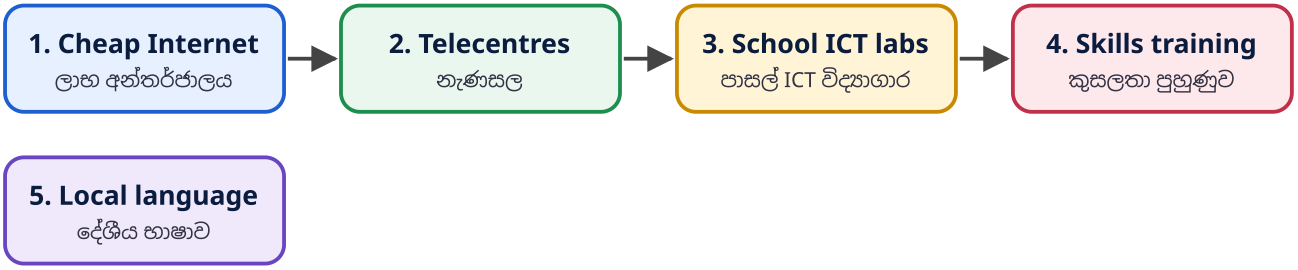


Causes of the digital divide.

2. Digital bridge

A **digital bridge** is any step that closes the digital divide and helps everyone use ICT.

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Ways to build a digital bridge.

- Village IT centres (e.g. Nenasala) and school computer labs.
- Cheap data packages and mobile coverage in rural areas.
- Software and websites in **Sinhala and Tamil**.
- Free training for older people and assistive tools for people with disabilities.

3. Changes in employment

Idea	Meaning	Example
De-skilling	A machine does the skilled part, so workers need fewer skills or lose jobs	A typesetter replaced by desktop publishing; a cashier replaced by self-checkout
Techno-rich employment	New jobs that need ICT skills	Software developer, web designer, network engineer, data analyst, cyber security officer

> 💡 To stay employed, keep learning new ICT skills – this is called **lifelong learning**.

4. Equal opportunities

ICT can give **everyone a fair chance**: people can study online from villages, work from home, and people with disabilities can use **screen readers**, voice typing and large text. Women and men, rich and poor, can all apply for jobs online.

5. Misuse of social media and precautions

Misuse	Precaution
Cyberbullying – hurting or threatening someone online	Do not reply; block, report and tell a trusted adult
Fake news and rumours	Check the source before you share
Sharing **personal details** and photos	Use privacy settings; never share address, school or location
Meeting **online strangers**	Never meet them alone; tell your parents
Addiction – scrolling for hours	Set screen-time limits

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NEW 2026 2026: AI-made **deepfakes** and fake news spread fast, so check before sharing. The **Online Safety Act No. 9 of 2024** deals with harmful online statements. Report serious abuse to the police or Sri Lanka CERT.

Key Words

Digital divide – The gap between people who can and cannot use ICT.

Digital bridge – Actions that close the digital divide.

Nenasala – Village ICT centres that give people computer and Internet access.

De-skilling – When machines do skilled work so workers need fewer skills.

Techno-rich employment – New jobs that need ICT skills.

Lifelong learning – Continuing to learn new skills all through life.

Equal opportunities – Everyone getting a fair chance to learn and work.

Screen reader – Software that reads screen text aloud for blind users.

Cyberbullying – Hurting or threatening someone online.

Fake news – False information shared as if it were true.

Privacy settings – Options that control who can see your posts.

Online Safety Act – Sri Lanka's Act No. 9 of 2024 about harmful online statements.

Sample Q&A

1. What is the digital divide?

Answer: The gap between people who can use ICT and people who cannot.

2. Give two causes of the digital divide.

Answer: Not enough money; living in a village with poor coverage (also age, language, disability).

3. Give two ways to build a digital bridge.

Answer: Village IT centres such as Nenasala and software in Sinhala and Tamil.

4. What is the difference between de-skilling and techno-rich employment?

Answer: De-skilling: machines take skilled work. Techno-rich: new jobs needing ICT skills.

5. How does ICT give equal opportunities to people with disabilities?

Answer: Screen readers, voice typing and large text let them study and work.

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6. What should you do if you are cyberbullied?

> **Answer:** Do not reply; block, report, keep evidence and tell a trusted adult.

MCQ

1. The gap between people who can and cannot use ICT is the

A. fair use
B. digital bridge
C. de-skilling
D. digital divide

2. Opening a Nenasala centre in a village is an example of a

A. digital bridge
B. digital divide
C. key-logger
D. piracy

3. Self-checkout machines replacing cashiers is an example of

A. telemedicine
B. techno-rich employment
C. de-skilling
D. fair use

4. Which is a techno-rich job?

A. hand typesetter
B. bullock cart driver
C. cyber security officer
D. telegram messenger

5. A blind student uses software that reads web pages aloud. This is a

A. screen reader
B. key-logger
C. firewall
D. spam filter

6. Before sharing a shocking news post you should

A. check the source
B. share it quickly
C. add more rumours
D. send it to strangers

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7. Someone keeps sending you hurtful messages. The best action is to

A. reply angrily
B. share your password
C. meet them alone
D. block, report and tell an adult

8. The Sri Lankan law about harmful online statements is the

A. Right to Information Act 2016
B. Online Safety Act 2024
C. Intellectual Property Act 2003
D. Electronic Transactions Act 2006

9. Which term means: “The gap between people who can and cannot use ICT”?

A. De-skilling
B. Lifelong learning
C. Cyberbullying
D. Digital divide

10. Which term means: “Actions that close the digital divide”?

A. Techno-rich employment
B. Digital bridge
C. Fake news
D. Equal opportunities

11. Which term means: “Village ICT centres that give people computer and Internet access”?

A. Screen reader
B. Lifelong learning
C. Nenasala
D. Privacy settings

12. Which term means: “When machines do skilled work so workers need fewer skills”?

A. Equal opportunities
B. De-skilling
C. Cyberbullying
D. Online Safety Act

13. Which term means: “New jobs that need ICT skills”?

A. Techno-rich employment
B. Screen reader
C. Fake news
D. Digital divide

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14. Which term means: “Continuing to learn new skills all through life”?

A. Cyberbullying
B. Lifelong learning
C. Privacy settings
D. Digital bridge

15. Which term means: “Everyone getting a fair chance to learn and work”?

A. Online Safety Act
B. Nenasala
C. Equal opportunities
D. Fake news

Structured Questions

1. What is the digital divide? Give two causes. *(3 marks)*

> The gap between people who can and cannot use ICT (1); money (1); place, age, language or disability (1)

2. Suggest three ways the government can build a digital bridge. *(3 marks)*

> Village IT centres or school labs (1); cheap data and rural coverage (1); local-language software and free training (1)

3. Explain de-skilling and techno-rich employment with one example each. *(2 marks)*

> De-skilling: machines do skilled work (1), e.g. self-checkout (1); techno-rich: new ICT jobs (1), e.g. web designer (1)

4. Give two ways ICT provides equal opportunities. *(2 marks)*

> Online learning from any place (1); assistive tools such as screen readers for people with disabilities (1)

5. Name three ways social media is misused and give a precaution for each. *(3 marks)*

> Cyberbullying – block and report (1); fake news – check sources (1); sharing personal details – privacy settings (1)

Summary

- Digital divide = gap between ICT haves and have-nots.
- Causes: money, place, age, education, language, disability.
- Digital bridge: Nenasala, cheap data, local languages, training.
- De-skilling: machines take skilled work.

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- Techno-rich jobs need ICT skills – keep learning.
- ICT gives equal opportunities, e.g. screen readers.
- Social media misuse: bullying, fake news, oversharing, strangers.
- Precautions: block, report, check sources, privacy settings.

MCQ answer key – 6.10

1. **D** – Divide = gap.
2. **A** – It closes the gap.
3. **C** – Machines take the skilled task.
4. **C** – It needs ICT skills.
5. **A** – Assistive technology gives equal opportunities.
6. **A** – Stop fake news.
7. **D** – Never fight back online.
8. **B** – Act No. 9 of 2024.
9. **D** – Digital divide – The gap between people who can and cannot use ICT.
10. **B** – Digital bridge – Actions that close the digital divide.
11. **C** – Nenasala – Village ICT centres that give people computer and Internet access.
12. **B** – De-skilling – When machines do skilled work so workers need fewer skills.
13. **A** – Techno-rich employment – New jobs that need ICT skills.
14. **B** – Lifelong learning – Continuing to learn new skills all through life.
15. **C** – Equal opportunities – Everyone getting a fair chance to learn and work.

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