G.C.E. O/L Grade 10 ICT · Lesson 1

Lesson 1 O/L Exam Practice: Questions and Answers

These questions are in the style of the O/L ICT exam. Paper I has multiple choice questions. Paper II has structured questions with parts. They cover all of Lesson 1 (1.1, 1.2 and 1.3), including the 2026 syllabus topics. Try them first, then check the answers and explanations.

Paper I – Multiple choice questions (25)

1. Consider the following statements about data and information.
P – Data are raw facts that have not been processed.
Q – Information is produced by processing data.
R – The same item can be information for one person and data for another.
Which of the above statements are correct?

A. Q and R only
B. P, Q and R
C. P and Q only
D. P only

2. Which of the following shows the correct order of the generations of computers by their main technology?

A. Transistors → Vacuum tubes → Integrated circuits → Microprocessors
B. Vacuum tubes → Transistors → Microprocessors → Integrated circuits
C. Vacuum tubes → Transistors → Integrated circuits → Microprocessors
D. Vacuum tubes → Integrated circuits → Transistors → Microprocessors

3. A student borrows a library book using a self-service computer.
P – The screen shows the return date.
Q – The barcode of the book is scanned.
R – The system records the loan and works out the return date.
Which gives the correct order of these steps?

A. Q, P, R
B. R, Q, P
C. P, Q, R
D. Q, R, P

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4. A supermarket cashier scans the barcode of a soap and the bill shows its price. In this situation, which of the following is the output?

A. The barcode scanner
B. The printed bill with the price and total
C. The barcode on the soap
D. Finding the price in the product database

5. Which of the following is the best example of the Internet of Things (IoT)?

A. A smart electricity meter that sends usage readings to the supplier automatically over a network
B. Printing a report on a laser printer
C. A student watching a downloaded video offline
D. A teacher typing a lesson note in a word processor

6. Consider the following statements about computer generations.
P – First generation computers used vacuum tubes and produced a lot of heat.
Q – Second generation computers used integrated circuits.
R – Fourth generation computers made personal computers (PCs) common.
Which of the above statements are correct?

A. P, Q and R
B. Q and R only
C. P and R only
D. P and Q only

7. Herman Hollerith's tabulating machine is important in computer history mainly because it

A. used punched cards to process large amounts of census data
B. was the first electronic computer
C. introduced the graphical user interface
D. was the first computer to use transistors

8. A parent asks for her son's marks, but the teacher gives her a list with the marks of all 40 students in the class. Which quality of good information is mainly missing?

A. Timeliness
B. Completeness
C. Accuracy
D. Relevance

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9. Consider the following statements about online threats.
P – Phishing uses fake messages or websites to steal details such as passwords and OTPs.
Q – Ransomware locks or encrypts files and demands payment.
R – Installing antivirus software alone gives complete protection from all online threats.
Which of the above statements are correct?

A. P only
B. P and Q only
C. Q and R only
D. P, Q and R

10. Consider the following statements about cloud computing.
P – Files saved in the cloud can be opened from different devices with Internet access.
Q – Cloud storage never needs an Internet connection.
R – Google Drive and OneDrive are examples of cloud storage services.
Which of the above statements are correct?

A. P and Q only
B. Q and R only
C. P and R only
D. P, Q and R

11. Which of the following pairs is correctly matched?

A. Vacuum tubes – fourth generation
B. Integrated circuits – first generation
C. Microprocessors – third generation
D. Transistors – second generation

12. A Grade 10 student in a rural area cannot join online classes because there is no Internet signal and the family has no device. This problem is best described as

A. the digital divide
B. a privacy violation
C. a computer virus
D. software piracy

13. A rice mill weighs each farmer's paddy on a digital scale connected to a computer. The computer calculates the payment and prints a receipt. For this system, the weight of a paddy bag is

A. feedback
B. a processing step
C. input data
D. output information

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14. Arrange these calculating devices from the oldest to the newest: P – Pascaline, Q – Abacus, R – Napier's bones, S – Analytical Engine.

A. Q, P, R, S
B. Q, R, P, S
C. Q, R, S, P
D. R, Q, P, S

15. Consider these activities.
P – Paying a traffic fine through a government online portal.
Q – Buying clothes from an online shop.
R – Applying online for a copy of a birth certificate.
Which of them are e-government services?

A. Q and R only
B. P and Q only
C. P and R only
D. P, Q and R

16. Consider the following statements.
P – Feedback in a system uses the output to check and control the system.
Q – Storage keeps data and information for future use.
R – A system has no inputs if it has outputs.
Which of the above statements are correct?

A. P and R only
B. P, Q and R
C. Q and R only
D. P and Q only

17. Consider the following statements.
P – Transistors are smaller and more reliable than vacuum tubes.
Q – An integrated circuit (IC) has many transistors on one small chip.
R – Third generation computers could use keyboards, monitors and an operating system.
Which of the above statements are correct?

A. P and Q only
B. P and R only
C. Q and R only
D. P, Q and R

18. A doctor in a Colombo hospital talks to a patient in Jaffna through a video call and sends the prescription by e-mail. This is an example of

A. e-banking
B. telemedicine
C. e-commerce
D. robotics

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19. Which of the following is the best way to protect your online accounts?

A. Use a strong password and turn on two-step verification
B. Use the same simple password for every account
C. Share your OTP with friends so they can help you
D. Write your password on the screen of your phone

20. Consider the following statements about AI.

P – AI lets computers do tasks that normally need human thinking, like recognising faces.
Q – Machine learning lets a computer improve by learning from data.
R – AI answers are always correct, so they never need to be checked.
Which of the above statements are correct?

A. Q and R only
B. P and Q only
C. P only
D. P, Q and R

21. In a smart greenhouse, which device is an OUTPUT device that carries out an action?

A. A fan motor that switches on when it is too hot
B. A temperature sensor
C. A humidity sensor
D. A light sensor

22. Which of the following statements about storage is INCORRECT?

A. Floppy disks are widely used in new computers today
B. Cloud storage keeps files on remote servers
C. Pen drives use flash memory
D. An SSD has no moving parts

23. A company keeps customers' phone numbers and addresses and sells them to another company without permission. Which issue does this mainly raise?

A. The digital divide
B. Hardware failure
C. Data privacy
D. Low processing speed

24. Consider these statements about ICT in agriculture.

P – A farmer can get weather and market price information on a mobile phone.
Q – Drones can be used to watch large fields.
R – ICT completely removes the need for farmers.
Which of the above statements are correct?

A. Q and R only
B. P only
C. P, Q and R
D. P and Q only

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25. ENIAC is an example of a computer from which generation?

A. First generation

B. Fourth generation

C. Third generation

D. Second generation

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Paper II – Structured questions

1. Scenario – School sports meet. A school uses a computer system for its sports meet. Officials enter the finishing position of each athlete in every event. The system calculates the points for each house, ranks the houses and shows the result on a large screen. Certificates are printed for winners and the results are saved for next year. *(12 marks)*

(i) Write down the input, process and output of this system. *(3 marks)*
(ii) "Athlete 12 came 2nd in the 100 m." Is this data or information for the system? Is the final house ranking data or information for the principal? Give reasons. *(2 marks)*
(iii) Why is saving (storage) needed in this system? Give two reasons. *(2 marks)*
(iv) An official types 1st instead of 3rd for one athlete. Explain what happens to the output and name this idea. *(3 marks)*
(v) Give two advantages of using a computer for this task instead of doing it by hand. *(2 marks)*

2. Scenario – A farmer using IoT. Sunil grows vegetables in Dambulla. He fixes soil moisture sensors in his field. When the soil is dry, the system switches on a water pump automatically and sends an alert to his smartphone. The data is saved in the cloud and he can see graphs in a mobile app. *(11 marks)*

(i) Give two reasons from the scenario why this is called an IoT system. *(2 marks)*
(ii) Identify one input device and two output devices or outputs in this system. *(3 marks)*
(iii) State two benefits Sunil gets from this system. *(2 marks)*
(iv) Explain why the system needs cloud storage and an Internet connection. *(2 marks)*
(v) Give one problem Sunil may face with this system and suggest a solution. *(2 marks)*

3. Scenario – A hospital. A district hospital is starting a computer system. Patient details are entered at registration. Doctors see test reports on screens, and some patients in far away villages talk to specialists through video calls. *(10 marks)*

(i) State two ways ICT helps the hospital staff. *(2 marks)*
(ii) What is the name given to providing medical advice through video calls? Give one benefit to a village patient. *(2 marks)*
(iii) Patient records are personal data. Give two steps the hospital should take to protect this data. *(2 marks)*
(iv) A staff member opens an e-mail attachment and all files are locked with a message asking for money. Name this type of attack and give one way to prevent it. *(3 marks)*
(v) Give one disadvantage of depending fully on the computer system. *(1 marks)*

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4. Scenario – A shop billing system. A grocery shop in Kandy uses a barcode scanner, a computer and a receipt printer. When an item is scanned, its name and price appear on the screen. At the end, a bill is printed and the stock quantity is reduced. *(11 marks)*

(i) Name one input device and two output devices used here. *(3 marks)*
(ii) Describe two processing tasks the computer does when making a bill. *(2 marks)*
(iii) How does updating the stock quantity help the shop owner? (Hint: think about feedback.) *(2 marks)*
(iv) Give two advantages of this system for the customer. *(2 marks)*
(v) The owner wants to see sales from home. Suggest a suitable technology and give one reason. *(2 marks)*

5. Scenario – e-government services. Nimali wants to renew her driving licence, apply for a copy of a birth certificate and check her son's O/L results. A friend tells her that she can do many of these online. *(10 marks)*

(i) Classify each of these as e-government or not e-government: (a) renewing a driving licence online, (b) buying a phone from an online shop, (c) checking O/L results on the Department of Examinations website, (d) booking a hotel room online. *(2 marks)*
(ii) Explain how e-government services can save cost for both citizens and the government. *(2 marks)*
(iii) Give two problems that may stop some citizens from using these services. *(2 marks)*
(iv) Nimali gets an e-mail that looks like it is from the electricity board, asking for her card number. What should she do? Give two actions. *(2 marks)*
(v) Suggest two ways the government can reduce the digital divide. *(2 marks)*

6. Scenario – A school ICT exhibition on the history of computers. Grade 10 students are making a timeline poster from the abacus to today's AI-powered smartphones. *(10 marks)*

(i) Arrange these in time order, oldest first: Analytical Engine, Abacus, ENIAC, Pascaline. Give one reason why the Analytical Engine is important. *(2 marks)*
(ii) For the 2nd, 3rd and 4th generations, write the main technology and one improvement it brought. *(3 marks)*
(iii) Explain why second generation computers were more reliable than first generation computers. *(2 marks)*
(iv) A smartphone voice assistant that answers spoken questions is linked with the fifth generation. Explain why. *(3 marks)*

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7. Scenario – Online learning and digital citizenship. During school holidays, a Grade 10 class uses Google Classroom, Zoom and e-Thaksalawa. The teacher also shares notes on Google Drive. *(10 marks)*

(i) Give two advantages of online learning for students. *(2 marks)*
(ii) State two technologies needed for a student to join a Zoom class. *(2 marks)*
(iii) Explain what “digital citizenship” means and give two examples of good digital citizenship in an online class. *(3 marks)*
(iv) A student says, “AI tools can do my homework, so I don't need to learn.” Give one reason why this is not a good idea. *(2 marks)*
(v) Give one advantage of the teacher sharing notes on Google Drive instead of on paper. *(1 marks)*

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Exam tips

- Read every statement (P, Q, R) on its own and mark it true or false before you look at the options.
- Watch for extreme words like “always”, “never”, “completely”. Statements with them are often false.
- Input, process and output are about DATA and ACTIONS. Name a device only when the question asks for a device.
- Data or information? Ask: “Has it been processed to be useful for this person?” The answer can change with the user.
- Generations: remember V–T–I–M, then 5th = AI. Know one feature and one problem for each.
- Early devices: learn the order Abacus → Napier's bones → Pascaline → Leibniz → Jacquard loom → Babbage → Hollerith.
- Don't mix up phishing (tricking you to give details) and ransomware (locking files for money).
- e-government = citizen and government. e-commerce = buying and selling. Choose examples that match.
- Look at the marks: 2 marks usually means two points, or one point with an explanation.
- Use the scenario. Write “the soil sensor” or “the barcode scanner”, not just “a sensor” or “a device”.
- For new 2026 topics (AI, IoT, cloud, 5G), give a simple Sri Lankan example from daily life.
- Manage time: about one minute per MCQ. Leave a hard one, come back later, but never leave an MCQ blank.

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Answers and explanations

Paper I

1. **B** – All three are correct. R is true too: a class's marks list is information for the teacher, but it is data (input) for the principal who calculates the school average. Many students choose “P and Q only” because they think data and information are always fixed.
2. **C** – The order is V–T–I–M: vacuum tubes (1st), transistors (2nd), integrated circuits (3rd), microprocessors/VLSI (4th). A microprocessor is itself a very large IC, so it cannot come before ICs.
3. **D** – Scanning the barcode is input (Q), recording and calculating is processing (R), and showing the date is output (P). So the order is Q → R → P (input → process → output). Q, P, R is wrong because the date cannot be shown before it is worked out.
4. **B** – The bill is what the system gives out, so it is the output. The barcode is input data, looking up the price is processing, and the scanner is an input device, not an output.
5. **A** – IoT means everyday “things” with sensors that connect to a network and share data without a person doing it. The smart meter measures and sends data by itself. The other options use a computer but no connected sensor-based object.
6. **C** – Q is wrong: the 2nd generation used transistors; ICs came in the 3rd generation. P and R are correct – microprocessors in the 4th generation made small, cheap PCs possible.
7. **A** – Hollerith's machine used punched cards to count the 1890 US census much faster. It was electro-mechanical, not electronic, and it came long before transistors.
8. **D** – The marks may be correct and on time, but most of the list is not relevant to the parent – she needed only her son's marks. Students often pick “completeness”, but the list is not missing anything; it has too much unwanted data.
9. **B** – P and Q are correct definitions. R is false: antivirus helps, but it cannot stop you from giving your password to a phishing site. Safe habits, updates and backups are also needed.
10. **C** – Q is false: you need the Internet to reach cloud storage (some apps keep an offline copy, but they sync through the Internet). P and R are correct.
11. **D** – Only transistors – 2nd generation is right. ICs belong to the 3rd, vacuum tubes to the 1st and microprocessors to the 4th generation. Remember V–T–I–M.
12. **A** – The digital divide is the gap between people who have access to ICT (devices, Internet, skills) and those who do not. Nothing here is being attacked or copied illegally.
13. **C** – The weight is a raw fact entered into the system, so it is input data. The payment and the receipt are the output; calculating the payment is processing.
14. **B** – Abacus (ancient times) → Napier's bones (early 1600s) → Pascaline (1640s) → Analytical Engine (1830s). Napier's bones came a few decades before Pascal's machine.
15. **C** – e-government is a government giving services to citizens through ICT, so P and R. Q is e-commerce (buying from a business), even though it is also done online.
16. **D** – R is clearly wrong – a system needs input to produce output. Feedback (P) and storage (Q) are correct descriptions.
17. **D** – All three are true. Many students think keyboards and monitors only came with PCs (4th generation), but they were already used with 3rd generation computers.

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18. **B** – Telemedicine (e-health) is giving medical advice and care at a distance using ICT. No buying, banking or robot is involved here.
19. **A** – A strong, unique password plus two-step verification (an extra code) makes it much harder for others to get in. Re-using one simple password means one leak opens all accounts.
20. **B** – R is false: AI can make mistakes, so its answers must be checked by people. P and Q correctly describe AI and machine learning.
21. **A** – Sensors collect data, so they are input devices. The fan motor acts on the result of processing, so it is an output device (an actuator).
22. **A** – Floppy disks are history – new computers do not even have floppy drives. The other three statements are correct. In "INCORRECT" questions, look for the false statement.
23. **C** – Using or sharing personal data without permission breaks data privacy. Sri Lanka's Personal Data Protection Act (No. 9 of 2022) is about protecting such data.
24. **D** – ICT helps farmers (P, Q) but does not replace them – people still make decisions and do the work. Watch for extreme words like "completely" and "always" in statements.
25. **A** – ENIAC (1940s) used thousands of vacuum tubes, filled a large room and used a lot of power – typical first generation features.

Paper II – model answers and marking points

1. *(12 marks)*

(i) (3 marks)
Input – the finishing positions of athletes in each event (1)
Process – calculating house points and ranking the houses (1)
Output – results on the screen / printed certificates (1)

(ii) (2 marks)
The position is data – a raw fact used as input to calculate points (1). The house ranking is information – it is processed and useful for decisions/announcing the winner (1).

(iii) (2 marks)
Any two (1 each): to compare with next year's results/records; to reprint certificates later; to keep a record of school records (e.g. best times); so data does not need to be entered again.

(iv) (3 marks)
The house points and ranking will be wrong / a wrong certificate may be printed (1) because the computer processes whatever data it gets (1). This is GIGO – Garbage In, Garbage Out (1).

(v) (2 marks)
Any two (1 each): faster results; fewer calculation errors; live results on screen for everyone; easy to correct and reprint; easy to store and search.

🎯 Examiner tip: in (i) do not write "computer" or "keyboard" as the input – the input is the data (the positions). In (iv), always link the wrong input to the wrong output to get full marks.

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2. *(11 marks)*

(i) (2 marks)
Any two (1 each): it uses sensors to collect data; the sensors/system are connected to the Internet; it acts automatically (switches on the pump) without a person; it sends data/alerts to the phone/cloud.

(ii) (3 marks)
Input – soil moisture sensor (1)
Outputs – water pump switching on (1); alert/message on the smartphone or the graph in the app (1)

(iii) (2 marks)
Any two (1 each): saves water; saves time/labour; plants get water at the right time so a better harvest; he can watch the field from far away.

(iv) (2 marks)
The sensor data is sent through the Internet to the cloud (1) so it can be stored safely and viewed from his phone anywhere/at any time (1).

(v) (2 marks)
Problem (1), e.g. weak mobile signal / power cut / high starting cost / sensor damage.
Matching solution (1), e.g. use a system that also works offline and saves data locally / solar panel or battery backup / government or bank support schemes / regular checking.

🎯 Examiner tip: the sensor is the input; the pump and the alert are outputs. Many students write “the phone” as the input – it only shows the result here.

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3. *(10 marks)*

(i) (2 marks)
Any two (1 each): quick access to patient records; test reports shared fast; less paperwork; easy to find past history; fewer mistakes in records; managing medicine stock.

(ii) (2 marks)
Telemedicine / e-health (1)
Benefit (1): saves travel time and cost / gets specialist advice without going to the city / quick advice in an emergency.

(iii) (2 marks)
Any two (1 each): user names and strong passwords; give access only to authorised staff; keep backups; use antivirus and updates; do not share data without the patient's permission (data protection law).

(iv) (3 marks)
Ransomware (1)
Prevention (any one, 2): do not open unknown attachments/links; keep regular offline/cloud backups; keep antivirus and the operating system updated; train staff.

(v) (1 marks)
Any one (1): work stops during a power or network failure; risk of cyber attacks; staff need training; cost of equipment.

🎯 Examiner tip: for “ransomware”, write the name exactly – “virus” alone may not get the mark. For prevention, a specific action (keep backups) gets the mark; a vague one (“be careful”) does not.

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4. *(11 marks)*

(i) (3 marks)
Input – barcode scanner (1)
Output – monitor/screen (1); receipt printer (1)

(ii) (2 marks)
Any two (1 each): finds the item name and price from the stored data; multiplies price by quantity; adds up the total; calculates the balance to give back; reduces the stock.

(iii) (2 marks)
The owner can see which items are running low (1) and order them before they run out / make better buying decisions – the output is used to control the business (feedback) (1).

(iv) (2 marks)
Any two (1 each): faster service / shorter queue; correct prices and totals; a clear printed receipt; can pay by card or QR.

(v) (2 marks)
Cloud computing / a cloud-based billing system (1) – data is stored online and can be seen from any device with the Internet (1).

🎯 Examiner tip: “processing” answers must be actions (find, calculate, add, update). Writing a device name such as “CPU” alone does not describe a processing task.

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5. *(10 marks)*

(i) (2 marks)
e-government: (a) and (c); not e-government: (b) and (d) (½ each = 2).

(ii) (2 marks)
Citizens: no travel cost or lost work time going to offices (1). Government: less paper, fewer counters/staff time, records easier to manage (1).

(iii) (2 marks)
Any two (1 each): no device or Internet (digital divide); lack of ICT skills/digital literacy; language difficulties; fear of fraud or not trusting online payments.

(iv) (2 marks)
Any two (1 each): do not click the link or reply; do not give card/PIN/OTP details; go to the official website or app by typing the address herself; report/delete the message; check the sender's address.

(v) (2 marks)
Any two (1 each): improve Internet coverage in rural areas; ICT centres/free Wi-Fi in public places; teach ICT in schools and to adults; low-cost devices or data packages; services in Sinhala and Tamil.

🎯 Examiner tip: e-government is citizen ↔ government. If your example is buying or selling goods, it is e-commerce and will not get the mark.

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6. *(10 marks)*

(i) (2 marks)
Abacus → Pascaline → Analytical Engine → ENIAC (1). It had the main parts of a modern computer – input, processing (mill), memory (store) and output (1).

(ii) (3 marks)
2nd – transistors: smaller, less heat, more reliable (1)
3rd – integrated circuits: even smaller and faster, cheaper (1)
4th – microprocessors/VLSI: personal computers, laptops, very fast and cheap (1)

(iii) (2 marks)
Vacuum tubes got very hot and often burned out, stopping the computer (1). Transistors are solid, small and produce less heat, so they failed less often (1).

(iv) (3 marks)
The fifth generation is about artificial intelligence (1). The assistant understands natural language/speech (1) and gives answers like a person would, often learning from data (machine learning) (1).

🎯 Examiner tip: learn the order V–T–I–M (Vacuum tubes, Transistors, ICs, Microprocessors). Mixing up the 2nd and 3rd generations is the most common mistake. When asked “explain why”, give the cause AND the effect.

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7. *(10 marks)*

(i) (2 marks)
Any two (1 each): learn from home/anywhere; watch recorded lessons again; access to more resources (e-Thaksalawa); saves travel time; learn at own pace.

(ii) (2 marks)
Any two (1 each): a device (smartphone, tablet or computer); an Internet connection (4G/5G mobile data, Wi-Fi or fibre); camera/microphone; the app or a web browser.

(iii) (3 marks)
Meaning (1): using technology safely, responsibly and respectfully.
Examples (any two, 1 each): being polite in chat; not sharing others' photos or meeting links without permission; not copying others' work (plagiarism); keeping passwords private; reporting cyberbullying.

(iv) (2 marks)
Any one, explained (2): AI answers can be wrong, so you must understand to check them; you will not develop your own skills for the exam; copying AI work without saying so is dishonest.

(v) (1 marks)
Any one (1): students can open them anytime on any device; saves paper and printing cost; easy to update; files are not lost.

🎯 Examiner tip: when asked to “explain”, give the meaning AND a reason or example. A single word answer usually gets only part of the marks.

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