Grade 7 Computing

Unit 11 · Computers and People

ANSWER KEY · FOR TEACHERS

Full marks 30

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. era
2. mainframe
3. unintended
4. e-waste
5. abstraction
6. automation
7. digital divide
8. screen reader

Each carries 0.5 mark. K · 4

2 Label the diagram

1. Electronic giants 1940s–1970s
2. Personal computers 1970s–1990s
3. Internet and the web 1990s–2000s
4. Cloud and AI 2010s onward

Each carries 0.5 mark. K · 2

3 Multiple choice

i. **b.** mainframes, personal computers, the web, mobile — U · 1

Mainframes from the 1940s, personal computers from the 1970s, the internet and web in the 1990s, mobile phones spreading in the 2000s.

ii. **b.** families receiving money from relatives abroad through phone apps — U · 1

The network was built for calls. Phones becoming wallets that move money was something nobody planned in 1999.

iii. **a.** decomposition — A · 1

Splitting one big job (the trek) into smaller parts (each day, and each day's needs) is decomposition.

iv. **b.** changed it — A · 1

The job still exists, but its tasks have changed: the machine counts the cash, and the people do the work that needs judgment and talking to customers.

v. **b.** people who can't tell red from green, and people using a screen reader — A · 1

Some people, most of them men, can't easily tell red from green, and a screen reader can't say what color a dot is unless it has a name. Writing "Open" or "Closed" beside the dot fixes it for both, and helps everyone else too.

4 Computational thinking

1. decomposition → **e.** splitting "warn people about floods" into measuring the rivers, measuring the rain, and sending the message
2. patterns → **c.** knowing from past floods how fast the river rises after heavy rain upstream
3. abstraction → **a.** turning a whole river into the height of the water at each station
4. algorithm → **b.** if the water passes the warning level, sending a message to phones downstream

Each carries 0.5 mark. U · 2

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5 True or false

U · 3

i. ✓ **True**
ii. ✗ **False:** Governments, armies and big companies led, because each computer cost millions.
iii. ✗ **False:** The government rented it, for the 1971 census.
iv. ✓ **True**
v. ✓ **True**
vi. ✗ **False:** The gap between the poorest and richest families (about 52 and 93 in 100) was much larger than between women and men (about 73 and 78).

Each carries 0.5 mark.

6 Short answers

a. MARKING SCHEME — A · 2

✓ Helped, any one: the shop has a record of every payment; people carry less cash, so less is lost or stolen; a tiny stall that could never afford a card machine can take payments.
✓ Harmed, any one: thieves stick their own QR code over a shop's, or ask people to "scan to receive" money; people with no smartphone or wallet find it harder to pay; a payment fails when the signal or the battery does.

b. MARKING SCHEME — U · 3

✓ Replace, with an example: automatic exchanges replaced the telephone operators (or electronic computers replaced human computers).
✓ Change, with an example: ATMs count the cash, so bank tellers spend more time on loans, problems and advice.
✓ Create, with an example: phone repairers, app developers, delivery riders for apps.

c. MARKING SCHEME — A · 3

✓ He started as an individual with an idea.
✓ The work was done by a community: villagers, volunteers from abroad and donors (later the Nepal Wireless Networking Project).
✓ No company did it because it didn't look profitable: few customers with little money, steep hills, no electricity grid.

7 Long answer

ANSWER

Access needs five things together, and a phone in the house gives only the first:

1. **A device:** the household phone may belong to one person, often a man, or be away in the city; it may be a basic phone with no internet.
2. **A connection:** in many villages the signal is weak or missing, and there may be no electricity to charge it.
3. **Money:** data packs cost a lot for a poor family, so the phone is often out of data.
4. **Skills:** someone who never learned, often an older person, can't use the apps.
5. **Language and ability:** apps mostly in English or Nepali don't serve speakers of other languages; a person who is blind or can't use their hands needs an app designed for them.

The survey numbers agree (as of MICS 2024–25): about 82 in 100 households had internet at home, but in the poorest fifth only about half the people aged 15 to 49 had used the internet in three months.

MARKING SCHEME

✓ Access needs five things together (a device, a connection, money, skills, apps in your language and for your body); a phone in the house gives only the first.

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✓ The household phone may belong to one person (often a man), be away in the city, or be a basic phone. A · 4

✓ The signal may be weak, there may be no electricity to charge it, or no money for data.

✓ Someone may lack the skills, or the apps may not be in their language or work for their body (a person who is blind).

8 Think

ANSWER HA · 2

Mostly yes. A ramp cut into a footpath was made for wheelchairs but helps parents with prams, porters and people with suitcases. Captions were made for people who are deaf but help everyone on a noisy bus or with the sound off. Large, dark text helps people with weak eyes and everyone reading in bright sunlight. It isn't always free, though: making an app in several languages, or offering text messages too, costs time and money, so designers must choose.

MARKING SCHEME

✓ One example of something made for people who need it, that helps everyone (a ramp, captions, large dark text, a typing machine, audiobooks).

✓ A second example, with who else it helps.

9 Activity: Check an app for everyone

(not marked)

WHAT STUDENTS SHOULD FIND

Many apps fail at least one check: words cut off when the text is large, English-only menus, a red or green dot with no words, or pages that won't open on a weak signal. A bank or wallet app is often better than a school website, because its makers have many users to keep. Each change a student suggests should say who it would help: grandparents, people with weak eyes, people who read only Nepali, people on a small data pack.

Marks by level	Knowledge	Understanding	Application	Higher ability	**Total**
Marks	6	10	12	2	**30**

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