Unit 10 · Computing and the Law

ANSWER KEY · FOR TEACHERS

Full marks 34

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. Act
2. policy
3. rationale
4. proportionate
5. unauthorized access
6. fair dealing
7. copyleft
8. proxy

Each carries 0.5 mark. **K · 4**

2 Multiple choice

i. **b.** Section 45: using a computer beyond the permission given **A · 1**

Section 45 covers using a computer "contrary to" the permission given, not only breaking in from outside. Permission to use the sales program for his work is not permission to take customers' data for himself. Selling their numbers also breaks the Privacy Act, which you meet below.

ii. **c.** The right to return it, and either another kurta of the same price or her whole payment back, tax included. **A · 1**

What arrived is not what the page described, so Section 10 applies whatever the shop's own policy says: the shop must take it back without conditions, and Anu chooses between a replacement of the same price and a full refund with tax. (Fines go to the government, not the buyer; for compensation she would use the Consumer Protection Act.)

iii. **c.** No: cameras are never allowed in a changing room, notice or not. **U · 1**

Section 20 allows CCTV in public places with a notice, but names three places where a camera may never go: a toilet, a bathroom and a changing room. A notice doesn't change that.

iv. **c.** She may sell it, but she must give buyers the app's whole source code, under the GPL. **A · 1**

The GPL allows selling. What it asks is that whoever shares a program built on GPL code shares its source code too, under the same license, so the buyers are free to study, change and share it. Under a permissive license such as MIT, she could have kept her own code secret.

v. **b.** Yes: if past decisions were unfair, it learns them, and features such as district or address can act as proxies. **U · 1**

A data-driven model learns the patterns in its training data, including the unfair ones. Leaving out a column doesn't remove it if other features stand in for it (proxies). That is why such models must be tested for how they treat each group.

3 True or false

i. ✓ **True**
ii. ✗ **False:** It still belongs to its author; with no license, it is all rights reserved.
iii. ✓ **True**
iv. ✗ **False:** Nothing in it makes a company tell them; the GDPR does.
v. ✓ **True**
vi. ✗ **False:** It is a policy, a plan; misuse is punished under Acts such as the Privacy Act and the Electronic Transactions Act.

Each carries 0.5 mark. **U · 3**

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4 Which law protects it?

ANSWER **A · 3**

What happened	Which Act (and section)?
Sabin logs in to his sister's account with the password he saw her type.	Electronic Transactions Act, s. 45 (unauthorized access)
A worker who was sacked deletes the shop's customer records to cause it a loss.	Electronic Transactions Act, s. 46 (damaging data)
A brother forwards his sister's emails to his friends without asking her.	Privacy Act, ss. 13–14 (messages)
A neighbor flies a drone over a house to see what happens in its courtyard.	Privacy Act, s. 22 (drones)
An online shop's page gives no name, address or PAN number.	Electronic Commerce Act, s. 4 (say who you are)
Someone takes money out of people's wallets with logins stolen through a fake page.	Electronic Transactions Act, s. 52 (computer fraud)

MARKING SCHEME

- ✓ The Electronic Transactions Act for the login (s. 45) and the deleted records (s. 46).
- ✓ The Privacy Act for the emails and the drone; the Electronic Commerce Act for the shop.
- ✓ The Electronic Transactions Act for the wallets (s. 52). Give the half mark for the right Act, even without the section.

5 What does it print?

MARKING SCHEME **A · 3**

- ✓ `chart library` and `Nyatapola photo`: allowed, in the order of the dictionary.
- ✓ `temple photo` not if we sell, `date check from a blog` ask the author first, `map library` only if we publish our code.
- ✓ ii. The blog's code: no license means all rights reserved, so ask its author (or write your own).

6 Short answer

MARKING SCHEME **A · 3**

- ✓ No: copyright starts by itself, and with no license every right stays with the writer.
- ✓ Reading it is fine; copying it into an app he shares needs permission.
- ✓ What he can do: ask the writer (and credit them), use a library whose license allows it, or write his own from the idea.

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7 Write a program

ANSWER **A · 4**

```
students = [("Asha", 92, 58), ("Bikash", 88, 45), ("Chameli", 74, 12),
            ("Dawa", 70, 9), ("Gita", 61, 8)]
scored = []
for name, marks, income in students:
    extra = 0
    if income < 50:
        extra = 2 * (50 - income)
    scored.append((marks + extra, name))
scored.sort(reverse=True)
for score, name in scored:
    print(name, score)
```

OUTPUT

```
Dawa 152
Chameli 150
Gita 145
Bikash 98
Asha 92
```

Other right ways: `max(0, 50 - income)` for the extra, or `sorted(students, key=..., reverse=True)` with a function that works out the score.

MARKING SCHEME

- ✓ A loop over the students, taking each one's name, marks and income.
- ✓ The extra points: 2 × (50 − income) below 50, else 0.
- ✓ Each score kept with its name, and the list sorted highest first.
- ✓ Prints each name and score: Dawa 152, Chameli 150, Gita 145, Bikash 98, Asha 92.

8 Long answer

ANSWER **A · 4**

No. Nepal's Act gives real rights, but in practice it protects less:

- **No independent office**: the EU has data protection authorities that check companies and act on complaints; in Nepal a person must go to court themselves, within three months. Many harms are never noticed or brought to court.
- **Small fines**: the GDPR can fine up to €20 million or 4% of worldwide yearly income; Nepal's Act, Rs 30,000. A big company won't change its ways for a small fine.
- **No duty to report a leak**: under the GDPR, a leak must be reported to the regulator within 72 hours, and to the people when they are at high risk. In Nepal, people may never learn their data was taken.
- (Also: the GDPR gives rights to see and delete one's data, which Nepal's Act doesn't give in general.)

Each matters because rights protect people only if someone checks that they are respected, and if breaking them costs more than obeying.

MARKING SCHEME

- ✓ Disagrees: the Act gives real rights, but protects less in practice.
- ✓ No independent office: in Nepal the person harmed must find out and go to court within three months.
- ✓ Small fines: Rs 30,000, against €20 million or 4% of worldwide yearly income, so a big company won't change.
- ✓ No duty to tell people when their data leaks (the GDPR: 72 hours to the regulator); or no general right to see and delete one's data.

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9 Algorithmic bias

MARKING SCHEME U · 3

- ✓ It learns from past decisions that were unfair, such as a hiring model trained on a company that mostly hired men.
- ✓ Proxies: a feature left in, such as district or address, stands in for one left out, such as caste or wealth.
- ✓ An example for each (or data that leaves a group out, such as a face model trained mostly on one group).

10 Think

ANSWER HA · 2

High risk: it decides about students' education, so in the EU it would have to be tested, use good data, keep records and have a person able to step in. Before a school in Nepal used it, I would ask how often it marks wrongly, and for whom (does it mark answers in Nepali, or written in a less polished way, worse?), whether it was tested on Nepali students' papers, and whether a teacher sees each decision and a student can appeal. Nepal has no AI law yet, so the school would have to ask these questions itself.

MARKING SCHEME

- ✓ High risk, because it decides about education (a person's chances), with a reason.
- ✓ At least two sensible checks: tested on students like ours, mistakes by group, a teacher checking each decision, a way to appeal.

11 Activity: Everything in your app has a license

(not marked)

WHAT STUDENTS SHOULD FIND

Free and private: 3 not allowed (the map library, GPL, while the code is private; the recolored drawing, ND, no changes; the blog's code, no license). Free and open: 2 (the drawing and the blog's code). Sold and private: 4 (those three and the temple photo, NC, not for money). Sold and open: 3 (the photo, the drawing and the blog's code). The drawing and the blog's code are never allowed as they are, so leave them out; then free with the code published under the GPL keeps the other four pieces, and every plan must keep their credits.

Marks by level	Knowledge	Understanding	Application	Higher ability	**Total**
Marks	4	8	20	2	**34**

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