1.2 Optional themes: knowledge and technology, knowledge and language

Name: _____ Class: _____ Date: _____ **Total: 30 marks**

KEY WORDS knowledge and technology • knowledge and language • algorithm • loaded language • translation

Objective

Study two **optional themes**: **knowledge and technology** (how technology changes what and how we know) and **knowledge and language** (how language shapes and limits knowledge).

You must be able to:

- explain how technology extends and changes knowing
- evaluate trust in algorithms and AI as sources of knowledge
- explain how language shapes thought and classification
- explain how translation can change knowledge
- use real-life examples for each theme

1 Key knowledge and worked examples

■ Knowledge and technology

Technology **extends** our senses (telescopes, microscopes), **stores** knowledge (libraries, the internet), and increasingly **produces** knowledge claims (search rankings, AI systems). Questions: Can we trust what we cannot check? Who designs the tools? Does easy access to information make us know more, or only *feel* we know more?

Example. In 2020 the AI system AlphaFold predicted protein structures with accuracy close to laboratory methods. It is useful, but scientists cannot always see *why* a prediction is right: knowledge without full explanation.

■ Knowledge and language

Language gives us **categories**: words divide the world (colours, kinship). The **Sapir–Whorf hypothesis**: language influences how we think (strong forms are rejected by most linguists; weak forms have some support, e.g. studies of colour discrimination). **Loaded language** frames knowledge: "freedom fighter" or "terrorist". **Translation** can lose or change meaning.

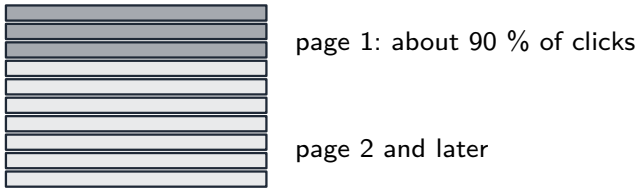
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> **Worked example.** Russian has separate basic words for light blue (*goluboy*) and dark blue (*siniy*). In a 2007 study, Russian speakers were faster at telling apart two blues that fall across this boundary, which suggests language can affect perception slightly.

2 Practice

2.1 Explain how technology can **extend** human knowledge, with **one** example. [2]

2.2 A search engine shows 10 results on the first page; a study finds about 90 % of clicks go to the first page. Explain what this means for **who decides** what we know, and suggest **one** safeguard. [3]



2.3 Explain the **Sapir–Whorf hypothesis**, and the difference between its strong and weak forms. [4]

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2.4 Evaluate the claim that knowledge produced by AI is less trustworthy than knowledge produced by humans. [6]

3 Exam-style questions

3.1 *(Essay-style.)* "Language does not just describe knowledge; it shapes it." Discuss with reference to **one** optional theme and **one** area of knowledge. [10]



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3.2 Explain how **loaded language** can affect knowledge in news reports, with an example. [5]

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