

**COMP 106**

**Software Development in Context**

**This paper has 4 sections**

**Attempt ALL questions in ALL the sections**

**2 hours**

## **Section A**

Each question in this section carries **1 mark**.

1. What was MEMEX?
2. What is CERN and why is it significant in the history of WWW?
3. What is the UK equivalent of ANSI?
4. What was Arpanet?
5. What does the acronym "URL" stand for?
6. Distinguish clearly between Internet and WWW.
7. What is the basic unit for information exchange on the WWW?
8. What is ISO?
9. To which UK organisation would software theft be reported?
10. Which UK Act of Parliament makes it illegal to loan software in order that a copy be made of it?
11. What is the usual length of time that a copyright can last?
12. Within the context of moral rights, what is meant by a "right of paternity"?
13. What is the BCS?
14. What is the US equivalent organisation to the BCS?
15. Name one piece of UK legislation explicitly sponsored by the BCS.

## **Section B**

Each question in this section is worth **3 marks**.

16. State the three sections of the Computer Misuse Act of 1990.
17. Give three ways in which a Software Audit can be of value to a large organisation.
18. State three of Mason's ethical issues in I.T.
19. Give three examples of what could be classed as 'prior disclosures' within the context of patent law.
20. Name three types of personal sensitive data as defined within the Data Protection Act of 1998.

### Section C

For questions 21-23, study the following URL and answer the questions

<http://www.iso.ch/infoe/intro.htm>

- 21. On what type of server is the resource mounted? (1 mark)
- 22. What is the scheme? (1 mark)
- 23. Name three further types of scheme other than the one listed above. (3 marks)

For questions 24 and 25, study the following statement from an UK Act of Parliament:

*"An Act to make new provision for the regulation of the processing of information relating to individuals, including the ..."*

- 24. Name this Act. (1 mark)
- 25. State the four areas of regulation of the processing of information that it includes. (4 marks)

## Section D

The questions in this section carry **15 marks** each

26. This question is in 4 parts (a) - (d)

- (a) What is an interface in Java, and when is it correct to say that a class implements an interface? (2 marks)
- (b) Explain how interfaces are used in the Java AWT Event-Handling model to allow objects to respond to user-generated events such as mouse-clicks. (7 marks)
- (c) Briefly describe how interfaces are used by Java's **Thread** class. (2 marks)
- (d) What is meant by the Java keyword **synchronized**, and what is this keyword's intended use? (4 marks)

27. This question is in 4 parts (a) - (d)

- (a) In the context of user-interface design, what is meant by *syntactic knowledge* and *semantic knowledge*? Using these concepts, characterise the following categories of users:
  - expert users;
  - knowledgeable, infrequent users;
  - novice users. (5 marks)
- (b) What is meant by an *affordance*, and how is this notion relevant to user-interface design? (2 marks)
- (c) Briefly describe an example of the use of metaphor in designing a user-interface. Say why you think your example is particularly effective or ineffective. (4 marks)
- (d) Explain what is meant by *direct manipulation*, and give an example of how it can be used in user-interface design. (4 marks)