PRIFYSGOL ABERYSTWYTH UNIVERSITY

SEMESTER TWO 2026

COMPUTER SCIENCE

CS38220 : PROFESSIONAL ISSUES IN THE COMPUTING INDUSTRY

Time allowed: **2 HOURS**

Answer all **SIX** questions

All sections carry equal marks.

YOU MAY BRING THE FOLLOWING INTO THE EXAMINATION:
UP TO 3 SHEETS OF NOTES ON A4 PAPER (WHICH MAY BE DOUBLE-SIDED). THERE ARE NO ADDITIONAL RESTRICTIONS ON CONTENT OR FORMATTING OF THESE NOTES.
NO ELECTRONIC DEVICES.

CALCULATORS ARE NOT PERMITTED.

STUDENTS MAY SUBMIT ANSWERS TO THIS PAPER IN EITHER WELSH OR ENGLISH

Once seated, students may complete the front cover of the answer book(s) and the attendance slip ONLY.

DO NOT TURN THE EXAMINATION QUESTION PAPER OVER UNTIL INSTRUCTED TO DO SO.

This assessment consists of three sections: A) **Management and Engineering**, B) **Law**, and C) **Business**. You should answer **all six** questions. Each **section** is marked out of 33, with a total of 99 marks for this assessment.

Section A - This section relates to **Management and Engineering**

1. You work in the IT department of a large UK company. There are plans to open a division of the company in New Zealand. [17 marks]

   a) Discuss the risks that this might pose to the company and how they might be reduced. (10 marks)

   b) Consider how this expansion might require changes to the structure of the company. (7 marks)

2. A friend says "Our modern reliance on computers is making us less environmentally friendly than we were in the past." Provide reasoned arguments for and against this point of view, and explain whether, on balance, you agree. [16 marks]

Section B - This section relates to **Law**

3. You are an employee of a university who has been tasked with organising a conference. You need to record information about the conference delegates. You also need to organise the conference dinner, an important networking opportunity. [17 marks]

   a) Identify the data controller, data processor and data subjects in this scenario. (5 marks)

   b) Give TWO items of non-sensitive personal data that you might need to record about the delegates. (4 marks)

   c) Give an item of sensitive personal data that you might need to record. Explain why you need to keep it and why it is sensitive. (3 marks)

   d) You have accidentally left a USB stick containing the data on public transport, and you inform your employer. What should the university do? (5 marks)

4. Your company has developed RainSense - a smart umbrella that opens automatically when it detects rain and sends weather information to the user's phone. It consists of several unique components: a new humidity sensor to trigger the mechanism, a

smartphone app, and user documentation. There will also be unique branding, such as a logo and the name “RainSense” itself.

[16 marks]

a) How could patent law protect the various components of this invention, and what limitations could apply? (8 marks)

b) How could other laws protect the intellectual property involved in this product? (8 marks)

Section C - This section relates to **Business**

5. Four friends wish to start a business building water sensors for monitoring sewage and other pollutants in rivers. Building these sensors will require considerable initial costs.

[17 marks]

a) What type of business would best suit this business? Explain how the number of people involved and the up-front costs influence your decision. (8 marks)

b) What methods could the business use to raise the necessary initial funding before they start making money from sales? (5 marks)

c) Give TWO fixed assets and TWO current assets that this particular business might hold. (4 marks)

6. This question uses the same scenario as the previous question: a business building water sensors. [16 marks]

a) The friends need to create a business plan. Give TWO purposes of the plan, and TWO things it must include. (4 marks)

b) Describe the difference between sales and marketing, and give ONE example of a sales activity and ONE example of a marketing activity relevant to the water sensor business. (4 marks)

c) In this particular scenario, the business may wish to sell to large organisations (e.g. water companies and local government). In order to do this, they may wish to become an Approved Contractor for these organisations. What would they need to demonstrate and are there any risks? (4 marks)

d) The business will need to produce financial statements. Give two different kinds of statement, and describe how they differ. (4 marks)

END OF PAPER