

UNIVERSITY OF PORTSMOUTH

FACULTY OF TECHNOLOGY

Department of Electronic and Computer Engineering

M591 – Technology Exploration

U13127

Date: 29 January 2008

Time: 2 hours

INSTRUCTIONS

Write your student ID number clearly on page 2.

Write your answers to all 5 questions in this examination paper.

For each question, indicate your answer to **part A** by placing an “X” in the box next to the appropriate boxes on the answer sheet. For each question, write your answer to **part B** by writing in the appropriate space in this examination paper.

Handwritten notes are permitted with this examination.

Calculators permitted are:

Casio FX 85WA

Casio FX 83WA

Casio FX 85MS

Examiners:

Professor Zhili Sun, Mr Chi Nguyen

Student ID Number

Question 1A. Place an "X" in the box next to 3 terms that are most directly related to authentication claims. [6 marks]

<input type="checkbox"/>	statement	<input type="checkbox"/>	adversary
<input type="checkbox"/>	attribute	<input type="checkbox"/>	cover
<input type="checkbox"/>	sensitivity	<input type="checkbox"/>	identifier
<input type="checkbox"/>	threat	<input type="checkbox"/>	allocation
<input type="checkbox"/>	integrity	<input type="checkbox"/>	initialization

Question 1B. Describe a specific example of a multifactor authentication system that uses all of the terms you selected in question 1A. Explain the primary purpose for using a multifactor authentication system. [14 marks]

Question 2A. Place an "X" in the box next to 3 terms that are most directly related to types of authentication infrastructure. [6 marks]

<input type="checkbox"/>	mutual	<input type="checkbox"/>	parallel
<input type="checkbox"/>	anonymous	<input type="checkbox"/>	decentralised
<input type="checkbox"/>	independent	<input type="checkbox"/>	complex
<input type="checkbox"/>	distributed	<input type="checkbox"/>	federated
<input type="checkbox"/>	centralised	<input type="checkbox"/>	reversible

Question 2B. Describe a specific example of an authentication system for each of the terms you selected in question 2A. Which of your examples would provide the best system performance? Which would provide the best privacy protection? Which would operate at the lowest cost? Provide a reason for each of your selections. [14 marks]

Question 3A. Place an "X" in the box next to 3 terms that are most directly related to the use of patents. [6 marks]

<input type="checkbox"/>	advertisement
<input type="checkbox"/>	confidential
<input type="checkbox"/>	monopoly
<input type="checkbox"/>	secret
<input type="checkbox"/>	image

<input type="checkbox"/>	global
<input type="checkbox"/>	symbol
<input type="checkbox"/>	article
<input type="checkbox"/>	limited
<input type="checkbox"/>	utility

Question 3B. Use all of the terms you selected in question 3A to define patents. Describe two methods that a company could use to earn revenue from a patent without directly manufacturing tangible or physical products. Provide an example with each method. [14 marks]

Question 5A. Place an "X" in the box next to 3 terms that are most directly related to examples of steganography. [6 marks]

<input type="checkbox"/>	null cipher	<input type="checkbox"/>	signature
<input type="checkbox"/>	hash value	<input type="checkbox"/>	random dots
<input type="checkbox"/>	invisible ink	<input type="checkbox"/>	binary grille
<input type="checkbox"/>	semagram	<input type="checkbox"/>	symmetric cipher
<input type="checkbox"/>	asymmetric cipher	<input type="checkbox"/>	message digest

Question 5B. For each term you selected in question 5A, indicate the type of steganography technique used and provide an advantage and disadvantage of that technique. [14 marks]