## PRINCE OF SONGKLA UNIVERSITY FACULTY OF ENGINEERING

Midterm Examination: Semester 1 Academic Year: 2010-2011

Subject Number: 241-643 Room: A201
Subject Title: The Internet and its Protocols

Name:	Student Number:	

## **Exam Duration:** 3 hours

This paper has 7 pages (including this page).

- Write the answers in the spaces provided in the examination paper.
- Clearly write your student number in the space provided at the top of each page. Write your name and student number in the spaces provided on this cover page.
- There are 70 marks total for this exam.

  This will contribute 20% of the course total.

## **Authorised Materials:**

Anything the student can carry (except communication devices.)

## **Instructions to Students:**

- Attempt all 5 questions.
- Anything illegible is incorrect.
- Answer briefly where possible, essays are **not** required. There is no need to use all of the space provided for each answer!
- The marks allocated for each question are shown next to that question.
- Answer questions in English. Good English is **not** required.

For marker's use only.

1	2	3	4	5	Total

241-643	/ Inter	net and its Protocols	Student Number:		
Question	1.		(30 marks)		
upper bound upon the rate a			ch as TCP, and TFTP (and others) imposes an at which data can be exchanged, which simply f the path between the systems communicating		
	A)	Explain what it is about the what factors influence its	e protocols that causes this spee value.	ed limit, and	
				[10 marks]	
				<del></del>	
		-		1	
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	B)	Explain how a protocol de which the protocol can tra	signer calculates the maximum nsfer data.	rate at	
				[5 marks]	
	_			<del>-</del>	
				****	

Student Number:	rnet and its Protocols	643 / Interi
ossible (and practical) to a protocol to allow eased?  [5 marks]	What modifications a the speed limit to be i	C)
etely, and allow the maximum speed of a	To avoid this limit co	
ed only by the available bandwidth, some ocol will either need to be done in totally bed completely. What features are those,	connection to be cont other features of the I	D)
	<u></u>	

241-643 / Internet and its l	Protocols	Student Number:
		(20 m m/m)
Question 2.		(20 marks)
considerations tl	nat the protoco	of made to a protocol, explain the oldesigners would investigate with regard to om the earlier version of the protocol to the
That is, how can of the change up		e upgraded in a way that minimises the impact ag network?
		nat you are aware of that have been revised lon l, and explain how those protocols were
		· · · · · · · · · · · · · · · · · · ·
		130 300

241-643	/ Internet and its Protocols	Student Number:
Question	n 3.	(10 marks)
	-	ssion Control Protocol (TCP) uses a Finite specify the operations of opening and
	Explain the advantages of using use TCP as an example.)	an FSM in a protocol specification (you ca
	Contrast the use of the FSM with	n other specification methods.
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241-643 / Internet and its Protocols	Student Number:	
	(5 <u>I</u> )	
Question 4.	(5 marks)	
An IP datagram arrives at its destin Hop Count (for IPv6) field containing	nation with the Time to Live (for IPv4) or ing the value 255.	
What conclusion(s) can the receiving node draw from this fact, and		
You can assume either IPv4 or IPve question, other than the name of the version is in use.	6 for your answer. Nothing in this se header field, depends upon which IP	
· · · · · · · · · · · · · · · · · · ·		

241-643	/ Intern	et and its Protocols	Student Number:
Question	When networ	numbers are allocated for purpos rk, some of the available number will in practice not be used – that	s, numbers which were available to be
_	A)	Explain why it is not possible in numbers.	practice to use all the available [3 marks]
	B)	What effect does having multiplupon these effects?	le levels of assignment hierarchy have [2 marks]