

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Final Examination: Semester 1

Academic Year: 2012-2013

Date: October 8, 2012 (2555)

Time: 13:30 – 16:30

Subject Number: 242-643

Room: Robot

Subject Title: The Internet and its Protocols

Name: _____ Student Number: _____

Exam Duration: 3 hours

This paper has 8 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 80 marks total for this exam.

Authorised Materials:

- Anything the student can carry (except communication devices.)

Instructions to Students:

- Attempt all 6 questions .
- Anything illegible is incorrect.
- Show all calculations, not just the final result.
You may approximate answers, precise numerical accuracy is not required.
- 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	6	Total

- B) What is the procedure followed by a node that receives a CGA and needs to validate the authenticity of the address.

[10 marks]

- C) After a CGA has been validated, explain what the validating node now knows, and what it does not know.

[5 marks]

Question 4.

(10 marks)

- A) What are the technical, and practical, differences between the **TTL** header field in IP version 4, and the **Hop Count** header field in IP version 6?

[5 marks]

- B) Why was this field changed as described in your answer to the previous part of the question?

[5 marks]

Question 6.

(10 marks)

- A) Explain why IP fragmentation should be avoided wherever possible. [4 marks]

- B) How do nodes avoid use of IP fragmentation? [3 marks]

- C) Despite the reasons for avoiding use of IP fragmentation, it is still sometimes required. Explain the circumstances when fragmentation cannot be avoided. [3 marks]
