Université d'Ottawa
Faculté de génie

uOttawa

L'Université canadienne
Canada's university

University of Ottawa
Faculty of Engineering

GNG4170 – Engineering and the Law

Final Examination

April 16, 2007

GNG4170 – Engineering and the Law

Final Examination - April 16, 2007 – 3 hrs, closed book

Q1 Answer <u>one</u> of (a) or (b) (10 marks total)

(a) (i) discuss how engineering profession is "self-regulating" (5);

(ii) what is significance of engineer's seal? Discuss appropriate use of the seal (5)

(b) (i) Identify 4 types of licences granted by the PEO. Indicate which of the licence holders is a "P.Eng." and which are "members" of the PEO (5)

(ii) Explain how "enforcement" is different from "discipline" and briefly identify two examples of "enforcement" by the PEO (5)

Q2 Briefly define/explain <u>five</u> of the following terms (5 marks each / 25 total):

(a) contra proferentum

(b) sole proprietorship

(c) vicarious liability

(d) patent

(e) elements of an enforceable contract (list only)

(f) discoverability principle

(g) statutory holdback

Q3 Answer "True" or "False" (only) to <u>each</u> of the following 6 statements, *in order*, and <u>then cross one of your answers out in your answer booklet</u> (leaving 5 to be marked) (1 mark each / 5 total)

(a) For unintentional torts, liability always depends upon fault being found.

(b) For civil actions in Ontario, both arbitration and mediation are alternatives to the normal court process (leading from a statement of claim being issued, to a final decision by the Courts).

(c) Engineers must carry professional indemnity insurance when working for clients.

(d) A party who has fundamentally breached a contract cannot rely on an exemption clause.

(e) If X has given a fraudulent misrepresentation to Y, it would be possible for Y to either: (i) sue X for damages for the tort of deceit; or (ii) sue Y for damages for breach of contract.

Q4 answer <u>one</u> of (a) or (b) (10 marks total)

(a) An electrical engineer, Pi, hired by an Ottawa firm has the following clause in her contract: "Upon termination of employment, the employee agrees not to practice ~~mechanical~~ engineering, anywhere in the province of Ontario, for 6 months". Wanting to be closer to her family, she decides to quit this job and seek similar employment in Toronto. Pi finds a similar electrical engineering position in Toronto, approximately three months after having left the Ottawa firm. The former employer brings a lawsuit, requesting an injunction. Discuss the relevant legal principle(s) and predict a likely outcome.

(b) ABC was selected as the winning tenderer in a bidding competition. ABC then realized it made a mistake in its bid - someone working for ABC had mistakenly copied a figure from a calculation sheet before transferring the (wrong) information to the tender that was submitted. ABC *now* wants to withdraw its bid. The information package, provided by the owner indicated that a $300,000 deposit must accompany each bid, and that if the winning bidder refused to sign the construction contract, for any reason whatsoever, that the owner would be entitled to accept the next-lowest tender and either: (i) keep the tender deposit; or (ii) sue for the difference between the winning bid and the next lowest bid. Explain the relevant legal principles and predict a likely outcome in the case. <u>Do **not** refer to the *Belle River* decision</u>.

Q5 (20 marks)

Rho Inc. entered into a contract with Epsilon Industries for the supply of telecommunications equipment. Under the contract, Epsilon would provide the equipment, and Rho would have 8 months to pay the money owing (in equal, monthly installments, to be paid the first day of the month). The contract also provided that if Rho defaulted in any way under the contract, that Epsilon would be entitled to terminate the contract, demand a return of the equipment, and return any monies paid to date (less a $500 administrative charge).

Rho paid the first installment on time, but paid late the second month. Epsilon didn't complain. Rho paid the third installment on time, but then paid the fourth installment late. Again, Epsilon didn't complain.

At a meeting during the fifth month, the president of Epsilon apologized for the late payments, and the president of Rho confirmed that "as long as each monthly payment was paid by the 15th of the month (in which it was due), everything would be fine". This was good news to Rho, as it had irregular cash-flow, and Rho didn't want to have to take a short-term loan to ensure there was no further default under the strict-terms of the contract.

Rho paid the fifth installment by the 15th of the fifth month, and the sixth installment by the 10th of the sixth month. At the end of the sixth month, the presidents of Rho and Epsilon had a meeting, resulting in a bad argument, almost leading to a physical fight.

On the second day of the seventh month, the president of Epsilon wrote an email to the president of Rho indicating that since Rho had not paid the seventh installment by the first of the month (as demanded by the contract), Epsilon was terminating the contract (and *demanding* the return of the equipment, promising to then issue a cheque to Rho for the monies it had paid to date, less the $500 administrative charge).

Was Epsilon entitled to terminate the contract? Discuss the relevant legal principle(s) and predict a likely outcome.

Q6 (20 marks)

World Industries hired an architect to design a new office-complex for its administrative staff. The architect, in turn, subcontracted part of the work to Eng Co., an engineering firm.

Eng Co. attended at the site of the proposed new building, and working within its budget, competed certain tests. It realized, however, that further soils tests should be completed prior to preparing the designs and specifications.

Completed.

Eng Co. contacted the architect, but the architect was extremely unwilling to spend extra money on the additional tests suggested by the Eng Co. Under pressure from the architect, Eng Co. completed the designs and specifications based upon the tests it was able to complete (*i.e.*, not completing the further soils tests).

The new administrative building was constructed, and five months later, structural damage occurred as a cumulative result of the building having slowly sunk into the ground in the north-west corner.

World Industries hired an independent firm to determine the cause of the problem. That firm concluded that additional soils tests had <u>not</u> been completed, and that if they had, these tests would have revealed ground conditions that would have changed the design of the building (specifically, that portion of the design prepared by the Eng Co.).

What liabilities in ***<u>tort</u>*** law arise from the preceding set of facts? Discuss the relevant legal principle(s) and predict a likely outcome.

Negligence!!

Q7 Answer <u>one</u> of (a) or (b) (10 marks)

(a) Lamda has just been hired as chief engineer of a manufacturing facility, located next to a lake. She immediately learns that the company is discharging mercury into the lake, above legal limits. The lake is the source of drinking water for the local town. Lamda realizes that to remedy the situation, the plant would have to be shut down for several months, and many workers would be laid-off (the plant is the town's largest employer). It would also be expensive for the employer to make the necessary changes, and the plant is not very profitable. Keeping in mind the Code of Ethics and Definition of Professional Misconduct, what should Lamda do?

(a) Theta's mechanical engineering job often involves designing devices (for clients) that require a special kind of (expensive) widget (the "X Widget"). In construction of the devices (for clients), Theta often uses X Widgets supplied by Universal Widget Inc. ("UWI"). Keeping in mind the Code of Ethics and the Definition of Professional Misconduct, discuss the significance of Theta owning 100 shares in UWI. UWI has 10,000 outstanding shares. Would your answer be any different if Theta owned 4,000 shares of UWI?

[end of exam]

best wishes for the summer, and the future