

Reference Material

1. Suggested Study Topics - Part "A" - Professional Practice and Ethics
 2. Suggested Study Topics - Part "B" - Engineering Law and Professional Liability
 3. Reprint - "A" - April 19, 2008
 4. Study Notes - "A" - April 19, 2008
 5. Reprint - "B" - April 19, 2008
 6. Study Notes - "B" - April 19, 2008
 7. Reprint - "A" - August 9, 2008
 8. Study Notes - "A" - August 9, 2008
 9. Reprint - "B" - August 9, 2008
 10. Study Notes - "B" - August 9, 2008
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11. Professional Engineers Act (PE Act)
 12. Ontario Regulation 941 (O. Reg. 941) - sections 72. & 77. will be supplied at the exam
 13. By-Law No. 1 (for information only - not on the examination)
 14. Andrews, G. C., *Canadian Professional Engineering and Geoscience*
 15. Marston, D. L., *Law for Professional Engineers*, 4th Edition

PPE Seminar - **Suggested Study Topics** - with some key words - February 2009

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Part "A" - Professional Practice and Ethics - Question 1. For the section references below,

'A' means Professional Engineers Act (PE Act), 'R' means Ontario Regulation 941 (O. Reg. 941)

Definition - A 1. (13th item) - practice of professional engineering - acting, safeguards, principles

PEO objects - A 2.(3) - principal object - regulate the practice, serve, protect

- A 2.(4) - additional - standards of knowledge, practice, ethics, public awareness, other duties

PEO main functions -

A 12.(1), A 12.(2) - enforce requirements for licences and Certificates of Authorization (C of A)
as established by the PE Act. Penalties for offences are in section A 40.

A 14., A 18., A 15. - issue licences and C of A's - a C of A is for offering services to the public

A 24., A 28. - receive complaints about competency - process to discipline, if so referred

Requirements / conditions for -

A 14.(1), R 33. - PEng licence - citizen, 18 years, academics, experience, character

A 14.(7), R 44.1.(1) - Provisional - all of A 14.(1) except experience, valid 12 months

A 18.(1), R 42., R 43., R 44. - Temporary - specific work, qualifications, PEng collaborator, 12 mos.

A 18.(1), R 45., R 46. - Limited licence - services specified, technologists' qualifications

A 17., R 47. - Certificate of Authorization - PEng(s) responsible, with 5 years after degree

R 56., R 57., R 60. - Consulting Engineer - PEng, + 5 yrs, 2 yrs independent practice, 5 yrs valid

A 24.(1), A 24. (2) - Complaints committee - consider and investigate, may refer or otherwise act

A 28.(1) et al - Discipline committee - hear and determine allegations, impose penalties

A 32. - Fees Mediation committee - fee disputes; mediate, or arbitrate with consent

A 40.(1), A 40.(3) - Penalties for enforcement - licences and C. of A's.

A 40.(2) - Penalties for leading to the belief - when not holding a licence or seal

R 47.3., R 74. - Liability insurance; conditions for a C. of A. - insurance limits / conditions

R 53., R 72.(2)(e) - Documents prepared or checked - licence holder to sign, date and seal

R 72.(2)(g) - Breach of ethics is not misconduct (proposal to change in 2008)

R 72.(2)(h), R 77.1.v. - Competence - depends on judgment of individual practitioner

R 75. - Advertising - professional, factual, without criticism, without seal reference

R 77.5. - Work other than employer - status as employee, limits, inform employer

A 18.(5) - Temporary or Limited licence holder - not a member of PEO (but Temporary is a PEng)

A 40.(2) - Provisional or Limited licence holder - not a PEng (by 'inference' from this sub-section)

Part "B" - Engineering Law and Professional Liability - Question 1.

Page number references as noted in columns, are from the text book, 3rd or 4th edition.

<u>3rd</u>	<u>4th</u>	
2	2	Common law - 'judge-made', generally based on precedents
20	20	Director's standard of care - act with prudence for best interests
(n/a)	31	Dispute Review Board (DRB) - selected before project start
46	52	Vicarious liability - employer responsible for actions of employee
49	55	Concurrent tortfeasors - 2 or more parties found liable in a tort case
58	64	Defamation - false public statement (libel, slander) to damage a reputation
(n/a)	71	Limitation periods - 2 or 15 years, windows within which suit must be filed
66	71	Discoverability concept - when cause for suit is found, time window begins
75	79	Contract 5 elements - offer accepted, intent, consideration, capacity, lawful
88	92	Gratuitous promise - verbal, no money, but depending on it, may give effect
88	92	Equitable estoppel - to avoid contract rights where result would be inequitable
103	107	Statute of frauds - prevent losses by fraudulent verbal testimony
107	109	Fraudulent misrepresentation - party deceived may rescind contract
108	110	Duress - threatened violence to sign a contract, may be repudiated
109	111	Economic duress - pressure to accept illegal contract amendments
111	113	Undue influence - domination of will by another, may be repudiated
121	121	Contract A - formed by submitting a bid, then a Contract B when signed
128	136	Rule of contra proferentum - in ambiguity, against party that drafted clause
128	136	Parol evidence rule - verbal not allowed, unless for condition precedent
134	142	Discharge by frustration - radical change in circumstances, e.g., fire
138	146	Repudiation - one party stops participating, other can claim damages
140	148	Indirect damages - losses beyond control, e.g., interruption of supply
141	149	Duty to mitigate damages - plaintiff must act to minimize loss
141	149	Liquidated damages - cost of contractor failure, must be genuine pre-estimate
142	150	Quantum meruit - 'as much as is reasonably deserved', for contractor relief
144	152	Specific Performance - court award where regular damages would not suffice
169	179	Secret commission - bribe to one party to defraud the other party
227	235	Alternative dispute resolution - without recourse to courts, use ADR mediator
243	249	Statutory Holdback - % of contract price held until substantial performance
277	285	Trade-mark - to distinguish offers by a company from those of others
312	322	Workplace - equal treatment (google on Ontario Human Rights Code)

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL PRACTICE EXAMINATION – April 19, 2008

PART “A” – Professional Practice and Ethics

This examination comes in two parts (**Part “A” and Part “B”**). Both parts must be completed in this sitting. You will be given a total of **180 minutes** to complete the examination.

Use the correct colour-coded Answer Book for each part, place in the correct envelope and **seal after completed**.

White Answer Book for Part A white question paper.

Coloured Answer Book for Part B coloured question paper.

This is a **“CLOSED BOOK”** examination. **No** aids are permitted other than the excerpts from the 1990 Ontario Regulation 941 covering sections 72 (*Professional Misconduct*) and 77 (*Code of Ethics*) supplied at the examination. Dictionaries are **not** permitted.

The marking of questions will be based not only on academic content, but also on legibility and the ability to express yourself clearly and correctly in the English language. If you have any doubt about the meaning of a question, please state clearly how you have interpreted the question.

All **four** questions constitute a complete paper for Part “A”. Each of the four questions is worth 25 marks.

WHERE A QUESTION ASKS IF A CERTAIN ACTION BY AN ENGINEER WAS ETHICAL OR NOT, A SIMPLE “YES” OR “NO” ANSWER IS NOT SUFFICIENT. YOU ARE EXPECTED TO COMMENT ON THE ACTION OF THE DIFFERENT INDIVIDUALS AND/OR ORGANIZATIONS INVOLVED IN EACH SITUATION.

You should identify where applicable the appropriate clauses in Regulation 941.

Question 1

- (10) (a) Briefly define the practice of professional engineering.
- (5) (b) In order to be designated as a “Consulting Engineer” one must meet a number of requirements. Briefly list three of them. What additional privileges or rights are granted by this designation?
- (10) (c) Professional engineering in Ontario is described as a “self-regulating profession”. What does this term mean? In your answer, briefly describe three different features in the way professional engineering is regulated in Ontario that are consistent with this term.

Question 2

X Pat, P.Eng. was sent by the Canadian firm, Moose International Inc. (Moose), to serve as resident geological engineer in Vega, South Asia. Moose International had been hired by the Vega government to oversee a project being undertaken by another Canadian company, Digger Inc (Digger). The project involved the construction of a 400-Km highway across a mountainous region. Although relatively new to Moose, X Pat, with more than twenty-five years of experience, was given the key assignment of ensuring that contract agreements between the Vegan government and Digger were met.

X Pat's signature on the payroll certifies that the interests of the Vegan government were being served. Almost immediately, X Pat began to experience doubts about the project. The design for the highway, which, as it turned out, was originally done by Moose, called for cutting deep channels---some of them more than 100 metres----through the mountains with cliffs rising sharply on both sides of the road. X Pat was concerned that with the instability of the mountains, it did not appear as if enough geological borings had been taken to identify potential slide areas. X Pat's fears were confirmed, unfortunately, when several slides and other construction accidents occurred killing some workers. Digger asked X Pat to add to the payroll to cover the substantial costs for slide removals.

X Pat viewed the request as one of “padding” and, therefore, not justified by anything in the contract. At first X Pat's position was supported by X Pat's firm; however, with mounting pressure by Digger Inc., Moose International ordered X Pat to add the slide-removal costs to the payroll. X Pat refused to do so, insisting that it would be a violation of the Vegan government's interests which Moose was charged to protect. X Pat was relieved of X Pat's resident engineer's responsibility and was subsequently fired by Moose International.

- (20) Discuss X Pat's actions (10), as well as those of Moose International (5) and Digger (5), in terms of Professional Engineers Ontario's Code of Ethics.
- (5) Is there a recommended recourse that X Pat might pursue in view of the dismissal?

Question 3

Epsilon, P.Eng, has been in the employ of Enterprise Engineering Inc since his graduation from engineering school six (6) years ago. Since obtaining his P.Eng licence, two (2) years ago, he has been discussing with his supervisor, Sigma, P.Eng the possibility of being assigned more challenging projects. Sigma agreed to provide Epsilon with the challenge he is seeking, however to Epsilon the opportunity does not appear to be forthcoming and he has therefore become frustrated.

Epsilon 's engineering potential is well recognized both inside and outside Enterprise Engineering Inc. Consequently, while Epsilon is still waiting to receive the promised challenging assignments at Enterprise Engineering Inc, he learns of an opening at a regular supplier to Enterprise Engineering Inc, Supply Engineering Ltd, through Theta a professional engineer employed at that company. Epsilon is successful in an interview with Supply Engineering Ltd and, upon receiving an offer of employment, submits his resignation with the required two (2) weeks notice to Enterprise Engineering.

Sigma, disturbed by Epsilon 's resignation, asked Epsilon to reconsider. Epsilon advised Sigma that his decision is final, and, although he was asked, did not reveal the identity of his new employer. Yet he continued to negotiate and evaluate bids, including those submitted by Supply Engineering Ltd.

Was it ethical for:

- (7) a) Theta ,P.Eng to tell Epsilon about the opening at Supply Engineering Ltd ?
- (8) b) Epsilon to interview for a position with one of Enterprise Engineering Inc suppliers?
- (10) c) Epsilon not to volunteer to Enterprise Engineering Inc that Supply Engineering Ltd would be his new employer?

Use the Code of Ethics as your guide in answering each part of the above question.

Question 4

Omega, an experienced P.Eng., was recently hired by a WestCoast Engineering to help build the WestCoast's business in Ontario. Omega had been in a non-engineering management position for the past 20 years and was happy to be back into a more hands-on engineering role. WestCoast had the necessary Certificate of Authorization and insurance to work in Ontario.

Omega didn't have much billable work to do and a client asked WestCoast to do a small project that was within Omega's capability and experience. Omega took on the project but before he had done much work project the requirements changed and Omega was requested to conduct an in-depth engineering analysis of alternatives for a new plant. This analysis needed to be completed in a very short time period to allow the client to submit a proposal to their regulatory body for approval within a regulated time period.

Omega had not done this type of analysis for a long time. Not wanting to lose the project and feeling that he could do an acceptable job with some guidance from other experienced engineers in the firm Omega decided to take on the work. Unfortunately the other engineers could not give Omega the support he needed in the very short time available and he completed the analysis on his own under great time pressure. The final report was completed and submitted to the client under Omega's seal and signature.

Omega and the client had testified at a hearing with the regulator that the work was accurate and complete. Shortly after the regulator gave approval to proceed with the plant, Omega found a significant error in his work. The error did not put the public safety at risk but did dramatically alter the financial feasibility of the project. Another decision might have been made with the new information. Omega decided not to inform the client of the error since he was trying to get more work from them.

- (10) (a) Using the code of ethics as your guide, discuss Omega behaviour.
- (10) (b) In addition what should Omega have done at the various stages of this project?
- (5) (c) What obligation did Omega and WestCoast owe to the client

Regulation 941 sections 72. and 77. are supplied at the examination. These sections should be studied carefully before the exam, so comparable situations in the questions are recognized quickly during the exam, and time is used effectively. Each answer should be completed in about 20 minutes.

All references are given here for study purposes. References from 72. and 77. should be given within an answer as far as possible. Other references can be of benefit if remembered, but are not expected.

These notes are illustrative to indicate the possible range of content within an answer.

1(a) The practice of professional engineering is 1) application of engineering principles to 2) reports designs or supervision where 3) procedures include safeguards for life, health or property, PE Act 1.

1(b) Three requirements for designation as a 'Consulting Engineer' are 1) to be a member of PEO 2) to have 5 years professional engineering experience beyond becoming a member and 3) to have 2 years 'independent practice' (e.g., full responsibility for a project in a firm), Reg. 941 section 56.(1). The only additional right is to use the designation "Consulting Engineer", valid for a 5 year term.

1(c) Self-regulating means judgments about competence are made by P.Eng's. Income is from fees only, not government. Regulating features have processes for 1) licensing 2) complaints and discipline and 3) enforcement of restrictions on the use of 'engineer', PE Act sections 12., 14., 15., 24., 28. and 40.

2 X Pat, P.Eng. did the right thing, by refusing to pad the payroll with slide removal costs, thereby acting with devotion to high ideals of personal honour and professional integrity, 77.1.iii. At first X Pat was supported, but later Moose did the wrong thing and caved in to mounting pressure, which is dishonourable, 72.(2)(j). Digger did the wrong thing in asking X Pat to pad the payroll to cover up the cost of slide removals, which was not honouring the contract or being fair and loyal to the client, 77.1.i. X Pat should have reported concerns about the borings to Moose, as soon as doubts were experienced, 72.(2)(c). The work should have been stopped until additional borings had been taken. Lives might have been saved if provision had been made, 72.(2)(b). Having neglected to report, X Pat could be charged with negligence, 72.(2)(a). When engaging a Canadian company it is reasonable to expect Canadian codes and rules will be used, including to protect the workers, 72.(2)(d). X Pat wanted to protect Vegan's interest without deviation, but was overruled by Moose, 72.(2)(f). Moose management must concede the design is below prudent standards, is incompetent, 72.(2)(h), and is deficient in performance of services undertaken, 77.1.v. A redesign should be undertaken based on complete geological borings. Additional costs should be calculated, including the costs of safely removing the existing slides. Perhaps tunnels should be designed for the deep cut areas. Negotiations should be opened with the Vegan government, with a view to an agreement on a revised contract, or even discontinuing the contract, with damages to be paid by Moose, to be fair to this client, 77.1.i. The death of workers as a result of incompetence by the engineers at Moose is a serious matter. The

workers and the government of Vega are 'the public'. X Pat, Moose and Digger should show fidelity to public needs, 77.1.ii., should regard public welfare as paramount, 77.2.i., and thereby be maintaining a positive public regard for Canadians, 77.2.ii. Moose and Digger management should be honest and not be seen as exploiting a less developed country, but should be faithful agents and trustees, 77.3.

Although X Pat would not wish to injure the reputation of another practitioner(s), 77.7.iii., and even though X Pat should ordinarily keep company information confidential, 77.3., if the 'mounting pressure' was by P.Eng's. from Digger (if any) and Moose, this is dishonourable and unprofessional conduct, 72.(2)(j), and should be exposed by X Pat before the proper tribunals in Canada, 77.8.

X Pat's opinions will be clearly founded on adequate knowledge and honest conviction, 77.2.iii.

In view of the wrongful dismissal, X Pat should engage legal advice and sue Moose.

3a) It was ethical for Theta, P.Eng. to tell Epsilon, P.Eng. about the opening at Supply Engineering, especially if Theta knew Epsilon was frustrated at Enterprise Engineering. This is fairness and help to an associate, 77.1.i. and acting with courtesy and good faith toward another practitioner, 77.7.i.

3b) It was ethical for Epsilon to interview with a supplier, as long as the current employer's information is kept confidential, 77.3. There is no direct competition or conflict of interest here. The needs of Enterprise are known to Epsilon and could represent a benefit to both Enterprise and Supply, 77.1.i.

3c) It was not ethical for Epsilon to refuse to identify the new employer. It is important to continue to be loyal to the present employer, while accepting salary for 2 weeks, 77.1.i., and avoid any potential conflict, 72.(2)(i), which may be known to Enterprise management, even though unknown to Epsilon. This could be grounds for immediate termination. It was not ethical for Epsilon to continue to negotiate and evaluate bids from Supply Engineering, because of the potential for prejudicial judgement, 77.4. Epsilon has failed in a devotion to high ideals of personal honour and professional integrity, 77.1.iii. and is open to a charge of unprofessional conduct, 72.(2)(j), before the proper tribunals, 77.8.

4(a) Omega's behaviour is not satisfactory. Omega should not undertake work for which there are not sufficient technical or other resources, 72.(2)(h), or competence to perform the services undertaken, 77.1.v. The loss is, if indirectly, failure to safeguard WestCoast property, 72.(2)(b). Omega must inform WestCoast of the error, and the client, even though the client may not sustain any part of the loss, 77.1.i.

4(b) As soon as Omega was requested to respond to the more stringent requirements, WestCoast should have been involved in a decision, whether to proceed. Apparently Omega did not inform WestCoast Engineering management about the change in requirements. This was disloyalty to the employer and to the client, 77.1.i., and unprofessional conduct, 72.(2)(j). When it appeared other engineers could not give support, WestCoast should have rearranged priorities to ensure support.

4(c) Omega and WestCoast have an obligation to absorb whatever losses are incurred, to recover some of their own high ideals of personal honour and professional integrity, 77.1.iii.

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL PRACTICE EXAMINATION – April, 2008

PART “B” - Engineering Law and Professional Liability

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The marking of questions will be based not only on academic content, but also on legibility and the ability to express yourself clearly and correctly in the English language. If you have any doubt about the meaning of a question, please state clearly how you have interpreted the question.

All **four** questions constitute a complete paper for Part “B”. Each of the four questions is worth 25 marks.

(MARKS)

- (25) 1. Briefly define and explain any five of the following:
- (i) The rule of contra proferentem
 - (ii) The discoverability concept
 - (iii) Five examples of equal treatment employment rights to which individuals are entitled under Ontario's Human Rights Code (list only)
 - (iv) Contract A
 - (v) Holdback under the Construction Lien Act
 - (vi) The essential elements of an enforceable contract
 - (vii) Duress
 - (viii) Secret commission

- (25) 2. An owner/developer (the "owner") entered into a contract with an architectural firm (the "architect") for design and contract administration services in connection with the construction of a ten storey commercial office building.

The building was designed to be entirely surrounded by a paved podium concrete deck used for parking and driving, and the design provided for a parking area below the deck. The podium deck was divided by construction joints and expansion joints placed to allow thermal expansion of the concrete as the temperature changed. The land on which the building was located sloped towards a river so the lower parking deck was designed to be partially open to the outside.

The architect engaged a structural engineering firm (the "engineer"), as the architect's subconsultant on the project. The engineering firm, in its agreement with the architect, accepted responsibility for all structural aspects of construction, and also specifically acknowledged responsibility for the design of the paved podium concrete deck and the parking area below.

Upon completion of the design and the tendering process, the owner entered into a contract for the construction of the project with an experienced contractor who had submitted the lowest bid.

Unfortunately, within two years following construction, a significant number of leaks occurred in the podium deck which resulted in water leaks in the lower parking garage.

The contract specifications had called for a specific rubberized membrane to be installed for the purpose of waterproofing the podium deck. However, during construction, at the suggestion of the roofing subcontractor and without the knowledge of the owner, another asphalt membrane product was substituted for the rubberized membrane product specified. Neither the engineer nor the architect objected to the substitution when it was suggested. The roofing subcontractor had suggested the substitute membrane because it was more readily available and would speed completion of construction. The design engineer and the architect took the position that they would rely on the subcontractor's recommendation.

During the investigation into the cause of the leaks, another structural engineering firm provided its opinion that the rubberized membrane as specified in the contract was a superior product to the substituted membrane; that the substituted membrane was brittle and could fracture or crack under certain circumstances, particularly on podium decks with expansion joints; that the winter temperatures had contributed to the breakdown of the substitute membrane as it became more brittle at colder temperatures; and that the substitute membrane should not have been used over expansion joints on a dynamic surface podium deck. The second engineering firm also expressed the opinion that the designers ought to have taken into account the non-static nature of the deck that featured these expansion joints and should not have accepted the substitute membrane.

Ultimately, to remedy the leaks, the substitute membrane had to be replaced by the rubberized membrane originally specified in the contract.

What potential liabilities in tort law arise in this case? In your answer, explain what principles of tort law are relevant and how each applies to the case.

- (25) 3. A \$30,000,000 contract for the design, supply and installation of a cogeneration facility was entered into between a pulp and paper company ("Pulpco") and an industrial contractor. The cogeneration facility, the major components of which included a gas turbine, a heat recovery steam generator and a steam turbine, was to be designed and constructed to simultaneously generate both electricity and steam for use by Pulpco in its operations.

The contract provided that the electrical power generated by the cogeneration facility was not to be less than 25 megawatts. A liquidated damages provision was included in the contract specifying a pre-estimated amount payable by the contractor to Pulpco for each megawatt of electrical

power generated less than the minimum 25 megawatts specified. Other provisions specified additional liquidated damages at prescribed rates relating to other matters under the contract, including any failure by the contractor to meet the required heat rates or to achieve completion of the facility for commercial use by a stipulated date. However, the contract also included a “maximum liability” provision that limited to \$5,000,000 the contractor’s liability for all liquidated damages due to failure to achieve (i) the specified electrical power output, (ii) the guaranteed heat rate and (iii) the specified completion date. The contract clearly provided that under no circumstances was the contractor to be liable for any other damages beyond the overall total of \$5,000,000 for liquidated damages. Pulpco’s sole and exclusive remedy for damages under the contract was strictly limited to the total liquidated damages, up to the maximum of \$5,000,000. The contract specified that Pulpco was not entitled to make any other claim for damages, whether on account of any direct, indirect, special or consequential damages, howsoever caused.

Unfortunately the contractor’s installation fell far short of the electrical power generation specifications (achieving less than 25% of the specified megawatts) and the heat rate specifications provided in the contract. The contractor was paid \$27,000,000 before the problems were identified on startup and testing. Because of its very poor performance, the contractor also failed to meet the completion date by a very substantial margin. Applying the liquidated damages provisions, the contractor’s overall liability for all liquidated damages under the contract totalled \$4,000,000. Ultimately Pulpco had to make arrangements through another contractor for new equipment items and parts to be ordered and installed in order to enable the cogeneration facility to meet the technical specifications, with the result that the total cost of the replacement equipment and parts reached an additional \$15,000,000 beyond the original contract price of \$30,000,000.

Explain and discuss what claim Pulpco could make against the contractor in the circumstances. In answering, explain the approach taken by Canadian courts with respect to contracts that limit liability and include a brief summary of the development of relevant case precedents.

- (25) 4. A mining contractor signed an option contract with a land owner which provided that if the mining contractor (the “optionee”) performed a specified minimum amount of exploration services on the property of the owner (the “optionor”) within a nine month period, then the optionee would be entitled to exercise its option to acquire certain mining claims from the optionor.

Before the expiry of this nine month “option period”, the optionee realized that it couldn’t fulfil its obligation to expend the required minimum amount by the expiry date. The optionee notified the optionor of its problem prior to expiry of the option period and the optionor indicated that the option period would be extended. However, no written record of this extension was made, nor did the optionor receive anything from the optionee in return for the extension.

The optionee then proceeded to perform the services and to finally expend the specified minimum amount during the extension period. However, when the optionee attempted to exercise its option to acquire the mining claims the optionor took the position that, on the basis of the strict wording of the signed contract, the optionee had not met its contractual obligations. The optionor refused to grant the mining claims to the optionee.

Was the optionor entitled to deny the optionee’s exercise of the option? Identify the contract law principles that apply, and explain the basis of such principles and how they apply, to the positions taken by the optionor and by the optionee.

The text pages as given below, are for study purposes, and are not anticipated in an answer.

Question 1. - note in this question, that only 5 (of the 8 options) are required.

- 1.(i) Rule of contra proferentem - where a contract provision is ambiguous, preference in settlement will be against the party, which drafted that particular provision. Who drafted what should be recorded beforehand; text - 3rd edition, page 128; - 4th edition, page 136.
- 1.(ii) Discoverability concept - defines the beginning of a limitation window, from within which, a suit in tort or contract must be filed. It is a date when a cause for action was first discovered, or ought reasonably to have been discovered; text - 3rd edition, page 66; - 4th edition, page 71.
- 1.(iii) Employment rights - equal treatment regardless of (list only 5 of 14) race, ancestry, place of origin, colour, ethnic origin, citizenship, creed / religion, sex, sexual orientation, age, marital status, family status, record of offences, or handicap; text - 3rd ed'n, pg. 312; - 4th ed'n, pg. 322.
- 1.(iv) Contract A - is formed by submitting a bid. It cannot be withdrawn, otherwise the process is unreliable. The number of Contract A's equals the number of bidders. Only 1 Contract B is formed when a contract is signed; text - 3rd edition, pg. 121; - 4th edition, pg. 121 (same number).
- 1.(v) Holdback under Construction Lien Act - a percentage of a contract price, held back from a contractor(s) for a time after substantial performance, to cover any liens that may be claimed against a project, e.g., 10% for 45 days; text - 3rd ed., page 243 (& following); - 4th ed., page 249.
- 1.(vi) Contract - 5 essential elements - 1) offer made and accepted 2) mutual intent to enter 3) consideration 4) capacity and 5) lawful purpose. If a contract is a bad business deal, the courts will not impose more favourable terms; text - 3rd edition, page 75; - 4th edition page 79.
- 1.(vii) Duress - threatened or actual violence or imprisonment used as a means of persuading a party to enter into a contract. Such a contract is voidable and may be repudiated by the party so oppressed; text - 3rd edition, pages 108 - 109; - 4th edition, pages 110 - 111.
- 1.(viii) Secret commission - a payment, promise, bribe or kickback, to influence the actions of a party to a contract. The purpose is to secretly defraud the interests of the other party. It violates the Criminal Code of Canada, section 426; text 3rd ed'n, pgs. 169 - 170; - 4th ed'n, pgs. 179 - 180.
2. The potential liabilities for excess costs that will arise, are to the architect (TA) the structural engineering firm (SE) the experienced contractor (EC) and the roofing subcontractor (RS). The relevant principles of tort law are 1) a duty of care 2) a breach of that duty, and 3) resulting damage or loss. The purpose of tort law is to compensate an injured party, as far as it is possible to do so with money. The action is in tort because the owner (TO) did not have a contract (privity) with SE or RS. TO could bring an action in contract against TA & EC, unless settled out of court.

continued ... 2

TA, SE, EC and RS all had a duty of care 1) to provide a podium deck roof membrane which would perform under cold temperatures. This duty was breached 2) since a significant number of leaks occurred in the podium deck. There was resulting damage or loss 3) since the substitute membrane had to be replaced by the rubberized membrane originally specified.

Although only responsible for structural aspects, an SE working in this field, should be competent about the characteristics of membranes in a dynamic environment, as well as the EC and the RS. Expert testimony would establish TA and SE should have objected to the substitution.

The potential liabilities for costs are, to TA 30%, SE 30%, EC 20% and RS 20%. They are all concurrent tortfeasors. A relevant case precedent is Unit Farm Concrete vs. Eckerlea Acres.

3. Pulpco could make a claim against the industrial contractor (IC) for excess costs, including lost profits and production delays. Pulpco had paid \$27,000,000 of a contract price of \$30,000,000 and paid another contractor (AC) an additional \$15,000,000 that is \$12,000,000 more than expected to achieve the desired result. Therefore the IC is liable to return \$12,000,000 to Pulpco, which is well above the \$5,000,000 for 'maximum' liability.

This is fundamental breach going to the root of the contract. Based on case history, a clause(s) to limit liability is not enforceable, and \$12,000,000 would have to be paid. The clause may be enforceable if the cause is unknown or there is ambiguity, neither of which is the case here.

Some Canadian courts have allowed enforceability of liability clauses. If the way or construction of determining the amount of money in a limited liability clause is clear and true (meaning it is a genuine pre-estimate of damages) the 'true construction approach' is considered to have taken place, and therefore the clause is enforceable. As a result, the law has changed in this area. In this case IC would be liable only for the calculated liquidated damages of \$4,000,000.

Relevant case precedents are Harbutt's Plasticene vs. Wayne Tank and Pump, where the clause was not enforceable, and Hunter Engineering vs. Syncrude Canada, where it was.

4. No, the optionor (owner) was not entitled to deny the optionee's (contractor's) exercise of the option contract. The contract law principles that apply are 'gratuitous promise' and 'equitable estoppel'. A gratuitous promise was made by the optionor to extend the option period, without being in writing, and without consideration. The optionee was clearly depending on this promise, and continued to perform services as otherwise agreed.

If the optionor persists, the optionee could invoke the principle of equitable estoppel, preventing the owner from returning to strict contractual rights, because to do so, the result would then be unfair and inequitable. A relevant case precedent is Conwest Exploration vs. Letain.

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL PRACTICE EXAMINATION – August 9, 2008

PART “A” – Professional Practice and Ethics

You will be given a total of **90 minutes** to complete this examination.

Use the correct colour-coded Answer Book for each part, place in the correct envelope and **seal after completed**.

White Answer Book for Part A white question paper.

Coloured Answer Book for Part B coloured question paper.

This is a “**CLOSED BOOK**” examination. **No** aids are permitted other than the excerpts from the 1990 Ontario Regulation 941 covering sections 72 (*Professional Misconduct*) and 77 (*Code of Ethics*) supplied at the examination. Dictionaries are **not** permitted.

The marking of questions will be based not only on academic content, but also on legibility and the ability to express yourself clearly and correctly in the English language. If you have any doubt about the meaning of a question, please state clearly how you have interpreted the question.

All **four** questions constitute a complete paper for Part “A”. Each of the four questions is worth 25 marks.

WHERE A QUESTION ASKS IF A CERTAIN ACTION BY AN ENGINEER WAS ETHICAL OR NOT, A SIMPLE “YES” OR “NO” ANSWER IS NOT SUFFICIENT. YOU ARE EXPECTED TO COMMENT ON THE ACTION OF THE DIFFERENT INDIVIDUALS AND/OR ORGANIZATIONS INVOLVED IN EACH SITUATION.

You should identify where applicable the appropriate clauses in Regulation 941.

Question 1

- (5) (a) What is the “Fees Mediation Committee”? Describe its function.
- (5) (b) What is the purpose of the engineer’s seal and when should it be used? What two elements are required to accompany the seal?
- (5) (c) Describe the roles performed by PEO’s Complaints Committee and Discipline Committee.
- (5) (d) Is there any difference between being a member of PEO and holding a licence to practice professional engineering in Ontario? Explain.
- (5) (e) Are there any restrictions on how professional engineering services may be advertised? Explain.

Question 2

FarmFab is a designer and manufacturer of farming equipment.

Recently, Farmer was seriously injured while operating a tractor designed and manufactured by FarmFab. In a letter to FarmFab, Farmer's lawyer claimed that the injury was due to a malfunction caused by a design error by FarmFab's engineering department. The letter threatened that FarmFab would be sued on account of Farmer's injuries.

FarmFab retains you (a Consulting Engineer) as an expert. Your services would be to investigate the failure and to give FarmFab your expert opinion on the cause of the failure. If the case goes to court, you could be called to testify as FarmFab's expert witness. For your services, FarmFab would pay you at an hourly rate. If you are called to testify in court and FarmFab wins the case, FarmFab would pay you a bonus in addition to your hourly rate.

Following your investigation, you conclude that the tractor was not designed properly and that Farmer was injured when certain safety features of the tractor failed to function. You also conclude that it is likely that other farmers could be seriously injured while operating the particular tractor model. You report your conclusions to FarmFab.

Based on your report, FarmFab promptly agrees to pay Farmer \$1 million. In exchange for the payment, Farmer agreed to give up the lawsuit and agreed to keep the payment a secret. The secrecy agreement was very important to FarmFab because FarmFab did not want future tractor sales to suffer from bad publicity.

FarmFab thanks you for your services and pays your fee.

- (20) (a) Is there anything else you should do?
- (5) (b) Please comment on the appropriateness of the fee structure according to which you would be paid.

Question 3

Kappa, P.Eng., is employed by a municipality in Ontario as head of the municipality's procurement department. Kappa's responsibilities include establishing procurement policies and procedures for the municipality as well as participating in the bid selection and contracting process.

The municipality is currently considering hiring a company to design and build a wastewater treatment facility. The municipality's staff has prepared a draft Request for Tenders for the project. Before it is issued to prospective bidders, it is reviewed by Kappa. Kappa is generally satisfied with the draft and makes only a few revisions, including revisions to the scoring formula used to select the winning bidder. The current formula awards points based on price and compliance with various technical requirements in the Request for Tenders. According to Kappa's revisions, up to 10 points could be awarded based on the amount of experience the bidder has in designing and building such projects, and local bidders would receive 10 points automatically.

Kappa chairs a committee charged with evaluating, scoring and selecting the winning bidder. Of the bids received, ABC and XYZ received the most points from the committee as described in the table below:

	Possible Points	ABC's Score	XYZ's Score
Technical	40 points	35 points	35 points
Price	40 points	28 points	40 points
Experience	10 points	10 points	3 points
Local Bidder	10 points	10 points	0 points
Total	100 points	83 points	78 points

Although ABC and XYZ have similar experience, XYZ's score was reduced to 3 points for experience because, according to statements made by Kappa at the committee, XYZ's engineers had produced a poor design on one of its previous projects. In addition, ABC was the only local bidder. The committee informed ABC that it had won the job.

Later that evening, Kappa was treated to a celebration dinner at an expensive restaurant by Sigma. Sigma is the president of ABC and is also Kappa's spouse.

- (25) Using the code of ethics as your guide, discuss Kappa's conduct.

Question 4

Alpha is a P.Eng. employed by EngInc, an engineering company. As Chief Project Engineer, Alpha is in charge of a project for MajorCo, an important client of EngCo. MajorCo and Alpha have several disagreements over the design that Alpha has developed. MajorCo wants a cheaper, more conventional solution. Alpha is convinced that the design is a "masterpiece" and believes that MajorCo "doesn't have an ounce of imagination". Alpha simply shrugs off MajorCo and refuses to discuss any other alternative.

MajorCo is furious and phones Beta, P.Eng., the President of EngInc, to yell and complain about Alpha. MajorCo threatens to hire another engineering firm to complete the design according to MajorCo's wishes.

You work for EngInc as an intermediate design engineer. Beta calls you into a private office and closes the door. Beta asks you to review Alpha's design and instructs you to keep the review a secret from Alpha. Beta explains that Alpha is a senior engineer who has been with EngInc for 28 years and could be "a bit sensitive at times".

- (15) (a) What do you tell Beta?
- (10) (b) Please comment on Alpha's conduct in dealing with MajorCo. How should Alpha have responded to MajorCo's request?

Professional Practice Examination -- Study Notes -- Part "A" -- August 9, 2008

ppeStudyNtsA08Aug9

Regulation 941 sections 72. and 77. should be studied carefully before the exam, so that comparable situations will be recognized quickly, and time is used effectively during the exam. Sections 72. and 77. are supplied at the exam so exact references can be given in an answer. During study, 'time skill' can be developed, by practice writing without time pressure but with full details, then re-writing the same answer but within a time of 20 minutes, being selective in details.

All references as given here are for study purposes. References from codes 72. and 77. are expected in an answer, others are not. These notes are to illustrate a range of possible content.

1 (a) The Fees Mediation Committee (FMC) consists of PEO members who are not on the Complaints or Discipline Committees. FMC mediates written complaints by clients, about fees charged. With the written consent of all parties, the FMC may arbitrate a complaint, PE Act 32.

1 (b) The purpose of the engineer's seal, as affixed to a final document, is to identify the responsibility for the preparation or checking of the document. The seal must have with it 1) a date and 2) a signature, Regulation 941 section 53. and section 72.(2)(e).

1 (c) Complaints Committee role - review complaints and give direction to resolve, including referring to discipline if necessary, PE Act 24. Discipline Committee role - evaluate complaints as referred, and if advisable, conduct a hearing. The committee may make an order from a wide range of penalties, including revoking of a licence, PE Act 28.

1 (d) A member of PEO holds a licence to practice professional engineering. A provisional, temporary or limited licence holder has limits on their practice. The presence of the limits is the difference between them, PE Act - 5.(1); 18.(1) & (5); and Reg 941 - 42., 44.1(2) and 45.

1 (e) The restrictions on an advertisement for services are - it must be 1) professional and dignified 2) without exaggeration of facts 3) without criticism of others and 4) without reference to the seal of a holder or the PEO seal, Regulation 941 section 75.

2 (a) I should inquire of FarmFab if those certain safety features of the tractor that failed to function, are being given attention - specifically 1) a competent redesign to prevent failures, 77.1.v., and 2) a recall, to modify all tractors in service and those remaining at dealers, to show fidelity to public needs, 77.1.ii. If FarmFab is committed to take these steps, I have exercised my duty of devotion to high ideals of personal honour and professional integrity, 77.2.iii. After a reasonable time, I should follow-up with engineering management at FarmFab, to ensure there is fairness and loyalty to all involved, 77.1.i.

If the appropriate steps have not been taken and there is still a safety problem, there will likely be more accidents resulting in more claims, costing much more than a recall. There may be some loss of sales but the integrity and life of the company would have an opportunity for recovery by doing a recall. If there is no evidence of a commitment in process to ensure that steps will be taken, I have a duty to report this as failure to safeguard the life health or property of other farmers, 72.(2)(b), and also report a danger to public safety or welfare, 72.(2)(c). Although reporting would violate my duty to keep the secret with the farmer as confidential, 77.3., the public welfare is paramount, 77.2.i. FarmFab must be clearly shown the consequences and be persuaded to fix the problem, 72.(2)(f). If the responsible people at FarmFab are PEng's, I have a duty to expose their behaviour before the proper tribunals, 77.8., and their failure to take action as professional misconduct, 72.(2)(j). If I do not, I could be charged with misconduct.

continued ... 2

2 (b) The hourly fee structure as offered by FarmFab is proper credit for engineering work and is adequate compensation, 77.7.v. However, 'the bonus', is outside of adequate compensation and develops a conflict of interest, 72(2)(i), 77.3. and 77.4. The bonus is a blatant incentive to win the case. It is a deception to the 'client farmer', 77.1.i., and to the other 'public' farmers who may purchase tractors, 77.1.ii. The bonus could also lead me into the temptation of compromising my engineering work, and I could then be open to a charge of professional misconduct, 72(2)(j).

3 Kappa's conduct was unprofessional and is clearly a conflict of interest, 72.(2)(i). The interest Kappa has with ABC (Kappa's spouse Sigma is the president) should have been disclosed to the municipality, 77.3. and 77.4. Arrangements should have been made so Kappa was not directly involved, in revisions to the scoring formula, or in sitting on the selection committee, so as to act with devotion to high ideals, 77.1.i. It appears Kappa adjusted the scoring formula to give an advantage to ABC, which is not being fair and loyal to the employer, 77.2.i. In addition, it is absconding with public funds, and not being faithful to public need, 77.1.ii. Kappa should have been asked to justify the revised scoring formula, otherwise this action represents a statement inspired by another interest, 72.(2)(i)5. Without a second opinion or back-up information about XYZ's poor design on a previous project, Kappa's statement is an injury to the reputation of another practitioner, 77.7.iii. This unprofessional conduct should be exposed before the proper tribunals, 77.8., and Kappa should be charged with professional misconduct, 72,(2)(j).

4 (a) I would explain to Beta that if I act as instructed I would be in breach of the code of ethics, reviewing another's work without their knowledge, 77.7.ii. Although I should be loyal to Beta as my employer, 77.1.i., I should also act with courtesy and good faith toward another practitioner, 77.7.i. However a breach of the code of ethics is not a breach of the code of conduct, 72.(2)(g). Conduct we must do, ethics we should do.

I will choose the 'least evil'. I will follow the instructions from Beta and look for cost reductions. As a first priority, any design that is used must safeguard life, health and property, 72.(2)(b), and comply with all codes and rules, 72,(2)(d). Not complying will be taken as negligence, 72.(2)(a). If Beta, as a PEng, does not support safety rules, this is unprofessional, 72.(2)(j). I should look for other employment, and then expose Beta's conduct before the proper tribunals, 77.8. It is not my intention to injure the reputation of Alpha as another practitioner, 77.7.iii. but rather to act with overall devotion to high ideals of personal honour and professional integrity, 77.1.iii.

4 (b) Alpha was short-sighted and being unfair in dealing with MajorCo as a client, 77.1.i. Alpha should have responded with diplomacy and explained the benefits of the 'masterpiece' design. Alpha should have considered including some of MajorCo's requests within the design, as long as the result is safe, 72.(2)(b). The design should show fidelity to public needs, 77.1.ii., and regard public welfare as paramount, 77.2.i. Alpha would be extending the effectiveness of the profession through the exchange of information and experience, 77.7.v. If MajorCo's representative is a PEng (or an architect or other professional) this would be cooperating with another professional on a project, 77.6.

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL PRACTICE EXAMINATION – August 9, 2008

PART “B” - Engineering Law and Professional Liability

This examination comes in two parts (**Part “A” and Part “B”**). Both parts must be completed in this sitting. You will be given a total of **180 minutes** to complete the examination.

Use the correct colour-coded Answer Book for each part, place in the correct envelope and **seal after completed**.

White Answer Book for Part A white question paper.

Coloured Answer Book for Part B coloured question paper.

This is a **“CLOSED BOOK”** examination. **No** aids are permitted other than the excerpts from the 1990 Ontario Regulation 941 covering sections 72 (*Professional Misconduct*) and 77 (*Code of Ethics*) supplied at the examination. Dictionaries are **not** permitted.

The marking of questions will be based not only on academic content, but also on legibility and the ability to express yourself clearly and correctly in the English language. If you have any doubt about the meaning of a question, please state clearly how you have interpreted the question.

All **four** questions constitute a complete paper for Part “B”. Each of the four questions is worth 25 marks.

ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO

PROFESSIONAL PRACTICE EXAMINATION – August 9, 2008

PART “B” - Engineering Law and Professional Liability

You will be given a total of **90 minutes** to complete this examination.

Use the correct colour-coded Answer Book for each part, place in the correct envelope and seal after completed.

White Answer Book for Part A white question paper.

Coloured Answer Book for Part B coloured question paper.

This is a "**CLOSED BOOK**" examination. **No** aids are permitted other than the excerpts from the 1990 Ontario Regulation 941 covering sections 72 (*Professional Misconduct*) and 77 (*Code of Ethics*) supplied at the examination. Dictionaries are not permitted.

The marking of questions will be based not only on academic content, but also on legibility and the ability to express yourself clearly and correctly in the English language. If you have any doubt about the meaning of a question, please state clearly how you have interpreted the question.

All **four** questions constitute a complete paper for Part "A". Each of the four questions is worth 25 marks.

(MARKS)

(25) 1. Briefly define, explain or answer (by listing as required) any five of the following:

- (i) Secret Commission
- (ii) DRB
- (iii) Parol evidence rule
- (iv) Rule of contra proferentem
- (v) List five essential elements of an enforceable contract
- (vi) Discoverability
- (vii) Equitable estoppel
- (viii) Five examples of employment rights to which individuals are entitled under Ontario's Human Rights Code (list only)

(25) 2. A telecommunications development company leased an outdated and unused underground pipe system from an Ontario municipality. The developer's purpose in leasing the pipe was to utilize it as an existing conduit system in which to install a fibre optic cable system to be designed, constructed and operated in the municipality by the telecommunications developer during the term of the lease. All necessary approvals from regulatory authorities were obtained with respect to the proposed telecommunications network.

The telecommunications development company then entered into an installation contract with a contractor. For the contract price of \$4,000,000, the contractor undertook to complete the installation of the cable by a specified completion date. The contract specified that time was of the essence and that the contract was to be completed by the specified completion date, failing which the contractor would be responsible for liquidated damages in the amount of \$50,000 per day for each day that elapsed between the specified completion date and the subsequent actual completion date. The contract also contained a provision limiting the contractor's maximum liability for liquidated damages and for any other claim for damages under the contract to the maximum amount of \$1,000,000.

Due to its failure to properly staff and organize its workforce, the contractor failed to meet the specified completion date. In addition, during the installation, the contractor's inexperienced workers damaged significant amounts of the fibre optic cable, with the result that the telecommunications development company, on subsequently discovering the damage, incurred substantial additional expense in engaging another contractor to replace the damaged cable. Ultimately, the cost of supplying and installing the replacement cable plus the amount of liquidated damages for which the original contractor was responsible because of its failure to meet the specified completion date, totalled \$1,800,000.

Explain and discuss what claim the telecommunications development company

could make against the contractor in the circumstances. In answering, explain the approach taken by Canadian courts with respect to contracts that limit liability and include a brief summary of the development of relevant case precedents.

- (25) 3. An Ontario municipality (the “Owner”) decided to update and expand its water treatment facilities. To do so, the Owner invited competitive tenders from contractors for the construction of the new water treatment facility.

The Owner’s consultant on the project, a professional engineer, designed the facility and prepared the Tender Documents to be given to contractors interested in bidding on the project. Each of the bidders was required to be prequalified and approved by the Owner for participation in the bidding. The Tender Documents included the Plans and Specifications, the Tendering Instructions which described the tendering procedure and other requirements to be followed by the bidders, the Tender Form to be completed by the bidders, the form of written Contract that the successful contractor would be required to sign after being awarded the contract, and a number of other documents.

According to the Tendering Instructions, each tender bid as submitted was to remain “firm and irrevocable and open for acceptance by the Owner for a period of 60 days following the last day for submitting tenders”. The Tendering Instructions also provided that all bids were to be submitted in accordance with the instructions in the Owner’s Tender Documents and that the Owner was not obligated to accept the lowest or any tender.

Tenders were submitted by five bidders. All bids were submitted in accordance with the Owner’s Tender Documents. The lowest bid was well within the Owner’s budget.

Within the 60 days specified and before the Owner’s consultant had made a recommendation to the Owner as to whom the contract should be awarded, the consultant was called to a meeting with a prominent member of the Municipal Council who noted that the lowest bidder was not one of the bidders who were “local bidders” from within the Municipality. The Councillor expressed a very strong view that the contract should in fact be awarded to a local bidder. The Councillor also noted that if one item that had been included in the specifications was deleted from the bids the result would be that the bid of the lowest “local contractor” would become the lowest bid overall and the Councillor’s preference for awarding the contract to a “local contractor” could be satisfied.

There had been no reference in the Tendering Instructions to any preference being shown to local contractors.

How should the consultant deal with the political pressure being applied by the Council member?

If the contract is awarded to the lowest local bidder what potential liabilities in contract law may arise? If the consultant engineer recommends to the Owner that the contract be awarded as the Councillor suggests what liabilities may arise for the engineer? Please provide your reasons and analysis.

- (25) 4. An information technology firm assigned to one of its junior employee engineers the task of developing special software for application on major bridge designs. The employee engineer had recently become a professional engineer and was chosen for the task because of the engineer's background in both the construction and the "software engineering" industries.

The firm's bridge software package was purchased and used by a structural engineering design firm on a major bridge design project on which it had been engaged by contract with a municipal government.

Unfortunately, the bridge collapsed in less than one year after completion of construction. Motorists were killed and injured.

The resulting investigation into the cause of the collapse concluded that the design of the bridge was defective and that the software implemented as part of the design did not address all of the parameters involved in the scope of this particular bridge design. The investigators concluded that although the design software would suffice for certain types of structures it was not appropriate in the circumstances of the particular subsurface conditions and length of span required for this particular application. The investigators' report also indicated that the design software package was not sufficiently explicit in warning users of the software of the scope of the design parameters addressed by the software. The investigators' report also stated that even an experienced user of the software might reasonably assume that the software would be appropriate for application on this particular project and that too little attention had been paid to ensuring that adequate warnings had been provided to software users of the limitations on the application of the software.

What potential liabilities in tort law arise in this case? In your answer, explain what principles of tort law are relevant and how each applies to the case. Indicate a likely outcome to the matter.

The text pages as given below, are for study purposes, and are not anticipated in an answer.

Note: in question 1., only 5 (of the 8 options) are required.

- 1.(i) Secret commission - a payment, promise, bribe or kickback, made by a person who is not a party to a contract, to influence the actions of one party to the contract. The purpose is to secretly defraud the interests of the other party. A secret commission violates the Criminal Code of Canada, section 426; text - 3rd edition, pages 169 - 170; - 4th edition, pages 179 - 180.
 - 1.(ii) DRB - 'dispute review board' or 'dispute resolution board' - to recommend or decide on, solutions to disputes. It is comprised of neutral 3rd parties (usually 3 of) selected by the owner and contractor prior to project start. A DRB is less formal and more time effective than arbitration or legal procedures; text - 3rd edition, page 231; - 4th edition, page 31 (more extended coverage).
 - 1.(iii) Parol evidence rule - verbal agreements are not part of a contract but if a condition needs to be precedent, that evidence may be allowed to interpret the contract terms. Parties are free at any time to amend the terms of a contract; text - 3rd edition, page 128; - 4th edition, page 136.
 - 1.(iv) Rule of contra proferentem - where a contract provision is ambiguous, preference in settlement will be against the party which drafted that particular provision. Who drafted what should be recorded beforehand; text - 3rd edition, page 128; - 4th edition, page 136.
 - 1.(v) Contract - 5 essential elements - 1) offer made and accepted 2) mutual intent to enter 3) consideration 4) capacity and 5) lawful purpose. If a contract is a bad business deal, the courts will not impose more favourable terms; text - 3rd edition, page 75; - 4th edition, page 79.
 - 1.(vi) Discoverability concept - defines the beginning of a limitation window, from within which, a suit in tort or contract must be filed. It is a date when a cause for action was first discovered, or ought reasonably to have been discovered; text - 3rd edition, page 66; - 4th edition, page 71.
 - 1.(vii) Equitable estoppel - a legal principle to prevent a party to a contract from insisting on their strict contractual rights, when these have been gratuitously waived, and where the result would be clearly inequitable to the other party, text 3rd edition, pages 88 - 93; - 4th edition, pages 92 - 97.
 - 1.(viii) Employment rights - equal treatment regardless of {list only 5 of 14} race, ancestry, place of origin, colour, ethnic origin, citizenship, creed / religion, sex, sexual orientation, age, marital status, family status, record of offences, or handicap; text - 3rd ed'n, pg. 312; - 4th ed'n, pg. 322.
2. The claim the telecommunications development company (TDC) could make against the first installation contractor (FIC) would be for payments to the replacement cable contractor (RCC) plus liquidated damages, a total of \$1,800,000. This is well above the FIC's maximum liability provision in the contract of \$1,000,000.

This case is one of fundamental breach going to the root of the contract, and a provision to limit liability is not normally enforceable. The FIC would then be liable for the full amount of losses, that is \$1,800,000. Note, the liquidated damages portion, to be enforced, must be a genuine pre-estimate of actual losses to TDC, and not just a penalty to the contractor, see text 'penalty clauses' - 3rd edition, page 141; - 4th edition, page 149.

Some Canadian courts have allowed the enforceability of liability clauses, if the intent of the parties, as expressed or constructed in the liability clause, is clear and true. In this case the 'true construction approach' is said to have taken place and the clause is enforceable. Therefore the law has changed in this area, to accept freedom of contract. FIC would be liable for \$1,000,000. Relevant case precedents are Harbutt's Plasticene vs. Wayne Tank and Pump, where the clause was not enforceable, text - 3rd edition, page 147; - 4th edition, page 155, and Hunter Engineering vs. Syncrude, where it was, text - 3rd edition, page 151; - 4th edition, page 159.

3. The consultant PEng (CPE) should say "sorry, no" to the prominent Council member (PCM). If any change in action were made to the specifications or instructions in the Owner's Tender Documents (OTD), this would be breaking the law, which a Council member promises to uphold. Contract "A" is formed when each bidder submits a bid. Contract "B" is formed when the final contract is signed with one bidder. If a signing were 'outside' the OTD, and with the lowest local bidder (LLB), then the other 4 bidders could sue for breach of contract, including bid expenses. This is because the Owner Municipality (OM) has breached their Contract "A's", text - 3rd or 4th edition - (the same) page 122.

The total expense, including OM's legal defense and damages, could come in over OM's budget. If CPE does go along with PCM and recommends the award to the LLB, then CPE is open to a suit by OM for breach of trust. Furthermore, CPE is open to a charge of misconduct by Professional Engineers Ontario (PEO), Regulation 941, section 72.(2)(j).

The PCM must have known well before the preparation of OTD that water treatment facilities were to be updated and expanded. Representation to Council, and agreement on preference to local bidders, should have been reached well before the preparation of the OTD.

4. The potential liabilities in tort law are the Information Technology Firm (ITF) would be estimated at 70% responsible and the engineering design firm (EDF) at 30% responsible. The purpose of tort law is to compensate for damages as far as this can be done with money. The principles of tort law are 1) a duty of care 2) a breach of that duty and 3) damages as a result. The action is in tort because there is no privity of contract between the municipal government (MG) and ITF. MG could bring an action in contract against EDF, or an action in tort, depending on the contract clauses.

The MG will claim ITF should have given specific and complete information about the capabilities and limitations of the software package as a 1) duty of care. Since the investigator's report (expert testimony) tied bridge failure directly to the software package, the 2) duty was breached. There was loss of life, which cannot be compensated, and damage as a 3) result of the breach. No disclaimers of liability were stated for the software package.

The ITF and the EDF will be concurrent tortfeasors. ITF is vicariously liable for the actions of its junior engineer because the employer is assumed to have 'deeper pockets' and is more able to pay. A case precedent is Unit Farm Concrete vs. Eckerlea Acres, text 40.

The ITF management should not have assigned this project to a junior engineer, even though a PEng, without a senior PEng review. The EDF should have done at least a rudimentary analysis, which would probably have exposed the deficiencies in the software.