

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS**

**E3 - ENVIRONMENTAL MANAGEMENT**

**October 2014**

**Note: This examination consists of 6 questions on 1 page.**

**Marks**

**Q.No**

**Time: 3 hours**

**Value   Earned**

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--|
| 1. | A hydroelectric project involving a dam on a medium-sized river in sub-arctic Canada is being planned. The dam will create a reservoir over 60 km long.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |  |
|    | a) Does such a project require a comprehensive Environmental Impact Assessment, and if so under what Federal legislation?                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4      |  |
|    | b) What will be the major environmental impacts of such a project?<br>c) What will be the major socio-economic impacts on First Nations in the general area?                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8<br>8 |  |
| 2. | You are surveying a vacant lot in a commercial area of a mid-sized Canadian city for a client that has recently purchased the property. The neighbor starts chatting to you and states that – unknown to your client - there was a gas station in this area several decades ago.                                                                                                                                                                                                                                                                                                                        |        |  |
|    | a) This information could result in what kinds of problems arising?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10     |  |
|    | b) What is your responsibility to your client?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2      |  |
|    | c) If these problems are serious, what will your client need to do to address the issue?<br>d) If this issue turns out to be a problem, who has the liability for rectifying the problem?                                                                                                                                                                                                                                                                                                                                                                                                               | 6<br>2 |  |
| 3. | A large industrial park has been planned for a gently undulating area near a regional airport. In association with planning and development of roads, building sites and other infrastructure, a stormwater management plan was prepared and implemented. Concurrent with these activities a stream draining much of the development area started eroding its banks and ultimately caused severe erosion downstream causing damage to a public road and some private property.<br><br>Discuss the ways in which the development and/or the stormwater management plan could have caused these problems. | 15     |  |
| 4. | In many parts of Canada, riparian areas are protected. Explain why it is important to protect such areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 15     |  |
| 5. | The transportation of oil and gas has been controversial in Canada in the last few years. The main modes of transport have been pipelines and rail tankers. Discuss the advantages and disadvantages of both from an environmental point of view.                                                                                                                                                                                                                                                                                                                                                       | 15     |  |
| 6. | a) What is the Species at Risk Act and why is it important?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5      |  |
|    | b) How may it affect land development in Canada?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10     |  |
|    | <b>Total Marks:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100    |  |