

## PROFESSIONAL ENGINEERING PRACTICE (SEMM 4902)

Semester 2, Session 2022 /2023

### **INDIVIDUAL ASSIGNMENT 2**

(CLO2, PO8)

Total marks = 10%

#### **Instructions**

- A. Each student shall answer only one question from the list below.
- B. Each solution shall not have more than 2,000 words.
- C. The solution shall be handed on time. Any delay will cause marks reduction.

#### **Question 1**

You as the Director of the Maintenance Department of a theme park. Because of budget constraints, the theme park has been unable to hire a sufficient number of qualified individuals to perform theme ride inspections. This makes it difficult for the inspectors to do a good and thorough job. At the same time, a new and tougher safety standards was implemented and superseded the old standard. While this latest standard promotes greater public safety than the last one, it also contributes to the difficulty inspectors have doing a good and thorough job. You set up an appointment with the Chairman of the theme park to raise your concerns. The Chairman agrees to hire additional inspectors for the maintenance department on the condition that you agree to permit certain specified theme rides under construction to be inspected under the older safety standard, less rigid enforcement requirements. What is your reaction to the Chairman's proposal and how would you tackle this problem.

#### **Question 2**

You as a Graduate Engineer work in an engineering consulting firm. Your Superior directed you to sample the contents of wastage drums located in the property of a client. From the look and smell of the drums, you believe that analysis of the sample will show hazardous waste in the drums. You are aware that if the material contains hazardous waste, there are legal requirements for the transport and disposal of the drums. You reported to your Superior but were instructed to report only that samples have been taken, and not to conduct the analysis. Since the client is a major under the firm, your Superior proposes to report to the client that the drums contain non-hazardous material that needs to be conventionally disposed due to the much more expensive disposal cost for hazardous waste. Does your Superior fulfill an engineer's professional responsibilities and withholding detail information to their client? What can you do in this situation?

#### **Question 3**

You as a Design Engineer is employed by a vacuum cleaner manufacturer. You are responsible for the design of some vacuum cleaners and signs off on the drawings. Although your design has been properly prepared, the manufacturing process is faulty, drives up cost, and suffers a mechanical breakdown. The manufacturing division suggests modifications to bring down costs, but your engineering analysis on their suggestion shows that it will reduce the reliability of the product that would likely cost the company more through warranty claims. Your Superior insist for you to sign off on the changes anyway. What is your professional responsibilities in this case? What are the supervisor's responsibilities? What should you do?