



GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

Faculty of Engineering

Department of Civil Engineering

BSc Engineering Degree

Semester 5 Examination – May 2022

(Intake 37 – All streams)

CE 3142– PROFESSIONAL ETHICS

Time allowed 2 hours

25th May 2022

INSTRUCTIONS TO CANDIDATES

This paper contains five questions on four pages.

Answer any four (04) questions.

This is a closed book examination.

This examination accounts for 70% of the module assessment. The total maximum mark obtainable is 100. The marks assigned for each question and parts thereof are indicated in square brackets.

If you have any doubt as to the interpretation of the wordings of a question, make your own decision, but clearly state it on the script.

Assume reasonable values for any data not given in or provided with the question paper; clearly state such assumptions in the script.

All examinations are conducted under the rules and regulations of the KDU.

QUESTION 1

Comparing the Code of Ethics of the IESL with that of international Engineering Institutions, there are four Clauses which are common to all, reflecting the importance of these concepts to the ethical practice of the Engineering profession.

What are these four Clauses and explain why are they relevant to good Engineering practice, giving examples of possible violations [25 Marks]

[25 Marks]

QUESTION 2

a) Engineering works are expected to follow Engineering Standards, Codes of Practice and other procedures that will ensure the integrity of the work done and guarantee the safety of the users. However, there may arise a situation that requires the Engineer to satisfy the "STANDARD OF CARE". Explain what this is. [10 Marks]

b) Taking the examples of the Citicorp Building and the Hyatt Walkway, describe how the Standard of Care was met, and results of the actions taken. [15 Marks]

[25 Marks]

QUESTION 3

The primary cause for major engineering disasters in the past, has been the violation of professional ethics, and the main violations can be considered as:

a) Failure to safeguard life and property [09 Marks]

b) Corporate goals over-riding Engineering advice and concerns [09 Marks]

c) Working beyond level of Competence [07 Marks]

Considering the following disasters, give examples of how ethical violations contributed to these major engineering calamities:

- i. Techtronics CX-30 Industrial Robot
- ii. Bhopal Gas Leak
- iii. St. Francis Dam disaster

[25 Marks]

QUESTION 4

a) The IESL Code of Ethics states that "Engineers shall build their reputation on merit, and not compete unfairly" Describe what is meant by this Clause and how it can be violated through the following unethical actions:

- i. Misrepresentation
- ii. Under-cutting
- iii. Bribery
- iv. Connections
- v. Honesty

[03 x 5 Marks]

b) The IESL Code of Ethics requires that "Engineers shall give evidence, express opinions or make statements in an objective and truthful manner". Explain the need for following this, and the consequences of violating the Clause.

[10 Marks]

[25 Marks]

QUESTION 5

a) Volkswagen, a leading automobile manufacturer, was prosecuted by the US Environmental Agency in 2016, for falsifying emission test results to obtain acceptable results, while in reality the NO_x emission was well in excess of permissible limits.

In their Code of Conduct they claim that,

"We bear responsibility for continuous improvement of the environmental tolerability of our products and for the lowering of demands on natural resources while taking economic considerations into account. We therefore make ecologically efficient advanced technologies available throughout the world and implement them over the entire lifecycle of our products."

[15 Marks]

What are the ethical issues that arise from this violation

b) A high-profile case of trade secret violations was settled in January 1997 (without coming to trial) when Volkswagen AG (VW) agreed to pay General Motors Corporation (GM) and its German subsidiary Adam Opel \$100 million in cash and to buy \$1 billion in parts from GM over the next seven years.

Once more in their Code of Conduct, they claim that,