COMSATS University Islamabad, Lahore Campus
MIDTERM EXAMINATION - SPRING 2025

Course Code:	EGG101
Course Title:	Engineering Professionalism (Solution)
Credit Hours:	3
Programme:	Bachelors of Computer Engineering
Course Instructor:	Dr. Zaid Ahmad
Date:	Apr 17, 2025
Time Allowed:	90 Minutes
Maximum Marks:	50

Student's Details

Student's Name:	
Student ID:	
Class & Section:	FA23-BCE-A&B

Instructions

- No separate answer book is required for this exam. Writing/Working space is provided to you.
- DO NOT TURN OVER until directed.
- Sign the bottom of each page of the exam.
- This is a closed-book, closed-notes, offline exam.
- Do not use more than one ink colour. Use only a blue or a black pen.

Student's Signature

Student Assessment

Question	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Total
CLO/Level	CLO1/C3	CLO1/C3	CLO1/C3	CLO1/C2	CLO1/C3	CLO1/C2	CLO1/C2	-
Total Marks	10	10	06	06	06	06	06	50
Marks Obtained								

Examiner's Signature

SECTION I: OBJECTIVE TYPE

Question 1: Encircle the correct answer for each of the following: **[10 Marks]**

1. Which of the following is not considered as a sense of moral responsibility?

   (a) Obligations
   (b) Concientiousness
   (c) Accountability
   (d) Job responsibility

a	b	c	(d)	e

2. Which of the following is not a possible problem in conceptual design?

   (a) Violation of patents and trade secrets
   (b) Product to be used illegally
   (c) Unrealistic assumptions
   (d) Blind to new concepts

a	b	(c)	d	e

3. "Because codes express a profession's collective commitment to ethics, they provide a positive stimulus (motivation) for ethical conduct." Which of the following essential roles of codes of ethics is reflected by this statement?

   (a) Guidance
   (b) Inspiration
   (c) Shared standards
   (d) Education and mutual understanding

a	(b)	c	d	e

4. Which one of the following is a desirable limitation of codes of ethics?

   (a) Conflicting entries
   (b) Proliferation
   (c) Incompleteness
   (d) Vagueness

a	b	c	(d)	e

5. Which one of the following organizations of Pakistan is a member of WFEO?

   (a) Pakistan Engineering Council
   (b) Institute of Engineers Pakistan
   (c) Institute of Electrical and Electronics Engineers
   (d) Association of Consulting Engineers of Pakistan

a	b	c	d	e

6. Which of the following is not a feature of code of ethics?

   (a) Focus on moral principles and values
   (b) Tells employees what they must or must not do
   (c) Harder to enforce
   (d) Promotes ethical culture

a	b	c	d	e

7. Which of the following show(s) similarities between engineering as social experiments and standard experiments in terms of partial ignorance?

   (a) Uncertainties in abstract model
   (b) Uncertainties in material characteristics
   (c) Uncertainties in nature of the stress that the finished product will encounter
   (d) All of above

a	b	c	d	e

8. Which one of the following is not an advantage of industrial standards?

   (a) Interchange of components
   (b) Ready-made substitution for lengthy design calculations
   (c) Decrease product cost
   (d) Nominal values

a	b	c	d	e

9. The standards for Local Area Networks are mostly established by:

   (a) IEEE
   (b) ETSI
   (c) ITU
   (d) ANSI

a	b	c	d	e

10. Which type of conflicts tend to be the most difficult to resolve?

    (a) Conflicts over schedules
    (b) Conflicts over personnel resources made available for projects
    (c) Conflicts over administrative procedures
    (d) Personality conflicts

a	b	c	d	e

Question 2: Match the terms in Column A with the correct description from Column B using the table given below: **[10 Marks]**

Column A	Column B
1. Engineer-oriented companies	(a) Focus primarily on the quality products
2. Conflicts over administrative issues	(b) A principle of conflict resolution
3. Generate a variety of possibilities before deciding what to do	(c) Moral responsibility
4. Concientiousness	(d) Ability to carry out the tasks and duties of a given job
5. Informed consent	(e) Accountability procedures and reviews
6. Comprehensive Perspective	(f) Open eyes, open ears, and open minds
7. Model code of ethics	(g) User Manual
8. Moral clarity	(h) Moral values at stake
9. Accountability	(i) Awareness to wider implications of a work
10. Skill	(j) Moral values at stake

Column A	1	2	3	4	5	6	7	8	9	10
Column B	a	e	b	i	g	f	X	h	c	d

SECTION II: CASE STUDY

Instructions: Read through the case study *Collapse of Hotel New World (Singapore, 1986)* and answer the following questions in the space provided. Each answer should not exceed 50 words.

Question 3: Accepting and Sharing Responsibilities

Relate the case study in Annexure I with the progression of engineering tasks in Annexure II to identify the applicable underlying cause(s) of the problem(s).

Key Terms: *Lack of vision, incompetence, lack of time or proper materials, silo mentality, relying on safety engineers down the line, improper use or disposal of the product, dishonesty, and intention.* [06 Marks]

The collapse resulted from incompetence, dishonesty, and silo mentality. Unqualified designers lacked vision and relied on others for safety checks. Responsibilities were not shared transparently across engineering phases. The absence of professional oversight throughout the progression of tasks led to fatal structural failure.

Question 4: Teamwork–Ethical Corporate Climate

Explain how an ethical corporate climate could have improved decision-making and safety practices during the design and construction phase of the Hotel New World. Use all four features of ethical corporate climate in your answer.

Key Terms: *widely accepted ethical values, ethical language, moral tone, conflict resolution.* [06 Marks]

If the company promoted ethical values, used ethical language in meetings, had leadership emphasizing safety over cost, and adopted clear procedures for resolving internal concerns, staff might have questioned poor design decisions, enabling early intervention and possibly preventing the structural collapse of Hotel New World.

Question 5: Teamwork–Managing Conflicts in Engineering Teams
The Hotel New World case highlights the importance of managing conflicts between executive authority and engineering expertise. *Apply* principles of conflict resolution to suggest how proper distribution of responsibilities and respect for expert authority might have prevented the ethical failure.
Key Terms: *executive authority, expert authority, conflict resolution principles: people, interestes, options, criteria* [06 Marks]

Respect for expert authority was lacking as executive decisions ignored engineering judgment. Applying conflict resolution—separating people from the problem, focusing on safety interests, and using objective standards—could have guided ethical project choices and helped avoid dangerous compromises during construction and material selection.

Question 6: Informed Consent and Accountability
From the perspective of *informed consent* and *accountability*, *explain* how engineers involved (or supposed to be involved) in the Hotel New World construction failed in their ethical duties. What measures should be in place to ensure transparency and accountability in structural engineering projects? [06 Marks]

Building occupants were unaware of life-threatening risks due to poor transparency. No informed consent was possible. Ethical engineering requires clear communication, professional accountability, and systems ensuring only qualified individuals are responsible for safety-critical design and construction decisions.

Question 7: Learning from Past
Using the concept of responsible experimenter, *explain* how *learning from past* applies to the post-collapse response and reforms introduced by the Singaporean government. How can engineers use such tragic cases to enhance ethical awareness and future risk prevention? [06 Marks]

The collapse prompted reforms in construction laws, rescue operations, and professional accountability. Engineers must treat failures as opportunities to enhance safety practices and ethical awareness. By reflecting on such incidents, future projects can better align with professional responsibilities and public safety expectations.

End of Assessment