

**The Open University of Sri Lanka**  
**Faculty of Engineering Technology**  
Department of Electrical and Computer Engineering



<b>Study Programme</b>	: Bachelor of Software Engineering Honours & Bachelor of Science Honours in Engineering
<b>Level</b>	: 6
<b>Name of the Examination</b>	: Final Examination
<b>Course Title and Code</b>	: EEM6201/ EEM6202 Professional Practice
<b>Academic Year</b>	: 2023/2024
<b>Date</b>	: 11.02.2025
<b>Time</b>	: 9 30 hrs. – 12 30 hrs.
<b>Duration</b>	: 3 Hours

**General Instructions**

- Read all the instructions carefully before answering the questions.
- This question paper consists of five (05) compulsory questions in four (04) pages
- This is a CLOSED book exam.
- An answer to each question should start with a new page.
- Draw fully labeled diagrams where necessary.
- Write answers in clear and concise format appropriately in points/bullet form.
- Do not use red colour pens
- Clearly state your index number in your answer script on every page.

**Question 01****(20 Marks)**

A researcher developed a conceptual framework to guide the development of, “proof of concept.”

- a) What do you mean by a “conceptual framework?” **(2 Marks)**
- b) List down four features of conceptual frameworks. **(3 Marks)**
- c) Explain the process of conceptual framework analysis. **(5 Marks)**
- d) Propose a new conceptual framework or hypothetical framework for professionals by considering the information below.
  - I. How can professionals stay up to date with educational trends to enhance customer/user engagement and professional outcomes?
  - II. Methods that can address ethical issues when proposing the conceptual framework. **(10 Marks)**

**Question 02****(20 Marks)**

Engineering solutions often aim to address societal challenges, such as improving infrastructure, advancing technology, or mitigating environmental impacts.

- a) Briefly explain what 'system theory' is, with the help of an example. **(2 Marks)**
- b) Discuss the concept of “Sustainable Development.” **(3 Marks)**
- c) Describe how engineering solutions would affect negatively in the education sector with an example. **(5 Marks)**
- d) Choose an engineering solution or technological innovation (e.g., renewable energy systems, urban transportation systems, or artificial intelligence) and analyze its potential positive and negative effects on society. (Hint - In your answer, discuss how engineers can anticipate and mitigate adverse societal effects while ensuring that the benefits of their solutions are broadly distributed.) **(10 marks)**

**Question 03****(20 Marks)**

You are hired as a professional consultant to develop an intelligent robot who can mimic the current lecturing process for undergraduates. Objective of the robot is to replace current human lecturers with the proposed new robot. The proposed system has both hardware and software components. The proposed robot's key feature is to provide personalized content based on each learner's abilities, guiding them to the correct learning path.

- a) Do you think this is a good approach? Argue with proper reasons. Provide advantages and disadvantages of the proposed robot system. **(2 Marks)**
- b) How can your robot system adapt teaching practices to support students from various **cultural backgrounds**? **(3 Marks)**
- c) Mr. ABC, a director in an institute (not a teacher), proposed a web application to support lectures and improve students' lives.
  - I. Do you agree with his proposal?
  - II. Discuss how the integration of personalized content in a self-learning system within the web application could ensure fairness, confidentiality, and academic integrity, while also supporting lecturers in their ongoing professional development. **(5 Marks)**
- d) Discuss how global technological trends (E.g. - adaptive online learning platforms and artificial intelligence) are influencing university teaching practices. **(5 Marks)**
- e) Discuss how to integrate new technologies (E.g. – Applications like ChatGPT, Google Gemini) in a proper and ethical manner for the university education system. **(5 Marks)**

**Question 04****(20 Marks)**

At present professionals face a range of challenges due to rapid technological developments that require constant learning, skill development and adaptation. To stay effective, they must evolve with these changes.

- a) What do you mean by contemporary issues? Explain using examples. **(4 Marks)**
- b) Discuss the key contemporary issues in the engineering sector that engineers must address to improve engineering. **(6 Marks)**
- c) How can engineering professionals improve their skills over time through reflection, professional development programs, and working with colleagues? **(10 Marks)**

**Question 05****(20 Marks)**

Geographical Indications (GIs) are a form of Intellectual Property Rights (IPR).

- a) What is the act protecting intellectual property rights in Sri Lanka and give a brief introduction to the aspects it covers. **(2 marks)**
- b) What is meant by Geographical Indications in the context of intellectual property? **(3 marks)**
- c) What are the key aspects discussed in "COMPUTER CRIME ACT, No. 24 OF 2007." **(4 Marks)**
- d) The "European Union Artificial Intelligence (EU AI) Act" is primarily focused on developing a legal framework for cloning humans or creating robots that can mimic human behavior in a **legal manner without disrupting human life**.
  - I. State whether you agree with the above statement.
  - II. Justify the answer given in part (i) by explaining the EU AI Act. **(5 Marks)**
- e) The General Data Protection Regulation (GDPR) aims to protect public information available on web sites/web applications.
  - I. State whether you agree with the above statement.
  - II. Justify your answer by clarifying the purpose of the GDPR. **(6 Marks)**

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