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

Study Programme	:	Bachelor of Software Engineering
Name of the Examination	:	Final Examination
Course Code and Title	:	**EEI6171 - Emerging Trends**
Academic Year	:	2024/25
Date	:	20th February 2026
Time	:	09.30-12.30h
Duration	:	3 hours

General instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Four (4)** questions in **Three (3)** pages.
3. Answer **all** questions.
4. All questions carry equal marks.
5. Answer for each question should commence from a new page.
6. This is a Closed Book Test (CBT).

Question 1 [25 Marks]

A city council of a major city wishes to convert the city into a smart city within the next 5 years. The council has sought your services as an expert consultant to develop a plan for this task. Several priority areas have been identified to be implemented in the first phase. These include

a. smart traffic control
b. IoT-based waste management
c. citizen mobile apps
d. facial recognition-based security

However, the council is also concerned about the impact of introducing the technology into human well being.

a. Briefly explain how each of the above aspects can be implemented using modern technology and one benefit of implementing each aspect. (2 x 4 = 8 Marks)

b. Analyze how each one of these will adversely impact the social life of the citizens of the city. Give two examples for each area. (2 x 4 = 8 Marks)

c. The council has also requested you to provide Key Performance Indicators to measure the success of of the plan. Identify one KPI for each area and justify each KPI. (4 Marks)

d. Provide a brief proposal on how the lives of low-income citizens can be improved when the city is converted into a smart city. Include the key stakeholders, tools to be used, and major challenges (5 marks)

Question 2 [25 Marks]

The Department of Electrical and Computer Engineering of the Open University of Sri Lanka wants to launch a digital storytelling campaign called "Voices of Tomorrow", where students share stories of social issues such as mental health, poverty, climate change, corruption, discrimination, or unemployment.

a. Explain why storytelling is considered more powerful than statistics alone when influencing public behavior. Use a psychological or communication-based explanation. (5 marks)

b. Analyze the role of emotion, authenticity, and visual design in digital storytelling. For each aspect provide one example and show how it can be included in a successful campaign. (6 marks)

c. A student makes a video interview about a young worker who is underpaid and exploited.Evaluate the ethical responsibilities of the storyteller in terms of privacy, consent, bias, and representation. (6 marks)

d. Create a storyboard outline (minimum 6 scenes) for a short 2–3 minute digital story about "The Hidden Cost of Convenience" for **one** of the following:
   i. fast fashion
   ii. food delivery
   iii. online shopping
   iv. gig economy (2 x 4 = 8 marks)

Question 3 [25 Marks]

A financial company is providing loans to customers using an online platform mid-sized. All operations including the checking of the identity is carried out online. It stores customer identity data, bank details, and credit information. The management of the company is concerted about cyber attacks affecting its operations.

a. Explain how an attacker may gain access to customer data maintained in the company database. Give details. (6 Marks)

b. Evaluate the impact of a cyber attack in each of the following:
   i.customers
   ii. business operations
   iii.brand trust
   iv. legal compliance
   v. financial performance

(2 X 5 = 10 Marks)

c. Provide a strategy for the company to avoid being subjected to cyber attacks in terms of technical controls, human controls, and policy controls.

(3 x 3 = 9 Marks)

Question 4 [25 Marks]

A healthcare startup is planning to develop an AI-based system that can assist doctors by predicting early signs of diseases using patient data and wearable devices.

a. How does innovation differ from invention? Explain by using suitable examples from the given scenario. (5 Marks)

b. Critically evaluate the potential benefits and dangers of using AI in healthcare decision making. You should address the following aspects and provide at least one benefit and one danger for each.
   i. fairness and bias
   ii. accountability
   iii. transparency
   iv. patient trust

   (2 X 4 = 8 Marks)

c. Propose an innovation strategy for an academic department in light of recent developments in AI based applications. (4 Marks)

d. Recent developments in AI include tools such as Autonomous agents, Generative AI such as ChatGPT and efforts to develop Artificial General Intelligence (AGI).

   Create a well-reasoned argument answering the question:

   "Will AI create more jobs than it destroys in the next 15 years?"

   Your response must include at least three job categories that may grow and *three* that may decline, with justification. (8 marks)