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

Study Programme	: Bachelor of Technology Honours /
	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	**: EEX7171 / EEI6171 Emerging Trends in Technology**
Academic Year	**: 2021 - 2022**
Date	**: 10th February 2023**
Time	: 0930 - 1230hrs
Duration	**: 3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. Answers should be written in the answer book provided. Answer for each question should commence from a new page.
3. This question paper consists of **Four (4)** questions in **Three (03)** pages.
4. Answer all questions.
5. This is a Closed Book Test **(CBT).**
6. Answers should be in clear handwriting.
7. Do not use red colour pen.

Question 1

Artificial Intelligence (AI) is impacting all areas of our lives. Answer the following questions.

(a) Describe four (04) areas of AI that is currently under development that may impact the most in improving our lives in general?

(4 x 3 = 12 Marks)

(b) Describe 2 limitations that impede the immediate application of each of the above in our daily life.

(2 x 3 = 6 Marks)

(c) Clearly explain how the scientific and business community can contribute to overcome these limitations.

(7 Marks)

Question 2

The Open and Distance Learning Institute (ODLI) is a leading educational institution that offers study programs in hybrid mode. Courses are offered online and some components are conducted onsite at ODLI centers distributed Island wide. Students are able to follow its study programs without affecting their employment, social life and family life by studying at a center closer to where they live and work.

ODLI is interested in applying digital storytelling techniques to enhance its curriculum and student engagement.

Answer the following questions based on ODLI.

(a) Describe three different techniques related to digital story telling that the ODLI can use in its operations. (3 x 3 = 9 Marks)

(b) Explain how each of the techniques listed in part (a) can improve the learning experience of ODLI's students. Illustrate your answer with suitable examples.

(3 x 3 = 9 Marks)

(c) What are the risks that the management of ODLI should be aware in using Digital Story Telling techniques to improve its operations and describe how these risks can be mitigated. (7 Marks)

Question 3

(a) Describe 5 factors that should be considered in designing robotic systems that effectively interact and collaborate with human workers in industrial environments?

(5 Marks)

(b) Evaluate from an ethical perspective the design and deployment of autonomous robots?

(4 Marks)

(c) Discuss 3 limitations of robotic perception systems, and how are they being addressed?

(6 Marks)

(d) Discuss the impact, both positive and negative, of the latest developments in autonomous robots in the human society?

(10 Marks)

Question 4

Select any three (03) of the following systems and discuss how technological advances have made an impact on their development.

For each system you have selected you should discuss:

(a) What are the emerging technologies that will have an impact on these systems.

(b) How these systems improved with the introduction of new technologies,

(c) What type of new problems will be introduced to these systems by applying the emerging technologies you have identified in part(i)?

(d) How these problems can be mitigated.

(i) e Commerce Systems
(ii) Inventory management systems
(iii) Health care management systems
(iv) City transport systems
(v) Smart cities
(vi) Smart Agriculture

(25 Marks)

----------END OF PAPER ----------