

Uganda Martyrs University

UNIVERSITY EXAMINATIONS

FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE & INFORMATION SYSTEMS
END OF SEMESTER FINAL ASSESMENT
SEMESTER 1, 2023/2024

COURSE	:	BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY AND BACHELOR OF COMPUTER SCIENCE
CLASS/YEAR	:	THREE
EXAM	:	EMERGING TRENDS IN INFORMATION TECHNOLOGY
CODE	:	CSC 3106
SEMESTER	:	ONE
DATE	:	11 th DEC 2023
TIME	:	9:30-12:30 Noon
DURATION	:	3 HOURS

Instructions

1. Attempt All Questions in Section A and three Questions in Section B.
 2. Time Allowed 3 Hours Only.
 - 3.. Use of relevant Illustrations/diagrams will earn you a bonus mark (s) where applicable.
 4. Remember to indicate the question number and section you have answered.
 5. Write your course and registration number on all your answer sheets.
 6. All answers should be written on the answer booklet
 7. All university rules apply
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SECTION A: (Attempt all questions)

1. (a). With **clear simple examples** define the following terminologies as perceived in the evolving technology era (02 marks each)

- i. Artificial intelligence (AI)
- ii. Internet of Things (IoT)
- iii. Cloud computing
- iv. Telemedicine
- v. Blockchain

(b). Use vivid examples to differentiate between the following terminologies and indicate how they are applied in real life business situations;

(10 marks)

- i. virtual reality and 5G
- ii. Knowledge management systems and content management systems
- iii. Social media and internet

2. Thinking ahead to determine what needs to be done now is a strategy known as foresight. Rather than viewing the future as a predestined event that can be fully understood in advance (predicted), foresight views it as an evolving entity that is only partially apparent in the present. Future events are impossible to predict, and the available data is never

sufficient. The goal is to broaden and redefine the spectrum of likely changes that must be taken into account, not to "get the future right."

(a). Think about what the future will be in 2030. You should think along the domains of health, education, agriculture, business and banking. Give at least two scenarios (plausible but different) of what you anticipate to change. Please be creative in your thought by giving vivid examples where necessary. (10 marks)

(b). Examine the drivers of the change identified in a) above? (5 marks)

(c). Suggest recommendations on what should be done now in order to prepare for the future. (5 marks)

(d). Demonstrate how internet of things (IoT) can be used to improve the five (5) domains in (a) above. (5 marks)

(e). Give five (5) reasons as to why it is important for a technology student to undertake "Emerging Trends in IT" course ? (5 marks)

SECTION B: (Choose only two (2) questions)

1. a) Describe how the emerging trends in information technology are being used now or proposed to be used in the future in three (3) of the following domains that is, in health, education, agriculture, business, telecommunication, manufacturing, banking, transport, wild life, Aquatics. Indicate what the technology is, how it is/will be used, (10 marks)
- b) What challenges have contributed to the slow adoption of these new emerging trends in the three domains identified in a) above? (10 marks)

(c). Briefly Examine the scientific, organizational, political, economic and social implications of the future technologies. (5 marks)

2. (a). With well known examples, define the following emerging educational and business technologies as being perceived in the world today; (10 marks)

- i. Blended learning
- ii. Gamification
- iii. E-branding
- iv. Digital signature
- v. Chatbots

(b). List four(4) sectors where Artificial intelligence can be applied and how? (10 marks)

(c). Explain two (2) popular medical technologies that are being used in Uganda's health facilities today. Briefly explain their contribution to the health sector (5 marks)

3. (a). With examples, explain 4 ways through which the emerging technologies can improve the agriculture sector of any low developing country (8 marks)

(b). Using examples Define the following cloud computing/computing terminologies; (10 marks)

- i. Software as a service (SAAS)
- ii. Continuous Integration/Continuous Development (CI/CD)
- iii. DevOps
- iv. Passwordless authentication
- v. Traffic

(c). Explain the effects of advancing information technology. (7 marks)

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