



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS YEAR FOUR SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE)

COURSE CODE : MIT 846E
**COURSE TITLE : E-LEARNING
TECHNOLOGIES**

DATE: 14/12/2015 TIME: 09:00 AM – 11:00 AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSORY) [20 MARKS]

- a) Define the following terms as used in e-learning [7 marks]
- i. E-learning
 - ii. Online learning
 - iii. Mobile learning
 - iv. Collaborative learning
 - v. Adaptive learning
 - vi. Personalized learning
 - vii. Context-awareness
- b) State four advantages of mobile learning (m-learning) [4 marks]
- c) State two technical and two social and educational challenges of mobile learning [2 mark]
- d) Discuss briefly how e-learning has evolved in relation to technological advancement [3 marks]
- e) What are some of the security issues associated with online learning [2 mark]
- f) Highlight one distinct feature of a MOOC learning environments and one challenge being faced by MOOC programs [2 marks]

QUESTION TWO [20 MARKS]

- a) With the increasing use of mobile and wireless technology, pervasive computing is gaining much popularity in Technology Enhanced Learning (TEL). Pervasive computing leads to pervasive learning.
- i. What is pervasive learning [2 marks]
 - ii. How has pervasive learning changed and still changing the traditional concept of learning [3 marks]
 - iii. Context-awareness is proposed as an essential component in pervasive learning. Explain [4 marks]
 - iv. Give at least four features or potentials benefits of context-awareness capabilities in TEL environment. [4 marks]
 - v. Identify classifications/categories of context that can be considered in a context-aware learning environment. Briefly explain them citing examples in each category [7 marks]

QUESTION THREE [20 MARKS]

- a) The issue of context is quickly becoming an important topic of research related to TEL domain. So far several studies have been carried out and a number of context-aware applications have been developed. Give an example of context-aware applications built specifically for TEL. Identify its contextual dimension focus, the purpose of the application and how it works to achieve its goals. Highlight its limitation if any. [10 marks]
- b) With the benefits of collaboration in education being clear and with the rapid development of online learning in higher education, the use of technology to facilitate collaborative learning (CL) is vital. There have been several innovative means to include and ensure effective CL in online learning environment.
- Discuss two main approaches that are currently being used to support CL in most online learning platforms [6 marks]
 - What are the main challenges experienced with the above mentioned approaches (in (i)). [4 marks]

QUESTION FOUR [20 MARKS]

- a) The application of recommendation systems is currently being explored in TEL due to the promising potential these systems offer. Explain two applications of recommender systems in TEL. [4marks]
- b) Name two learning management systems (LMS). Outline their strengths and weakness and if possible identify feature(s) within these systems that you find to be outstanding [6 marks]
- c) In order to achieve effective learning in e-learning, pedagogy has to be properly integrated with technology.
- What is pedagogy [2 marks]
 - Discuss the fundamentals of sound pedagogical practices in e-learning [8 Marks]

QUESTION FIVE [20 MARKS]

- a) The rapid advancements in mobile and wireless communication technologies has seen variety of mobile devices, embedded and invisible devices, as well as the corresponding software components being developed. The dynamic environment sets special requirements for usability.
- State some notable usability requirements that emerged/have emerged due to this dynamism [6 marks]

- ii. The notion of plasticity was introduced to address some of these usability requirements.
What is plasticity and how is it applied in e-learning? [4 marks]
- b) For web-based e-learning environments, outline key aspects to consider when:
 - i. Designing the interface and interaction [4 marks]
 - ii. Designing content [3 marks]
- c) Explain two methods that can be used in evaluating the usability of interactive systems [3 marks]