



# TECHNICAL UNIVERSITY OF MOMBASA

---

## INSTITUTE OF COMPUTING AND INFORMATICS

### DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

#### UNIVERSITY EXAMINATION FOR:

#### DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

#### ECS 2205: MOBILE PROGRAMMING

#### END OF SEMESTER EXAMINATION

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: 9 Mar 2016**

#### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

---

#### Question ONE

- a) Describe J2ME architecture (8 Marks)
- b) Describe the following terms: (6 Marks)
  - i) Kilo Virtual Machine (KVM)
  - ii) Obfuscation
  - iii) Compact Virtual Machine (CVM)
- c) Name and describe any THREE reasons for obfuscating J2ME code (6 Marks)

#### Question TWO

- a) Describe THREE design strategies to consider when developing for small devices (6 Marks)
- b) Differentiate between CLDC and CDC configurations (4 Marks)
- c) Briefly describe any FOUR classes provided by MIDP profile (8 Marks)
- d) Define the term Java Virtual Machine (2 marks)

### Question THREE

- a) Using a clearly labeled diagram, describe FOUR states of a standard MIDlet (8 Marks)
- b) Write down the syntax of a MIDlet skeleton (5 Marks)
- c) Describe any TWO tools that a developer requires to develop J2ME application (4 Marks)
- d) List and briefly describe any THREE versions of Java programming language (3 Marks)

### Question FOUR

- a) List and describe any FOUR APIs found in top layer of J2ME architecture (8 Marks)
- b) Using a well labelled diagram, describe the MIDlet development cycle (10 Marks)
- c) List any TWO differences between J2ME and J2SE (2 Marks)

### Question FIVE

- a) GUI of MIDP are not based on Abstract Windowing Toolkit (AWT). Why? (4 Marks)
- b) Outline THREE types of screens found in the MIDP API (3 Marks)
- c) List and describe FIVE exceptional classes provided by *javax.microedition.rms* package (10 Marks)
- d) Describe J2ME (3 Marks)