



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 13M – Y2 S2)

ECS 2205: MOBILE PROGRAMMING

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One (Compulsory)

- a) Define a mobile device. (2 marks)
- b) List the characteristics of a mobile device (3 marks)
- c) Identify at least 3 mobile operating systems available in the market currently. (3 marks)
- d) Explain the following object oriented programming concepts. (8 marks)
 - (i) Class
 - (ii) Object
 - (iii) Inheritance
 - (iv) Super Class
 - (v) Sub Class
- e) Define a MIDlet life cycle (1 marks)
- f) List the stages a midlet goes through in its life cycle. (3 marks)

Question Two

- a) Study the following code and answer the questions that follows:

```
Public class Helloworld extends MIDlet
Form helloForm;
command exitcommand;
1 Public Helloworld ( ) {
3 { exitcommand = new command ("Exit", command.EXIT, 1);
  helloFORM = new Form ("Hello world");
  hellFORM .append (new string ("Hello world"));
  helloFORM. addCommand (exit command);
}
Public void start App ( ) {
Display.get Display (this). set Current (helloform);
}
Public void pauseApp ( ) { }
Public void destroy App ( ) { }
}
```

- (i) What name is given to the section of code marked 1?
What is the main role of this code? (3 marks)
 - (ii) Define declaration as used in programming giving examples from the code above. (3 marks)
 - (iii) Identify the section of code marked 3 giving its role in the above code. (3 marks)
 - (iv) When this program is run, what is the likely output? (1 mark)
- b) Differentiate between low level and high level user interface elements giving examples in each case. (6 marks)
 - e) Explain the following classes: (4 marks)
 - (i) Canvas

- (ii) Alert

Question Three

- a) Write a simple J2ME program that can be used to display login interface to a user. **(10 marks)**

The login interface should have the following:

- (i) Two textfields, for username and password
 - (ii) Two commands, one for login and another for cancel
- b) Differentiate between Textfield and Text Box, given examples when each can be used in a J2ME program. **(4 marks)**
 - c) List THREE Abstract method contained in a MIDlet class that are necessary for the MIDlet to execute, explain the role of each identified method. **(6 marks)**

Question Four

Explain the following classes, clearly describing the main role in a program. **(20 marks)**

- (i) Screen and Canvas
- (ii) Image class
- (iii) Date and Ticker class
- (iv) Alert and string Item

Question Five

- a) Define a database. **(2 marks)**
- b) J2ME uses record management storage (RMS) for persistent storage.
 - (i) Explain two rules which must be adhered to when naming record stores. **(2 marks)**
 - (ii) List and explain four interfaces defined by RMS **(8 marks)**
 - (iii) Explain at least FOUR exceptions defined by RMS package. **(8 marks)**