



**THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE**

**(A Constituent College of JKUAT)**

(A Centre of Excellence)

# **Faculty of Engineering & Technology**

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

**UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF  
TECHNOLOGY IN INFORMATION TECHNOLOGY**

(BTech. IT M11)

EIT 4310: ADVANCED WEB APPLICATION PROGRAMMING

**SPECIAL/SUPPLEMENTARY EXAMINATION**

**SERIES: OCTOBER 2012**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A & B**

Answer **ALL** questions in section **A** and any other **TWO** from section **B**

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

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**SECTION A (COMPULSORY)**

**Question One (30 Marks)**

- a) Briefly explain the following terms as used in Java persistence API. (6 marks)
- i) Entity class
  - ii) Entity manager
  - iii) Persistence Unit.
- b) Explain **TWO** types of persistence that can be used by entity class. (4 marks)
- c) Explain any two types of methods that are used with entity class to manipulate object data. (4 marks)
- d) State the meaning of the following annotations as used in entity class.

- i) @ id
- ii) @ column
- iii) @ entity

(6 marks)

e) Distinguish between the following terms as used in web application programming

- i) Web application architecture
- ii) Web server
- iii) Web client
- iv) Web application

(10 marks)

### **SECTION B (Answer Any Two Questions)**

#### **Question Two (20 marks)**

- a) Explain the meaning of the annotation @generatevalue and explain various strategies for generating the values. (6 marks)
- b) Design an entity class called customer with two data members “SSN” and “name” where SSN is the primary key. Include all the getter and setter methods. Use field properties. (14 marks)

#### **Question Three (20 marks)**

- a) Explain the following web technologies.
  - i) Servlet
  - ii) Java server pages
  - iii) Applet
  - iv) Entity javabeans
  - v) Netbeans

(10 marks)
- b) Write a java server page that picks the data from the HTML code below and stores in a session bean called Hellobean with two data members, name and email.

#### **Html Code**

```

<html>
  <head><title> Hello </title></head>
  <body>
    <h3> Enter your name and email address </h3>
    <form method_ = "get" action = "hello.jsp">
      <p> I=input type = "text" name = "name" value = "size" =
        "20"/>
      Name</p>
      <p> input type = "text" name = "email" value = "size" = "20"
        </p>
      Email </p>
      <p> input type = "Submit" name = "send" value = "send"/>
    </form>
  </body></html>

```

(10 marks)

#### **Question Four (20 marks)**

- a) Briefly distinguish the following as used in web programming.

- i) Stateless bean
- ii) Stateful bean
- iii) Message bean

**(6 marks)**

- b) Write a Java server page that picks the data from a session bean called Hellobean with two data members, name and email and echoes the data on the screen. **(14 marks)**

**Question Five (20 marks)**

- a) Explain any **THREE** java technologies that provide platforms for application programming. **(6 marks)**
- b) Explain the J2EE platform architecture for web application programming. **(8 marks)**
- c) Define the term “Integrated Development Environment” (IDE) as used in software development and outline any **FOUR** examples of IDE used for web application programming. **(6 marks)**