



TECHNICAL UNIVERISTY OF MOMBASA

# Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:  
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY  
(BTIT 11M)

**EIT 4310: ADVANCED WEB APPLICATION PROGRAMMING**

END OF SEMESTER EXAMINATION  
**SERIES: DECEMBER 2013**  
**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** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

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**Question One (Compulsory)**

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

- (i) Web application architecture
- (ii) Web server
- (iii) Web container
- (iv) Web client
- (v) Web application

(10 marks)

### Question Two

a) Explain the meaning of the annotation @generate value 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 method. Use field properties. (14 marks)

### Question Three

a) Explain the following web technologies:

- (i) Servlet
- (ii) Java server pages
- (iii) Applet
- (iv) Entity java beans
- (v) Net beans

(10 marks)

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

HTML

```
<html>
```

```
<head> <title> Hello</title> </head>
```

```
<body>
```

```
<list> Enter your name and email address:<
```

```
<form method =”get” action = “hallo”>
```

```
<P> <input type = “text” name = “name” “value=”  
size = “20”/>Name </P>
```

```
<P> <input type = “submit” name “send” value = “send”  
/></P>
```

```
</form>
```

```
</body> </html>
```

(10 marks)

### Question Four

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 serverpage that picks the data from a session' beam called hellobeam with two data members, name and email and echoes the data on the screen (14 marks)

### **Question Five**

- a) Explain any THREE java techniques that provide platforms for application programming **(6 marks)**
- b) Explain the JZEE platform architecture for web application programming **(8 marks)**
- c) Define the term IDE as used in software development and outline any FOUR examples of IDE used for web application programming **(6 marks)**