



**JARAMOGI OGINGA ODINGA UNIVERSITY OF  
SCIENCE AND TECHNOLOGY**

**SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS**

**DIPLOMA IN LINUX ENGINEERING**

**COURSE CODE: ICS 2211**

**COURSE TITLE- BUILDING SECURE DYNAMIC WEB APPLICATIONS**

**EXAMINATIONS 2012/2013**

**TIME 2HRS**

**INSTRUCTIONS:**

**This paper contains five (5) questions. Question ONE is Compulsory and any other TWO questions**

**QUESTION ONE –COMPULSORY [30 MARKS]**

- a)** List SIX most common SSL-related issue alerted by the web browser **[6 Marks]**
- b)** Using examples, clearly differentiate between following as used in PHP scripts and Web Applications Development. **[9 Marks]**
- i) OOP and Procedural Programming
  - ii) Self signed certificate and third party certificates
  - iii) Symmetric and Asymmetric cryptography
- c)** What do the following acronyms stand for in full? Highlight their importance in Web Applications Programming: **[10 Marks]**
- i) CGI
  - ii) HSTS
  - iii) PKI
  - iv) HTTPS
  - v) SSL/STL
- d)** Discuss FIVE operators you can use while writing computer programs **[5 marks]**

## QUESTION TWO [20 MARKS]

- a) Write a HTML script that simulates clients' Registration Form. The client can enter their Surname(s), Other Names, Gender, Usernames Password (and confirmation) and their favourite show as indicated in the form below. **[8 Marks]**

**CLIENT REGISTRATION FORM**

<b>Surname:</b>	<input type="text"/>
<b>Other Name:</b>	<input type="text"/>
<b>Gender:</b>	<input checked="" type="radio"/> <b>Male</b> <input type="radio"/> <b>Female</b>
<b>Enter User Name:</b>	<input type="text"/>
<b>Your Password:</b>	<input type="text"/>
<b>Confirm Password:</b>	<input type="text"/>
<b>How did you find out about us?</b>	
<input checked="" type="radio"/> <b>A Friend</b>	<input type="radio"/> <b>Print Media</b>
<input type="radio"/> <b>Online</b>	<input type="radio"/> <b>TV</b>
<input type="button" value="Submit"/>	<input type="button" value="Reset"/>

The data is sent to a php script accessible at registration.php.

- b) Write a PHP/Perl script that displays show the number of clients per option **[6 Marks]**
- c) Explain the difference between the static content and the dynamic content **[4 Marks]**

### **QUESTION THREE [20 MARKS]**

- a) Design a simple mobile application that simulates how registered users can send money via M-PESA to help in the recent Westgate terror attack. The application should send an acknowledgement back to the sender with the contribution made. **[10 Marks]**
- b) Explain how HSTS ensures extra security by protecting your website from attacks caused by errors in applying the SSL **[8 Marks]**
- c) Discuss the TWO ways of testing while developing online applications **[2 marks]**

### **QUESTION FOUR [20 MARKS]**

- a) Discuss the software development life cycle as used in software engineering **[10 Marks]**
- b) Highlight any FOUR security issues that must be considered while developing web applications **[4 Marks]**
- c) Explain how cookies and sessions can compromise your website security **[6 Marks]**

### **QUESTION FIVE [20 MARKS]**

- a) Using an example, discuss the difference between a for loop and a while loop in web development **[6 Marks]**
- b) Explain how you can use the SQL code in PHP to login to a MySQL database. Save the code in a file called datalogin.php **[8 Marks]**
- c) Explain why htmlentities are a core aspect of online applications. Write the code snippet to implement the htmlentities for your online applications **[6 marks]**

**END**