



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

**UNIVERSITY EXAMINATION FOR THE DIPLOMA IN INFORMATION
TECHNOLOGY**

4TH YEAR FIRST SEMESTER 2014/2015 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: IIS 3412

COURSE TITLE: WEB APPLICATIONS DEVELOPMENT

EXAM VENUE:

STREAM: BIS

DATE:

EXAM SESSION:

TIME: 2.00 HOURS

INSTRUCTIONS:

- 1. Answer Question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE – 30 MARKS [COMPULSORY]

- a) Define the following terms and give the importance of each in web browsing. (6 Marks)
- i. Server side scripts
 - ii. Cascading style sheet
 - iii. Java Server Page
- b) State three roles of client side scripts in an enterprise web-based application. (3 Marks)
- c) Outline the major differences between the following forms of java beans
- i) Session beans
 - ii) Entity bean
 - iii) Message- driven bean (6 Marks)
- d) Briefly explain two main uses of HTML forms in your web page. (2 Marks)
- e) What is an exception as used in a Servlet file? (2 Marks)
- f) Describe any two methods of protecting your machine from malicious programs from the Internet. (4 Marks)
- g) Distinguish between POST and GET methods in an HTML form. (4 Marks)
- h) Describe any three issues that can arise when browsing the internet. (3 Marks)

QUESTION TWO – 20 MARKS

- a) Describe five major roles of Java Server Pages in your Enterprise Web business Application. (5 Marks)
- b) Outline any three benefits of using client side programming in any internet applications. (3 Marks)
- c) Write Java Server Page code that will validate HTML form elements in a registration form with items of your choice, consisting of at least five text fields and two buttons.(12 Marks)

QUESTION THREE – 20 MARKS

- a) Describe the four basic methods that constitute the lifecycle of a Servlet. (8 Marks)
- b) Discuss four major benefits of Using Java Server Pages (JSP) in your web Page (8 Marks)
- c) List four limitations of Servlets as used in Enterprise application development. (4 marks)

QUESTION FOUR – 20 MARKS

- a) What output stream should you use to send images to the browser? What content types do you have to set for the response? (4 Marks)
- b) Write a servlet that enables the user to change the password from an HTML form consisting of two fields for username and password. (4 marks)
- c) Suppose that the user information is stored in a database table named *Accounts* with three columns, username, password and name, where name is the real name of the user. Write a serve servlet performs the following tasks:
- i. Verify that the username and old password are in the table. If not, report the error and redisplay the HTML form. (4 Marks)
 - ii. Verify that the new password and the confirmed password are the same. If not, report this error and redisplay the HTML form. (4 Marks)
 - iii. If the user information is entered correctly, update the password and report the status of the update to the user as shown in figure

QUESTION FIVE – 20 MARKS

- a) Describe the importance of the following objects as used in web application development.
- i) `HttpServletRequest`
 - ii) `HttpServletResponse`. (4 Marks)
- b) Describe the lifecycle of a servlet program. (6 Marks)
- c) Create a servlet that requests the users for their names and then displays name of the user entered as well as the current date and time. (10 Marks)