



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

**SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS**

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

**3<sup>RD</sup> YEAR 2<sup>ND</sup> SEMESTER 2016/2017 ACADEMIC YEAR**

**MAIN CAMPUS**

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**COURSE CODE: ICT 3324**

**COURSE TITLE: SERVICE ORIENTED COMPUTING**

**EXAM VENUE:                      STREAM:    ICT**

**DATE:                              EXAM SESSION:**

**TIME: 2.00 HOURS**

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**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)

- a) State and explain the meaning of the following protocols as they are used in web applications.
- (i) **SMTP**
  - (ii) **PoP**
  - (iii) **IMAP (6 marks)**
- b) Explain the web application development life cycle. **(8 marks)**
- c) Explain the functions of the following servers that can be found on the internet.
- i. Web server
  - ii. Domain Name System Server **(6 marks)**
- d) Explain in your own terms what you understand by the term web semantic. **(3 marks)**
- e) Define the meaning of Resource Description Framework (RDF). **(4 Marks)**
- f) Add comments indicating what each statement of the code below does. Determine the output of the program. **(3 Marks)**

```
<SCRIPT LANGUAGE="JavaScript">
var a,b,c;
a=4;
b=++a;
c=a++;
document.write("a is ",a);
document.write("<br> b is ",b);
document.write("<br> c is ",c);
</script>
```

### Question Two (20 Marks)

- a) Using examples explain the following
- i. HTML tag
  - ii. HTML link
  - iii. HTML frames. **(6 marks)**
- b) A student was designing a web page; he wanted to implement the following:
- ✓ Page background color is green, text color is red, hyper link colors:
  - ✓ Before visiting white and after visiting orange.
  - ✓ A white rule of 10 pixels thick at the top and bottom of the page.
  - ✓ Should also Display the following list

### Countries in Africa

- Kenya
- Tanzania
- Uganda
- Somalia

Write the HTML code to implement his requirements.

**(8 marks)**

- c) State and give an example of two advantages of using a web interface. **(2 marks)**
- d) State and explain the three-layer web architecture. **(4 marks)**

### Question Three (20 Marks)

- a) Using at least two examples explain the function of event handlers in JavaScript. **(4 Marks)**
- b) What is the work of URL in the web application? **(3 Marks)**
- c) State the three stages of the web application architecture evolution. **(3 Marks)**
- d) State and explain the difference between server-side scripting and client-side Scripting. **(4 marks)**
- e) With aid of examples describe three types of popup boxes that can be used to get data or present a message to the user in a java script. **(6 marks)**

### Question Four (20 Marks)

- a) List and explain the services offered by semantic web services. **(6 marks)**
- b) Name and explain three limitations of the web today. **(6 marks)**
- c) State the function of the following members of the TCP/IP protocol suite **(2 Marks)**
  - i. Hypertext Transfer Protocol(HTTP)
  - ii. Transmission Control Protocol (TCP)
- d) Discuss any three principles of user Interface Design that you would apply to improve the quality of user interface design **(6 marks)**

**Question Five (20 Marks)**

a) Discuss three disadvantages of using frames on web sites. **(6 marks)**

b) Give three limitations of the semantic web. **(3 marks)**

c) State and explain the approaches used to speed up application development.  
**(5 marks)**

d) In RDF schema explain the meaning of the following words as used in the schema

(iv) Select

(v) From

(vi) Where

**(6 marks)**