

**UNIVERSITY OF BOLTON**

**OFF CAMPUS DIVISION**

**WESTERN INTERNATIONAL COLLEGE FZE**

**BSC (HONS) COMPUTING**

**TRIMESTER TWO EXAM 2021/2022**

**WEB AND SYSTEMS BASED PROGRAMMING**

**MODULE NO: CPU6003**

**Date: Saturday 30<sup>th</sup> April 2022**

**Time: 2:00pm – 4:00pm**

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**INSTRUCTIONS TO CANDIDATES:**

**There are FOUR questions on this paper.**

**Answer ALL questions**

**All questions carry equal marks.**

**Marks for parts of questions are shown in brackets.**

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**Q1.**

- a. Describe SOAP. Write the SOAP request and response messages for the given case provided.

A Mobile Distribution company SkyTech deals with buying and selling of Mobiles through their webservices. The *GetMobilePrice* SOAP request is sent from the client to their server. The request has a *MobileName* parameter. The *MobileName* and a *MobilePrice* parameter will be returned in the SOAP response. The namespace for the function is defined in "*http://www.skytech.org/mobiles*".

**(15 marks)**

- b. Analyse the need for Integrating Data from various data sources into a web-based application.

**(4 marks)**

- c. Identify the service registry protocol used in Web services. Comment on the functions of the protocol identified. Identify the types of information in the service registry.

**(6 marks)**

**Total 25 marks**

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**Q2.**

a. Identify the protocol categories in the Web Service Protocol Stack. Illustrate with a diagram, the Protocol Stack and provide examples of which protocols are used in the protocol categories.

**(10 marks)**

b. Illustrate with a diagram, the Service Oriented Architecture.

**(4 marks)**

c. Explain the role of a Server Stub in RPC.

**(5 marks)**

d. Identify and describe Cloud Computing service Models

**(6 marks)**

**Total 25 marks**

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**Q3.**

- a. BestCare Hospital is a small hospital started by a group of newly graduated doctors. They record details of patients like height in foot, weight, age, symptoms and others. Their patients sometimes are confused in the units used to describe height and weight. BestCare wishes to provide a web interface that would help patients see their records and allow easy conversion of height from foot to inches. The formula for conversion of Height from foot to inches is as below:

$$1 \text{ foot} = 12 \text{ inches.}$$

As a web developer, you are assigned the task of creating a web service to convert Height provided in foot to inches. Write a SERVER.PHP file for the given scenario.

**(6 marks)**

- b. With reference to part '3a', write a PHP web service client script named CLIENT.PHP to test the operation of the web service function.

**(4 marks)**

- c. Two parties involved in an online business perform transactions using web services. They have data format concerns of the SOAP messages being exchanged among them. Hence, they require that the SOAP messages should be Validated. Identify the type of binding and encoding required for this purpose. Compare and contrast it with different WSDL Binding Style and same SOAP Encoding Style type.

**(9 marks)**

- d. Differentiate between Web Store, Portal and Broker Model of B2C E-Commerce

**(6 marks)**

**Total 25 marks**

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**Q4.**

a. Sunrise Mart is a medium size Grocery Store in Mamurah, Ras al Khaimah. The owner of Sunrise Mart, Ms. Noora, wishes to expand her business by integrating with more suppliers for new products and increase sales. She has approached your Web Development Firm to help her integrate with these Suppliers through webservices using XML Messages. The XML message from Suppliers to Sunrise Mart Grocery includes Product Details of different available products. Each product has information like: ProductId, ProductName, and Price. Write an XML file for the Product Details sent from Supplier to Sunrise Mart which has details of available products. Provide data for 2 products only

**(10 marks)**

b. Mention all the three methods of developing application.

**(3 marks)**

c. Identify a less risky outsourcing option. Provide an example of a web service that hosts corporate Web sites and Webstores at various service levels.

**(5 marks)**

d. Outline any four advantages and three disadvantages of Ecommerce.

**(7 marks)**

**Total 25 marks**

**END OF QUESTIONS**

**END OF PAPER**