University of Colombo, Sri Lanka

University of Colombo School of Computing

BIT

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2022— 2nd Year Examination — Semester 4

IT4206 — Enterprise Application Development

Part 2 - Structured Question Paper

(ONE HOUR)

To be completed by the candidate							
Index Number							

Important Instructions

- The duration of the paper is **ONE HOUR**.

- The medium of instructions and questions is English.

- This paper has **2** questions and **4** pages.

- Answer both questions. Both questions carry **equal** marks.

- **Write your answers in English** using the space provided **in this question paper**.

- Do not tear off any part of this answer book.

- Under no circumstances may this book (or any part of this book), used or unused, be removed from the Examination Hall by a candidate.

- Questions appear on both sides of the paper. If a page is not printed, please inform the supervisor immediately.

- Any electronic device capable of storing and retrieving text, including electronic dictionaries and mobile phones, are **not allowed**.

- Calculators are **not allowed**.

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To be completed by the examiners	
1	
2	
Total	

1. (a). Consider the statements below and state whether they are true or false. If the statement is true, write T; if false, write F in the space provided.

[24 marks]

    i. HTTP protocol and Web servers are stateless   **T**

    ii. Session is a conversational state between the server and the client   **T**

    iii. Each request and response between the client and the server should have the session information passed between them to maintain the sessions   **T**

    iv. The deployment descriptor cannot control when the servlet is loaded by the server   **F**

    v. Application server is another name for a web server   **F**

    vi. Web.xml can be replaced by the use of annotations   **F**

(b). What is the exclusive identifier used for session maintenance in Servlet Session Management?

[4 marks]

JSESSIONID

(c). What are the four (4) methods to exchange the exclusive identifier generated by the server in session management?

[16 marks]

Cookies,
URL rewriting,
Hidden Form Field,
Secure Socket Layer (SSL)

(d). What is the default method of exchanging the exclusive identifier between the server and the client in session management?

[6 marks]

Cookies

2. (a). Mention whether the each of following features is of JavaSE or JavaEE in the given space.

[8 marks]

    i. Provides the core functionality of the Java programming language

    ii. Includes APIs like Servlets and WebSocket

    iii. Mainly used for web applications

    iv. Consists of a virtual machine, development tools, deployment technologies, and class libraries

JavaSE
JavaEE
JavaEE
JavaSE

(b). i. List down two (2) features of WebSockets.

[8 marks]

> Bidirectional, stateful protocol, Connection between client and server stays util the it is terminated by one of the parties

    ii. What annotation in WebSockets can be used to annotate the function that should be called when a new connection is established to the particular endpoint?

[6 marks]

> @OnOpen

    iii. What are the correct annotations that can be used for `<blank1>` and `<blank2>` in the following code segment?

```
import javax.websocket.server.ServerEndpoint;
import javax.websocket.OnMessage;

<blank1 >("/echo")
public class EchoServer {
    <blank2>
      public String echo(String incomingMessage) {
            return "Message - <br>" + incomingMessage;
        }
}
```
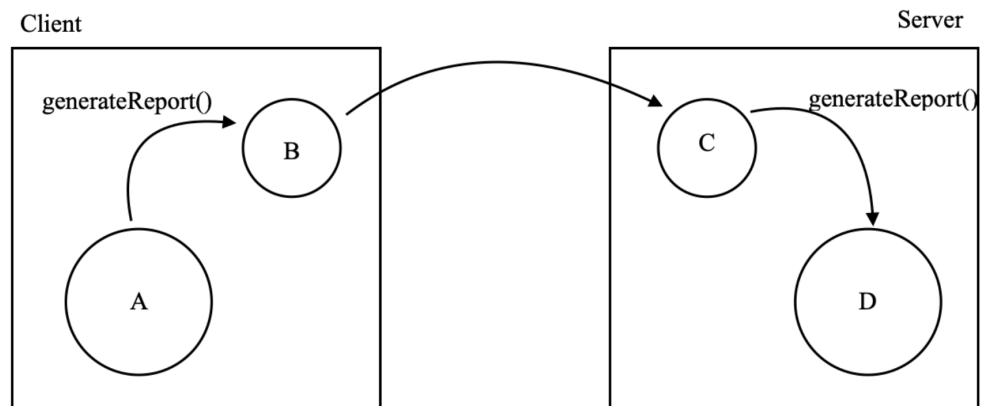
[12 marks]

> blank1 - @ServerEndpoint,
> blank2 - @OnMessage

(c). Following diagram shows the calling of the method ***generateReport()*** in a remote machine. Name the components labeled in A, B, C and D.

Client   Server

generateReport()   generateReport()

B

A

C

D

[16 marks]

A - client object,
B - RMI stub,
C- RMI Skeleton,
D - Server object

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