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MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

FINAL EXAMINATION

JANUARY 2016 SEMESTER

SUBJECT CODE	:	ISB 31203
SUBJECT TITLE	:	SOFTWARE INTEGRATION
LEVEL	:	BACHELOR
TIME / DURATION	:	(2.5 HOURS) 9.00 am – 11.30 am
DATE	:	25 MAY 2016

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.

2. This question paper is printed on both sides of the paper.

3. This question paper consists of ONE (1) section only - Section A.

4. Answer only FOUR (4) questions in Section A.

5. Please write your answers on the answer booklet provided.

6. Answer all questions in English.

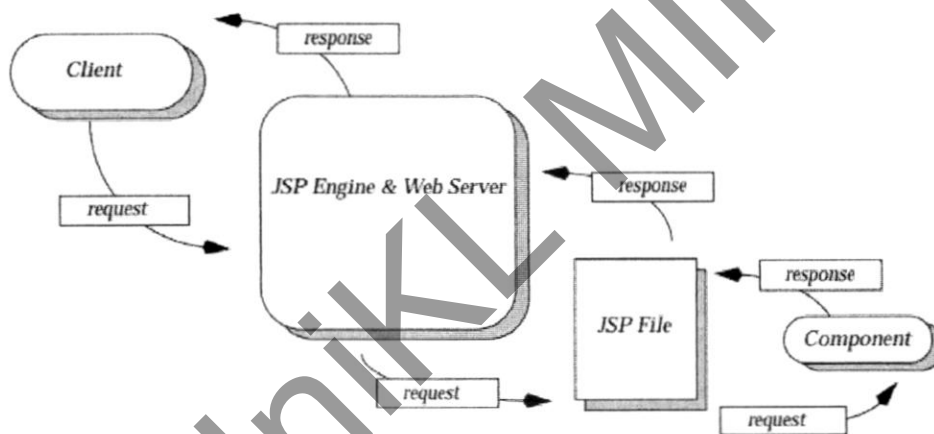THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 100 marks)

INSTRUCTION: Answer any FOUR (4) questions only.
Please use the answer booklet provided.

Question 1

A JavaServer Pages component is a type of Java servlet that is designed to fulfill the role of a user interface for a Java web application. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands. A servlet is a Java programming language class used to extend the capabilities of a server.

(a)   Describe the following processes.   (6 marks)

(b)   Outlines in details the THREE types of Java Server Page (JSP) constructs.   (6 marks)

(c)   Discuss on the FIVE primary purposes of the practical consideration   (10 marks)
        elements.

(d)   Writes a JSP code segment to print hello world and the user IP address.   (3 marks)

Question 2

Concurrency is an important area of computer science studied in different contexts: machine architectures, operating systems, distributed systems, database, etc. In concurrent programming, there are two basic units of execution: *processes* and *threads*.

(a)   There must be a mechanism needed by the process to support concurrency,   (5 marks)
        outlines the mechanism involved.

(b)   Writes the application area that implements concurrency.   (5 marks)

(c)   Explain the definition and function of concurrency.   (5 marks)

(d)   Discuss on the dining philosopher's concept and draws the illustration.   (10 marks)

Question 3

Coach online is the most popular brand nowadays that sells items from UK i.e. the exclusive handbags, watches, shoes, clothing, accessories etc. Customer will only have to shop online for ordering the items before they delivered the items to given address.

(a)   Draw a suitable use cases and justifies your ideas.   (10 marks)

(b)   Designs the mock-up GUI of the application.   (10 marks)

(c)   Identify the business process/ rules involved. Elaborates your findings.   (5 marks)

Question 4

This project aims at development of a Hotel Reservation System which facilitates the hotel customers to manage their reservations online, and the hotel administrators to modify the backend databases in a user-friendly manner. The customers are required to register on the server for getting access to the database and query result retrieval. Upon registration, each user has an account which is essentially the 'view level' for the customer. The account contains comprehensive information of the user entered during registration and permits the customer to get access to his past reservations, enquire about room fare and availability of room, make a fresh reservations, update his account details, etc. The hotel administrator is the second party in the transactions. The administrator is required to login using a master password, once authenticated as an administrator, one has access and right of modification to all the information stored in the database at the server. This includes the account information of the customers, attributes and statistics of branches, description of the room rates and physical description of rooms, all the reservations that have been made, etc. The hotel administrator has the right to modify any information stored at the server database.

Based on the above case study, answer the following questions.

(a) Briefly outline the technologies being used. (6 marks)

(b) Give the additional features that you wish to propose for improvement. (4 marks)

(c) Discuss the benefits of the Hotel Reservation System. (5 marks)

(d) Write a code segment to link to the database and query records from the database. (5 marks)

(e) Criticize the development of the system. (5 marks)

Question 5

Macy's Online Education System

The project was written in Java before; it had caused lots of technical glitches for the client's customers. To run the system, Java runtime installation was needed, and the program must work through a firewall. My-Tech redeveloped the system and met the requirement for online education. It now works usably and flexibly for both coaches and students to have real-time communication as if they are in a chat room. In order to ensure the coaches' leading status, they adopted a different system log management methods to separate the coaches' authority level. The workshop (chat room) needs coaches, tutors to manage in real-time, so the system offers different interfaces to coaches and tutors and students in view of the different authorities. And there is question menu and help document in the coaches' interface for them to answer the students' questions. The balance between flexibility and interaction speed was realized through the roaster counting management and the users' voting management.

Based on the above case study, answer the following questions.

(a) Discuss the business processes available from the system.   (8 marks)

(b) Briefly explains the technologies that are being used.   (6 marks)

(c) Identify the users of the system.   (6 marks)

(d) Draws a suitable class diagram for the system.   (5 marks)

END OF EXAMINATION PAPER