



0031

THE OPEN UNIVERSITY OF SRI LANKA  
DEPARTMENT OF COMPUTER SCIENCE  
B.Sc. (IT) DEGREE PROGRAMME 2024/2025  
ITU5305: ENTERPRICE APPLICATION DEVELOPEMENT  
FINAL EXAMINATION: SEMESTER 1

Reg. No:.....

DURATION: TWO HOUR ONLY (2 HOUR)

Date: 14<sup>th</sup> June 2025

Time: 01.30pm – 03.30pm

Answer Only Four Questions.

Question 01

- a) What is **Enterprise Architecture (EA)**? (05 Marks)
- b) Identify and briefly describe **any five (05)** commonly used Enterprise Architecture frameworks. (05 Marks)
- c) State and explain **five (05)** benefits of developing Enterprise Applications in a business environment. (05 Marks)
- d) A student portal at The Open University of Sri Lanka is currently being developed as an enterprise web application to help students access academic resources, view exam timetables, submit assignments, and communicate with lecturers. As part of the development team, you are responsible for designing architecture that supports thousands of concurrent users during peak times (e.g., registration or exam result releases). Briefly explain how you would design the architecture of this enterprise application to ensure scalability, maintainability, and high availability. (10 Marks)

Question 02

- a) Define a **Web application**? Provide a relevant example to support your answer. (05 Marks)
- b) Discuss the key reasons for using **web applications** in modern computing environments.? (05 Marks)
- c) Explain the advantages of the **cloud application model** from the perspective of the end-user. (05 Marks)
- d) The IT department of The **Open University of Sri Lanka** is planning to upgrade its digital infrastructure to improve administrative efficiency, student services, and academic

resource management. As part of this initiative, they are considering the adoption of various enterprise application software solutions.

Based on the above scenario, list **five (05)** examples of enterprise application software that the university could use to support its operations. Briefly explain the purpose of each application in the university context. (10 Marks)

### Question 03

- a) Define **Supply Chain Management (SCM)** and explain its significance in modern business operations.? (05 Marks)
- b) Briefly explain each phase of **Supply Chain Management (SCM)** in the context of Enterprise applications.? (05 Marks)
- c) Describe the working process of **Supply Chain Management (SCM)**? (05 Marks)
- d) How does a **Supply Chain Management (SCM)** system help an electronics manufacturer to avoid delays in production by ensuring raw materials are delivered on time? (10 Marks)

### Question 04

- a) Define the **Enterprise Information System (EIS)** tier in Enterprise applications. (05 Marks)
- b) Describe how the **Enterprise Information System (EIS) tier architecture** of an Enterprise Information System enhances scalability and flexibility? (05 Marks)
- c) Identify and explain **five (05)** common challenges faced during the implementation of **Enterprise Information System (EIS)** tier in Enterprise Application System? (05Marks)
- d) <sup>4</sup> During the development of a new Student Management System at The **Open University of Sri Lanka**, the IT team emphasizes the role of the Enterprise Information Tier to ensure the system runs smoothly across all departments. The university wants the system to handle student records, course registrations, examination results, and communication between faculties. Based on this, list and briefly explain **five (05)** important roles of the Enterprise Information Tier in the success of such a university-wide system. (10 Marks)

### Question 05

- a) Explain the role of **Enterprise JavaBeans (EJB)** in enterprise application development. (05 Marks)
- b) Compare and contrast **Session Beans and Entity Beans**, highlighting the key differences between the two? (05 Marks)
- c) Explain the concept of a **Stateful Session Bean**. How does it differ from a **Stateless session bean**? (05 Marks)
- d) Imagine you are a software architect working on a large-scale banking application. Your team is considering using **Enterprise Java Beans (EJB)** to handle business logic, transaction management, and remote method calls. You want to evaluate the pros and cons before making the decision. Based on this scenario, what are the **five (03)** advantages and **five (03)** disadvantages of using **Enterprise Java Beans (EJB)** in the banking application? (10Marks)

### Question 06

- a) Define **Entity Providers** and explain their role in the context of Enterprise application development.? (05 Marks)
- b) List of **five (04)** commonly used classes in **Java Database Connectivity (JDBC) API**. (05 Marks)
- c) Discuss the different types of **Java Database Connectivity (JDBC) Architecture** used in Enterprise applications? (05 Marks)
- d) You are developing a Java application that needs to interact with a database to store and retrieve customer information. To connect your Java program with the database, you are considering using **Java Database Connectivity (JDBC)**. What are the key benefits of using **JDBC** for database connectivity in your Java application? (10 Marks)

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