



*(The University of Choice)*

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**UNIVERSITY EXAMINATIONS**

**MAIN CAMPUS**

**2021/2022 ACADEMIC YEAR**

**THIRD YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE**

**OF**

**BACHELOR OF INFORMATION TECHNOLOGY &  
MATHEMATICS**

**COURSE CODE: BIT 325E**

**COURSE TITLE: ENTERPRISE APPLICATION  
DEVELOPMENT**

**DATE: 29/04/2022**

**TIME: 8:00A.M-10:00A.M**

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**INSTRUCTIONS TO CANDIDATES**

Answer questions ONE and any other TWO questions.

**TIME: 2 HOURS**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ▲

### QUESTION ONE (30 MARKS)-COMPULSORY

- a) What is the difference between a container and component in J2EE architecture  
[4 marks]
- b) What are the problems of using middleware to integrate applications? [3 marks]
- c) The solutions to middleware is the use of EAI, Define Enterprise application integration and state its functions [4 marks]
- d) Regardless of application domain or industry vertical, technology platform, and client-side technology, everyone agrees that three fundamental concepts should be decoupled and kept separate, state this components that should be decoupled [3 marks]
  - e) What is MVC [3 marks]
  - f) What are the reason for MVC [4 marks]
  - g) State and explain the three pieces or components of MVC pattern [9 marks]

### QUESTION TWO (20 MARKS)

- a) State and explain any five benefits of J2EE platform (10 marks)
- b) Discuss the challenges of J2EE platform [10 mark]

### QUESTION THREE (20 MARKS)

- a) What is SOA [2 marks]
- b) Explain the SOA design concepts [8 marks]
- c) State the benefits of SOA [4 marks]
- d) Define the following [6 marks]
  - i. SOAP
  - ii. XML
  - iii. Web service

### QUESTION FOUR (20 MARKS)

- a) What is JSP? [2 marks]
- b) State four benefits of JSP [8 marks]
- c) What is a java servlet? [2 marks]
- d) State the advantages of servlets of Common Gateway Interface (CGI) [8 marks]

### QUESTION FIVE (20 MARKS)

- a) Define state tools and technologies used at different layers of MVC [6 marks]
- b) State and explain services provided by enterprise Java Bean (EJB) container [10 marks]
- c) State any four functions of servlet [4 marks]