February, 2021   **Computer Science and Engineering**
Fifth Semester   **Enterprise Programming**

Time: Three Hours   Maximum : 50 Marks

Answer ALL Questions from PART-A.   (1X10 = 10 Marks)
Answer ANY FOUR questions from PART-B.   (4X10=40 Marks)

1. Answer all questions   (1X10=10 Marks)
   a   Differentiate between PUT and POST operations in REST API
   b   Name the types of JDBC drivers?
   c   Write the syntax of JSP expression tag.
   d   List any two implicit objects in JSP?
   e   Write the syntax for <c:if> tag.
   f   Name the annotation with which url mapping of a servlet can be done.
   g   What does JSTL stand for?
   h   Name two types of Session beans
   i   What is the protocol used by web sockets?
   j   What is the header sent by a client socket in the initial handshake?

Part - B

2.a   Name the different APIs for the development of JAVA EE Applications and explain about Java   5M
     EE platform architecture with a neat sketch.

   b   Code a servlet that takes Regd.No. and the Name of a student and inserts in the *rolls* table of   5M
     student database.

3.a   Explain the classes and interfaces needed to code a JDBC application.   5M

   b   Design a JDBC program that connects to a *dept* table of *emp* database and prints the details of all   5M
     the departments.

4.a   Design a JSP to find the factorial of a given number and sends it as reponse.   5M

   b   Explain all the implicit objects available in a JSP.   5M

5.a   Code a JSF application which registers a user with a name (required) and an email id (to be
     validated). Design the backing bean with all the needed methods.
                                          5M

   b   Explain any three managed bean scopes.   5M

6.a   Explain the web services and REST API.   5M

   b   Code of a web service providing GET and POST operations on a collection of resources. Design the   5M
     resource class.

7.a   Explain the working model of websockets and its life cycle events.   5M

   b   Code and explain a web socket client.   5M

8.a   Explain the features of EJB and different types of beans and interfaces.   5M

   b   Code a session bean with local interface and a web client.   5M

9.a   Explain the annotations and the life cycle of a stateful session bean.   5M

   b   Code a session bean that takes temperature in Fahrenheit and returns its Celcius equivalent.   5M