Q. 1. Answer the following Questions in brief. (Any 8)
   a) Compare the working of EJB and webservices on basis of their performance and robustness.
   b) Explain the importance of JNDI. Explain the steps of creating a JNDI for message queues
   c) Write a sample code show One to One Relationship between course and course-coordinator
   d) Explain the role of IOC in spring.
   e) Explain the significance and contents of business logic in Java EE
   f) Write the steps to access a Remote EJB on remote server.
   g) Write a code to send a Topic message to JMS.
   h) Explain the importance of JNDI. Explain the usage of JNDI in accessing EJB
   i) What are the differences between local and remote EJBs and how they are implemented.

Q. 2 Do as directed (7, 7.4)  
   a) What are EJB. Explain their types and under what conditions they can be used. Describing lifecycle of Stateful bean with example.
   b) Write a server side business logic for a shopping cart application which accepts the category, productname, quantity and price along with email address of customer. Write the methods to add, modify, remove and print items of the shopping cart
   c) Write a note on Singleton Beans.

Q. 3. Do as directed (7,7,4)
   a) Explain the working of JPA using Entities, Relationships, Persistence Context, and fetch Methods. Write suitable code for the same.
   OR
   b) Write a code to add, remove and retrieve the data from Many to Many Relationship entities and how Java EE maps it in the Persistence API
   c) Explain the working of Message Driven bean and JMS
   d) Explain the building blocks of webservises
Q.4. Do as directed (8,6,4)

a) Explain any Two
   1. Single Action and Interval Timers
   2. SAML Assertions
   3. Asynchronous EJB Calls
b) With a good analogy explain the concept of REST. Write a Jersey client for inserting a
   record in database.
c) Explain STS in webservice Security