(2½ Hours) [Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt *any three* of the following: 15

a. Elaborate the different technologies used in Java EE
b. Explain in detail the container with types.
c. Discuss the need of dynamic content. Hence explain the working of servlets with neat diagram
d. Briefly Explain javax.servlet.http package.
e. Write a program of simple servlet by annotation without web.xml file.
f. What is JDBC statement object? Explain its 3 types.

2. Attempt *any three* of the following: 15

a. DiscussRequest Dispatcher interface with its methods and diagram.
b. Explain steps to create cookies with servlets.
c. Describe how Java handles HTTP session using Session Management
d. What is sessionID? Explain the session life cycle.
e. List &Explain the different file related servlet annotations
f. Explain how Non-Blocking I/O works.

3. Attempt *any three* of the following: 15

a. How does JSP differ from Servlets?
b. Discuss the action elements used in JSP Page
c. Explain the following w.r.t JSP : <jsp:useBean><jsp:setProperty><jsp:getProperty><jsp:forward><jsp:plugin>
d. Name the directivesused in JSP? Explain Page directives with all attributes.
e. What are ELs? Explain immediate and deferred EL
f. List & Explain formatting tags in JSTL.

4. Attempt *any three* of the following: 15

a. Explain the architecture of Enterprise Java Beans.
b. Briefly explain session bean and its types.
c. Explain briefly message driven bean life cycle with suitable diagram
d. Describe ways of accessing session bean.
e. What are interceptors? How they are defined? Explain AroundInvoke
f. Write a short note on JNDI.

muquestionpapers.com

Y080VC1A5B5Y080VC1A5B5Y080VC1A5B5Y080VC1A5B5

5. Attempt *any three* of the following: 15

a. Describe the architecture of Java Persistent API with suitable diagram

b. Define Impedance Mismatch. Explain solution to Impedance Mismatch

c. What is ORM? Explain its benefits.

d. What is the relationship between JPA, ORM, Database, and Application?

e. Explain how Hibernate works with neat diagram.

f. Write the structure of hibernate.cfg.xml

****

muquestionpapers.com

Y080VC1A5B5Y080VC1A5B5Y080VC1A5B5Y080VC1A5B5