(2½ Hours)		Hours) [Total Marks: 75]	
N	N. B	<ul> <li>(1) All questions are compulsory.</li> <li>(2) Make suitable assumptions wherever necessary and state the assumptions made (3) Answers to the same question must be written together.</li> <li>(4) Numbers to the right indicate marks.</li> <li>(5) Draw neat labeled diagrams wherever necessary.</li> <li>(6) Use of Non-programmable calculators is allowed.</li> </ul>	e.
		<ul> <li>Definit Object-resistancial Mapping (GKM), Explain ax access of the ORM in</li> </ul>	
a b	)  -  -	Attempt <u>any three</u> of the following:  Briefly explain any two technologies offered by the Java EE platform.  What is enterprise architecture? Why is it important in organizations?  Describe servlet life cycle with the help of a suitable diagram.	15
	l.	Why are servlets preferred over CGI, and what advantages do servlets offer?	
f		Write a short note on Type III Driver.  Explain how a PreparedStatement is created and executed in Java Database Connectivity.	
2	. 8	Attempt any three of the following:	15
a		Write a note on RequestDispatcher.	
b	).	Define cookies. How can they be set and retrieved using servlets?	
	i. I.	What are sessions? Discuss various methods of session tracking.  Explain the following methods of the HttpSession interface along with their proper syntax.	
		<ul> <li>i. isNew()</li> <li>ii. invalidate()</li> <li>iii. getCreationTime()</li> <li>iv. getLastAccessedTime()</li> <li>v. setMaxInactiveInterval()</li> </ul>	
(	ė.	How does non-blocking I/O work?	
1		Write a program to download file-using servlet.	
	3.	Attempt any three of the following:	15
6	a. (	What are directives in JSP? Explain its types.	
	0.	Describe the different stages in the lifecycle of a Java Server Page?	
(	c. d.	How are JavaBeans accessed in JSP? Explain with appropriate action tags.  List and explain any five Implicit Objects of JSP with their methods.  What is JSTL? How does JSTL address the shortcomings of scriptlets?	
	e. f.	Write a JSP program to calculate and display compound interest. Assume the principal amount, rate of interest, and number of years are provided by the user as input.	

4.	Attempt <u>any three</u> of the following:	15
a.	Write a note on Enterprise Java Bean architecture.	
b.	Explain various benefits of Enterprise Bean.	
c.	What are Session Beans in Java EE? Describe the different types of Session Beans.	
d.	Illustrate the life cycle of a Message Driven Bean along with a suitable diagram.	
e.	What are Interceptors in Java EE? Define the role of the @AroundInvoke annotation	
	in Interceptors?	
f.	Write a note on Java Naming and Directory Interface (JNDI).	. 15
	Vumbous voticarius indicate marks.	
5.	Attempt any three of the following: will was a small be dead to be a small be	15
a.	How is persistence implemented in Java?	
b.	Define Object-Relational Mapping (ORM). Explain the benefits for ORM in	
	software development.	
c.	Explain architecture of JPA2.0.	
d.	Discuss Hibernate and its advantages.	
e.	Describe the architecture of Hibernate and include a suitable diagram to illustrate it.	
f.	What is the purpose of the persistence.xml file in JPA and define its key	
	components?	
	Service a short of the enver	
	THE STATE OF COMPONENT IN THE STATE OF THE S	
	2. Aucums age to the following	
	a. Write a note on the questins parches.	
	b. Define cookies How cambow he set and sensived using a stept of	
	What are seen and the case Undoughned and the seen are the company of the case	
	d. Exclain the lodewice actualises the Higgs consecutor, as a wife that purp	
	Krines	
	( waxii i	
	The state of the s	
	The first skink true of the contract of the co	
	Fig. 18 September 20 September	
	v. setMar macrovalum distribution vi setMar macrovalum distribution vi setMar macrovalum distribution vi setMar	
	How does not the clampfid work?	
	With a program to download file-using service.	
	M. Attempt any ever of the following:	
	what are directives in 1822 Explain its types.	
	h. Describe the unforent suges in the hisocycle of a last Septer Rigo?	
	e. How are laya lonn, a cosed in ISP? Explain with appropriate action tags.	
	discland explanation the Implier Objects of ISP with their tighteds	
	principal among the of interest, and number of years on provided by the use	