

Total No. of Questions : 10]

SEAT No. :

P3556

[Total No. of Pages : 3

[4959] - 1156

**B.E. (Computer Engg.) (Semester - I)**  
**C : Advanced Computer Programming**  
**(2012Pattern) (Elective - I)**

*Time : 2 1/2 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8., Q.9 or Q.10.*
- 2) *Figures to the right indicate full marks.*
- 3) *Assume suitable data, if necessary.*

**Q1) a)** What are Locks? Explain Distributed Lock services using Timestamps. **[5]**

b) What is JAVA RMI? How do we create Java RMI? What is the similarity between JAVA RMI and web service? **[5]**

OR

**Q2) a)** Explain with examples a single-copy and Multi-copy distributed shared memory. **[5]**

b) Define Service oriented architecture. List any four SOA characteristics. **[5]**

**Q3) a)** What is reflections in JAVA? Is JAVA reflection slow and/or expensive? What are some drawbacks of reflection in JAVA? **[5]**

b) What is the difference between Collection and Collections? Which collection classes are synchronized or thread-safe? Name the core collection interfaces. **[5]**

OR

**Q4) a)** How does SOA address the issues that arise in Client-Server architecture? **[5]**

**P.T.O.**

- b) Explain the following with servlet. **[5]**
- i) How can we create deadlock condition on our servlet?
  - ii) For initializing a servlet can we use constructor in place of init ()? Why?
  - iii) How can you get the information about one servlet context in another servlet?

- Q5) a) Write short notes on: [9]**
- i) JSP Architecture.
  - ii) MVC architecture Model.
  - iii) JDBC.
- b) Write and odd-even merge sort algorithm. Explain with a suitable example. **[8]**

OR

- Q6) a) Explain Web architecture models. What are the advantages of JSP over Servlets? [9]**
- b) Explain the following JDBC API components. **[8]**
- Driver Manager, SQL Exception, Connection, Statement, ResultSet.

- Q7) a) What are the best features of Hadoop? What are the advantages of Hadoop over traditional RDBMS? [8]**
- b) Write short notes on: **[8]**
- i) MongoDB.
  - ii) AJAX.

OR

**Q8)** a) What do you mean by Hadoop YARN? What are the failure handlings in YARN? [8]

b) What is Hadoop Ecosystem? How HDFS differs with NFS? [8]

**Q9)** a) What is the use of Combiner and Partitioner in the Hadoop framework? [8]

b) Explain the following execution modes of Pig: [9]

i) Local mode.

ii) MapReduce mode.

OR

**Q10)** a) What is pig? When should pig used? Explain pig and MapReduce in detail. [9]

b) Explain word-count implementation via Hadoop framework. [8]

