Total No. of Questions : 10]

SEAT No. :

P3124

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[5154]-690-C

B.E. (Computer Engineering)

CONCURRENCY ON OPEN SOURCE SYSTEMS

(2012 Pattern) (Semester - II) (Elective - IV) (Open Elective)

(End Semester)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.***
2) ***Neat diagrams should be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) What are deadlocks? How these are detected? **[5]**

b) Explain "Sleeping Barber" problem. **[5]**

OR

Q2) a) Explain clocking problem in distributed systems. **[5]**

b) Explain the global snapshot problem in distributed system. **[5]**

Q3) a) What is RMI? Explain the difference between RMI and RPC. **[5]**

b) Explain syntax structure of the Calculus of Communicating Systems (CCS). **[5]**

OR

Q4) a) Explain program expression strategies to express communication. **[5]**

b) Explain event driven calls for signal with example. **[5]**

Q5) a) Explain in detail a message passing architecture. **[10]**

b) What are the different models of computation for concurrent processing? **[8]**

OR

Q6) a) Explain communication of processes in concurrent system. **[6]**

b) Explain how messages are implemented via shared memory. **[6]**

c) Explain message passing through open binder in client server systems. **[6]**

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Q7) a) Explain graph theoretical modeling of resource deadlocks. **[8]**

b) Differentiate between sequential and distributed computing. **[8]**

OR

Q8) a) Explain operational semantics of the CCS calculus. **[8]**

b) Differentiate between true concurrency and Pseudo concurrency. **[8]**

Q9) a) Describe operational semantics and algebraic semantics with respect to CSP. **[8]**

b) How will you avoid deadlocks while simultaneously updating register? **[8]**

OR

Q10) a) Explain Denotational semantics w.r.t. CSP. **[4]**

b) What is the use of bully algorithm? Model it using CSP. **[6]**

c) Explain ring algorithm. How it is modeled using CSP? **[6]**