

N.B:

1. attempt any three questions from each section
2. Answers to the two sections must be written in same answer sheet.
3. Figures to the right indicate full marks.
4. Assume additional data if necessary but state the same clearly.
5. Symbols have their usual meanings and tables have their usual standard design unless stated otherwise.
6. Use of Simple calculators and statistical tables is allowed.

Section I

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|---|---|--|---|
| 1 | A | What is MPI? Discuss the various operations involved in the working of MPI. | 6 |
| | B | Explain different types of transparency in distributed system with the help of example. | 6 |
| 2 | A | Describe the working of DHT in the design of CHORD. Illustrate with a diagram. | 6 |
| | B | Explain in detail different approaches for locating a mobile entity? | 6 |
| 3 | A | What is mutual exclusion? Compare the performance of the central server algorithm and the token ring algorithm for mutual exclusion. | 6 |
| | B | Discuss the design and the implementation issues of cache coherence protocol in the Client centric consistency model. | 6 |
| 4 | A | Compare two phase and three phase commit protocol. | 6 |
| | B | Discuss the different types of failure models in distributed system. | 6 |
| 5 | A | Discuss client side caching in CODA. | 6 |
| | B | Illustrate with an example the implementation of an object reference that allows a client to bind to a remote object in CORBA. | 6 |

Section II

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|---|---|--|---|
| 6 | A | What are the hardware and software co-design used in design of Embedded systems. | 6 |
| | B | Explain the following Embedded system design challenges
1. Power
2. NRE Cost
3. Size | 7 |
| 7 | A | What are real time methods? Explain them in detail. | 6 |
| | B | Explain build and load process of embedded system with suitable diagram. | 7 |
| 8 | A | Consider the following C code. Write an appropriate assembly code for it
<pre> if (x <= y) { x = 4 ; } else { y = 6 ; } </pre> | 6 |

TURN OVER

- B Write a short note on different types of display units. 7
- 9 A Write a C language code to initialize External _Interrupt_0 to activate on rising edge, applied to the external interrupt pin. 6
- B Explain Serial communication in embedded system. 7
- 10 A Define an interfacing. Explain the role of device driver for the same. 6
- B Explain watchdog timer and its use. 7