

1. (a) Suggest various techniques used for inter process communication in an embedded system with relevant examples. Also, explain strategies used for synchronization between processes. 15
 - (b) With the help of a neat diagram, explain the different states a task can be in and the transitions between them. 5
 2. (a) Explain the various operating modes of the ARM7 processor. 10
 - (b) What is the Shared Data Problem ? Explain various techniques to overcome it. (With relevant examples). 10
 3. (a) Explain the interface of Alphanumeric LCD with any microcontroller of your choice. (Draw neat diagram) 7
 - (b) Write a detailed note on the CAN Bus explaining its features and protocol. 7
 - (c) Differentiate between CISC and RISC processors. 6
 4. (a) What is interrupt latency in Embedded systems ? Suggest methods to reduce latency. 10
 - (b) Explain what is the Linear sequential model in Embedded software development. 10
 5. (a) Explain the Register set of the MSP430 RISC controller (working Registers, SFRs, status Register etc.) 10
 - (b) Write a detailed note on the THUMB mode of operation of the ARM7 processor. 10
 6. (a) Explain Bounded and unbounded priority Inversion problem. Suggest methods to overcome / minimise it. 10
 - (b) Explain the various program modelling techniques used in Embedded system design. 10
 7. Write short notes on :— 20
 - (a) Watchdog Timer
 - (b) Serial Peripheral Interface (SPI)
 - (c) Different types of memories in Embedded systems
 - (d) Digital Signal Controllers (DSCs).
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