



PART B — (5 × 13 = 65 marks)

11. (a) How do you select a processor and memory for an embedded application? Explain with an example.  
Or  
(b) What are the reasons to debug the target hardware? Explain in detail along with the use of various debugging tools.
12. (a) Illustrate the CAN data frame format and describe the bus arbitration technique in CAN Protocol.  
Or  
(b) "It is necessary to write a byte into the I<sup>2</sup>C based slave device from master device". How do you develop this application? Explain with necessary diagrams.
13. (a) Discuss in detail the Embedded Product Development Life Cycle with an example.  
Or  
(b) Illustrate the state machine model for a suitable application.
14. (a) Explain the multiprocessing and multitasking techniques in RTOS environment.  
Or  
(b) "Mailbox and Pipes are helpful in inter process communication" Justify this statement by your detailed answer with examples.
15. (a) List and describe the major components and features of in-vehicle infotainment system.  
Or  
(b) Explain the working principle of Automated Teller Machine with its block diagram.

PART C — (1 × 15 = 15 marks)

16. (a) Review – The Hardware and Software Modules used in the design and development of Washing Machine.  
Or  
(b) What is shared data problem? How this issue can be resolved using RTOS semaphores? Illustrate with an example.