

EE8691 EMBEDDED SYSTEM

IMPORTANT QUESTIONS AND QUESTION BANK

UNIT I - INTRODUCTION TO EMBEDDED SYSTEMS

2-Marks

1. List the characteristics of an embedded system?
2. List the components of Embedded system?
3. Classify the types of processors in Embedded System?
4. Compare embedded system and nonembedded system with examples?
5. Explain the important considerations when selecting a processor?
6. Define the terms (i) DMA (ii) Watch Dog Timer?
7. Discuss about (i) Pipelining (ii) Software Timer?
8. Define the terms (i) Real Time Clock (ii) Memory Management?
9. Develop the flowchart of build process for embedded systems?
10. List out the challenges in building in an embedded system?

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Part-B

1. Explain the possible steps are involved in build process of embedded control systems? Discuss In-Circuit Emulator and Watch dog Timer?
2. Describe the structural units of embedded processor?
3. Explain the following Embedded Hardware Units (i) Power Source (ii) Clock Oscillator Unit (iii) Real Time Clock (iv) Watch Dog Timer (v) Memory (vi) Input/ Output-Port, Bus and Interface (vii) Interrupt Handler?
4. What is meant by Memory? Explain the different types of memory devices (i) ROM (ii) RAM?
5. Explain the various form of memories present in an embedded Systems?
6. How to select the processor based upon its architecture and applications?
7. With a neat diagram explain the working of Direct Memory Access (DMA) with architecture and timing diagram?
8. Discuss the following terms in memory management (i) Memory allocation (ii) Memory leak (iii) Methods of Memory Management Strategy?
9. Explain the classification of embedded systems with examples?
10. Describe the following terms (i) Embedded System (ii) versus Computing System (iii) Classification of Embedded System (iv) basic model embedded system?
11. Discuss in detail about (i) In Circuit Emulator (ii) Target Hardware Debugging?
12. Explain (i) Building Process for Embedded System (ii) Structural unit of Embedded Processor including Hardware and software unit?
13. With a neat diagram discuss the following terms in Embedded Processor (i) DMA Architecture (ii) Watch dog Timer (iii) real time clock?
14. Analyze in detail with suitable diagram for (i) In Circuit Emulator (ii) Target Hardware Debugging? Compare the Microprocessor with Micro Controller?
15. Explain the following types of Embedded Software (i) Machine Code Format (ii) Assembly Language (iii) High Level Language?

UNIT II - EMBEDDED NETWORKING

2-Marks

1. Distinguish between Synchronous and Asynchronous communication?
2. Show the structure of UART?
3. Mention few serial bus communication protocols?
4. Differentiate between RS232 and RS485?
5. Draw the write byte format and read byte format of I²C?
6. Define synchronous communication?
7. Define Bus and BAUD Rate?
8. Difference between RS422 and RS485?
9. Justify the need for RS-485?
10. Compare the buses used in serial communication?

Part -B

1. Illustrate the synchronous and asynchronous communications from serial devices?
2. Describe the functions of a typical parallel I/O interface with a neat diagram?
3. Discuss the types of serial port devices?
4. Compare the advantages and disadvantages of data transfer using serial and parallel port/devices? Compare the RS232C and RS485 serial interfaces?
5. Elaborate the architecture of CAN with necessary?
6. Describe one type of serial communication bus with its communication protocol?
7. Explain the classification of IO devices?
8. Explain the functionalities of RS 232 and RS 485 standard serial interface with neat diagram?
9. Explain in detail about SPI communication protocol and its inter facing techniques?
10. Explain how serial data communication is preferred in I²Cbus and CAN bus?
11. Explain with all necessary sketches to enable intra communications among peripherals using I²C bus?
12. Explain various communication protocol (i)UART(ii) RS 232 (iii)RS 422 (iv)RS 485?
13. What is the need device driver? How do you write a device driver ? List the steps involved in writing a device driver.?
14. Discuss the following terms (i) SPI communication protocol(ii) Types of serial port devices (iii) Parallel I/O interface (iv)Synchronous and asynchronous communications?
15. What is meant by serial port? Explain following types of serial ports with suitable diagram (i)Synchronous Serial Input(ii) Synchronous Serial Output (iii) Asynchronous Serial UART Inputs (iv) Asynchronous Serial UART Outputs?

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Notes

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Illustrate with suitable diagram and explain Synchronous?

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