

B.E. Electronics Engineering Eighth Semester
EN804 - Embedded System

P. Pages : 1

Time : Three Hours



GUG/W/18/2020

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) What is an embedded system? What are different components of embedded system hardware? 8
b) What are three main components of embedded system? Also discuss the characteristics and constraint of embedded system design. 8

OR
2. a) Discuss using block diagram System on chip. 8
b) What is the design metrics used in embedded System. 8
3. a) Explain with Simplified block diagram the AVR microcontroller. 8
b) Discuss in brief the general purpose and I/O registers in AVR. 8

OR
4. a) What are different families of AVR? Give examples with characteristics. 8
b) What are different features of RISC architecture? 8
5. a) Explain pin functions of AT mega 32. 8
b) Explain in detail Timer 0 for At mega 32. 8

OR
6. a) What are the sources of interrupts in AT mega 32 and the steps it goes through upon activation of an interrupt. 8
b) What are the characteristics of ADC of AT mega32? comment on AVR ADC hardware considerations. 8
7. a) For a crystal frequency of 8MHz write a program to generate a square wave with a period of 12.5 us on pin PORTB.3. calculate the value to be loaded into. TCNT0. 8
b) For crystal frequency of 8MHz write a program to generate delay of 1ms. Also discuss the choice of prescaler. 8

OR
8. a) If INTO pin is connected to a switch that is normally high. write a program that toggles PORTC.3 whenever the INTO pin goes low. 8
b) Write a program to get data from channel 0 (ADCO) of ADC and display the result on PORTC and PORTD. use polling. 8
9. a) What are OS goals? 8
b) What are RTOS services? 8

OR
10. a) What are the functions of device manager. 8
b) What are different methods for saving and optimizing memory space? 8
