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**Question Paper Code: 36503**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Electronics and Instrumentation Engineering

01UEI603 - REAL TIME EMBEDDED SYSTEMS ARCHITECTURE

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Name the special functions registers available in 8051.
2. Name the five interrupt sources of 8051?
3. Write about CALL statement in 8051.
4. Define debugging.
5. What is an embedded system?
6. Mention the classification of embedded system.
7. Define watchdog timer.
8. Write the features of device driver.
9. What is interrupt flag?
10. What is meant by thread?

PART - B (5 x 16 = 80 Marks)

11. (b) (i) Explain in detail about interrupt structure with their function register. (8)

(ii) What is SCON and PCON function register and explain in detail. (8)

Or

(b) Explain I/O ports in 8051 with neat diagrams. (16)

12. (a) Analyze the port assignments for the interfacing of stepper motor with 8051 and develop an ALP to rotate the stepper motor. (16)

Or

(b) Explain about the intelligent LCD display interface to the 8051 with neat sketch. (16)

13. (a) Explain in detail the steps involved in Embedded system design process. (16)

Or

(b) (i) Explain in details about the build process of an embedded system. (8)

(ii) Discuss in details about the memory management methods of an embedded system. (8)

14. (a) Explain memory and IO devices interfacing (Memory Mapped I/O). (16)

Or

(b) List the parallel communication bus and explain PCI / PCI/X bus and ISA bus. (16)

15. (a) Describe about the fifteen-point strategy for synchronization is suggested for real time programming for an embedded system. (16)

Or

(b) Discuss the following:

(i) Non maskable interrupts (8)

(ii) Prevention of Interrupt over run (8)