Reg. No. :

Question Paper Code: 46503

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Sixth Semester

Electronics and Instrumentation Engineering

14UEI603 - REAL TIME EMBEDDED SYSTEMS ARCHITECTURE

(Regulation 2014)

Duration: 1:15hrs   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The 8051 has _____ 16-bit counter/timers.

    (a) 1   (b) 2   (c) 3   (d) 4

2. In 8051 which interrupt has highest priority?

    (a) IE1   (b) TF0   (c) IE0   (d) TF1

3. What is the order decided by a processor or the CPU of a controller to execute an instruction?

    (a) decode, fetch, execute   (b) execute, fetch, decode
    (c) fetch, execute, decode   (d) fetch, decode, execute

4. Abbreviate CISC and RISC

    (a) Complete Instruction Set Computer, Reduced Instruction Set Computer
    (b) Complex Instruction Set Computer, Reduced Instruction Set Computer
    (c) Complex Instruction Set Computer, Reliable Instruction Set Computer
    (d) Complete Instruction Set Computer, Reliable Instruction Set Computer

5. The Width of a processor's data path is measured in bits. Which of the following are common data paths?

    (a) 8 bits   (b) 12 bits   (c) 16 bits   (d) 32 bits

6. Which computer memory is used for storing programs and data currently being processed by the CPU?

    (a) Mass memory   (b) Internal memory

    (c) Non-volatile memory   (d) PROM

7. Deadline-driven constraints so called

    (a) Reality-time constraints   (b) Real-time constraints

    (c) Real-data constraints   (d) None of these

8. Processor must accept and process frame before next frame arrives, typically called

    (a) Hard real-time systems   (b) Real-time constraints

    (c) Real-data constraints   (d) Soft real-time systems

9. Two partitions must be insulated to prevent operations on one half from affecting other, such floating-point operations are called

    (a) Single-instruction operation   (b) Vector operation

    (c) Paired single operations   (d) Fetch operation

10. Which of these is a digital input device?

    (a) pressure sensor   (b) servo

    (c) button   (d) potentiometer

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.   Explain with a neat block diagram the architecture of 8051 microcontroller.   (8)

12.   Explain about Data transfer, control & I/O instructions of 8051 Micro controller.

                   (8)

13.   Explain in detail about design process of an embedded system.   (8)

14.   Explain about Timer and counting devices.   (8)

15.   Explain about Non maskable interrupts.   (8)

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