Register Number: …….

B.E.DEGREE EXAMINATIONS: NOV/DEC 2010

Fifth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

U07EE504: Microprocessors and Microcontrollers

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

PART A (10 x 1 = 10 Marks)

1. What is the size of the instruction pipeline in 8086 processor.

   a) 6 b) 4 c) 8 d) 16

2. The Stack pointer is decremented before

   a) POP operation b) Read operation c) PUSH operation d) Write operation

3. One of the most powerful features of the 8255 is its ability to

   a) Mapping the I/O port c) Memory mapped I/O port

   b) Hand shaking capability d) Used as a bidirectional port

4. ____ number of combination is the major limitation of the decoded scan in 8279.

   a) 8 b) 4 c) 6 d) 5

5. Watch dog timer of microcontroller is automatically gets

   a) reset once the task is over c) Conditionally set

   b) forcefully reset d) is not a timer

6. The number of working registers contains in the 8051 microcontroller is

   a) 32 b) 16 c) 64 d) 8

7. In Pentium Processor the MMU stands for

   a) Memory Mapping Unit c) Machine Management Unit

   b) Memory Management Unit d) Machine Mapping Unit

8. The EFLAG indicates processor's

   a) Current Status c) Status of the Accumulator

   b) Virtual Interrupt d) Status of the memory

9. The ADC 808/809 has data output as

   a) 4 bit b) 16 bit c) 8 bit d) 32 bit

10. Hall effect sensor used in the DC motor to measure

    a) Current b) Speed c) flux d) Torque

PART B (10 x 2 = 20 Marks)

11. What is program counter?

12. Discuss the types of Instruction formats of a microprocessor.

13. Give the control word format of 8255 peripheral interface.
14. Define the terms a) Two key lockout b)N key Roll Over
15. List out any five Special Function Registers of 8051 micro controller.
16. What are the functions of the following 8051 pins
    a) ALE b) RST
17. What is Pipelining in Pentium Processor?
18. Differentiate RISC and CISC.
19. What is the difference between "Polling busy line" and "software delay" in case of an LCD interfacing problem?
20. What is meant by the term "Contact De bounce"? And how this problem can be taken care while interfacing key board with micro controller.

PART C (5 x 14 = 70 Marks)

21. a) (i) Discuss briefly about different modes of operation for 8086. (7)
    (ii) Name and explain different types of interrupt in 8086. (7)

(OR)

b) (i) Write short notes on memory devices used in 8086 microprocessor. (7)
(ii) Explain in detail about the input/output interfacing in 8086 microprocessor. (7)

22. a) With neat functional block diagram explain 8255 programmable peripheral interface and its modes of operation. (10)

(OR)

b) (i) With a neat functional block diagram explain the function of 8257 DMA controller. (10)
(ii) Compare 8251 and 8255 programmable interface. (4)

23. a) What do you mean by the term addressing mode? Explain the different Addressing modes with suitable examples supported by 8051.

(OR)

b) (i) Explain the architecture of 8051 microcontroller. (10)
(ii) Write down the advantages of microcontroller over microprocessor. (4)

24. a) (i) Explain in detail about the RISC concepts. (7)
    (ii) Explain about the pipelining process of Pentium processor. (7)

(OR)

b) (i) Describe about the floating point unit of Pentium processor. (7)
(ii) Write notes about protected mode operation of Pentium processor. (7)

25. a) Explain with a block diagram the hardware and software requirements to interface a stepper motor with a 8086 microprocessor.

(OR)

b) Explain with neat block diagram the hardware and software required for speed control of DC motor with microcontroller.

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