KUMARAGURU
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Register Number: …….

B.TECH DEGREE EXAMINATIONS: MAY 2015

(Regulation 2013)

Fourth Semester

INFORMATION TECHNOLOGY

U13ITT401:Microprocessors

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Which of the following instruction is immediate addressing mode?
   a) MOV B,E b) MVI B,80_H
   c) MOV M,B d) MOV B,M
2. …….. signal separates multiplexed address and data lines.
3. …….. instruction is used in memory mapped I/O
   a) STA 4500 b) LDA 4500
   c) MOV A,M d) PUSH B
4. …… is non-maskable internal interrupt of 8085
5. Which of the following is used to interface the keyboard and display?
   a) 8251 b) 8259
   c) 8253 d) 8279
6. …… mode in 8255 is used to set the bits of port c
7. ARM has ……..registers, each of…….. bits
   a) 32,37 b) 37,32
   c) 16,32 d) 32,16
8. The ARM processor will work in Thumb set by setting……. flag
9. Which of the following is a c comparison instruction?
   a) TST b) EOR
   c) RSB d) BI C
10. SWI instruction allows maximum …….. calls

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. Differentiate direct and indirect addressing mode of 8085 with an example
12. What is the significance of program counter?
13. Write a delay subroutine for 8085 microprocessor
14. Name the different types of interrupts in 8085.
15. Mention the different modes of 8279
16. What is the need of DMA controller?
17. List the features of RISC Architecture.
18. State the difference between user and exception modes.
19. Thumb instruction is not a regular instruction .Why?
20. How is the shifting operation executed in ARM processor?

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. (i) Describe the basic operations of 8085 microprocessor. (8)

    (ii) Draw and explain the timing diagram of STA 4500. (6)

22. a) (i) Write an ALP to transfer a set of N numbers stored in memory location starting from $X150_H$ to $X250_H$. and to determine the smallest of N numbers. (8)

    (ii) Illustrate the importance of stack pointer and the corresponding instructions used for stack operations. (6)

(OR)

b) Demonstrate and compare the memory mapped and I/O mapped I/O for 8085.

23. a) Summarize the operation of handling the interrupts using Programmable interrupt controller.

(OR)

b) Explain the architecture and modes of operations of 8255.

24. a) (i) Explain the architecture of ARM7 with the block diagram. (8)

(ii) How is exception handled in ARM processor? (6)

(OR)

b) What is meant by instruction pipeline? Demonstrate the 3 and 5 stage pipeline organization.

25. a) Classify the instruction set of ARM processor and give brief explanation with examples.

(OR)

b) (i) Write an Assembly language program for ARM processor to compute $4x^2 + 3x$, if x is stored in r1 and store the result in r1. (7)

(ii) Write an Assembly language program for ARM processor to find the sum of N numbers. (7)

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