MAKE UP

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IS43

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M S RAMAIAH INSTITUTE OF TECHNOLOGY

(AUTONOMOUS INSTITUTE, AFFILIATED TO VTU)

BANGALORE – 560 054

MAKE UP EXAMINATIONS - JULY 2010

Course & Branch	:	**B.E.(Information Science & Engineering)**	Semester	:	**IV**
Subject	:	**Microprocessor**	Max. Marks	:	**100**
Subject Code	:	**IS43**	Duration	:	**3 hrs.**

Instructions to the Candidates: Answer one full question from each unit

UNIT-I

1. a) Explain all the register of 8086 along with functions of each. (8)

   b) Explain the default segments for code, data, stack and also calculate physical address for the following. (10)

   Given CS=2000h, DS=3000h, SS=4000h, ES=5000h, BP=0010h, BX=0020h, SP=0030h, SI=0040h, DI=0050h.

   (i) MOV AL, [BP]
   (ii) MOV CX, [BX]
   (iii) MOV AL, [BP+SI]
   (iv) MOV CS: [BX], AL

   c) What is segment override prefix? Explain with code. (2)

2. a) Generate the Opcode for the following instructions. (10)

   (i) MOV AX, BX
   (ii) MOV CL, [S1]
   (iii) ADD AX, BX
   (iv) MOV CS : [BX], DL
   (v) MOV CS, [4374h]

   Given template for MOV is | 100010 DW | | MOD REG R/W | ADD : | 000 000 DW |

   b) Explain the various types of instruction template along with number of bytes required. (10)

UNIT – II

3. a) Explain how do you implement IF-THEN, While-Do, Repeat-until in assembly language with example. (12)

   b) Write a delay program to generate a delay of 1 min is operating frequency is 10MHz assume MOV Reg, count takes 4T states. (8)

   Label : DEC Reg takes 2T states
   JNZ label takes 16/4 T states

4. a) Explain the following string instructions with examples. (10)

   (i) SCASB (ii) LODSB iii) STOSB iv) CMPSB v) MOVSB

   b) Write an ALP to find whether given substring is found or not in the main string and display appropriate message. Your program should be accompanied with proper comments. (10)

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UNIT – III

5. a) Explain the following instruction with example. (10)
   (i) XLAT (ii) LES iii) SAHF iv) AAM v) DIV
   b) Explain all shift instruction and rotate instructions with example. (10)

6. a) Explain with example the following assembler directives. (10)
   i) Public ii) Model iii) Macro and ENDM iv) PTR v) GROUP
   b) With a ALP using procedures to read a character from the key board in the module(1) and to display a character is module (2) and use the above modules to read a string of character from the KB terminated by carriage return and point the string to be displayed in the next line. Write comments in the program. (10)

UNIT – IV

7. a) Write the min mode configurations for 8086 showing all the pins and components / devices. (10)
   b) Write a flow chart and an ALP to read string and check whether it is a palindrome or not. (10)

8. a) Explain with a neat diagram the various block of 8259 (PIC). (10)
   b) Explain different types of interrupts and its priority. Draw the interrupt vector table and mention the different types of interrupts. (10)

UNIT – V

9. a) Given 4Kx8 ROM and 4Kx8 RWM. Design a system using 8086 to interface 4Kx16 ROM and 4Kx16 RAM assume starting for ROM as 40000h and RWM as 44000h, show the interfacing connection using decoder and memory mapping. (10)
   b) Interface a stepper motor with a circuit diagram to 8086 and rotate the motor clockwise and anticlockwise by 360^0 degree. Write the ALP and show the working operations. (10)

10 a) Explain the control word register format for 8255 and also BSR CW register. (10)
   b) Explain with a diagram how do you interface a 8x3 keyboard to 8086 and write an ALP to display code of key along with ROW, COLUMN, number of key pressed. (10)

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