Reg. No. : | | | | | | | | | | |

Question Paper Code: 41455

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Fifth Semester

Electronics and Communication Engineering

14UEC505 - MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The number of hardware interrupts that the processor 8085 consists of is

   (a) 1 (b) 3 (c) 5 (d) 7

2. The register in the 8085A that is used to keep track of the memory address of the next opcode to be run in the program is the

   (a) stack pointer (b) program counter
   (c) Instruction pointer (d) Accumulator

3. BHE of 8086 microprocessor signal is used to interface the

   (a) Even bank memory (b) Odd bank memory
   (c) I/O (d) DMA

4. The instruction, MOV AX, 1234H is an example of

   (a) register addressing mode (b) direct addressing mode
   (c) immediate addressing mode (d) based indexed addressing mode

5. In BSR mode, only port C can be used to

   (a) set individual ports (b) reset individual ports

(c) set and reset individual ports (d) programmable I/O ports

6. In cascaded mode, the number of vectored interrupts provided by 8259A is

(a) 4 (b) 8 (c) 16 (d) 64

7. Which of the following instruction is used to set bit port directly

(a) SET P1.0 (b) MOV P1.0, bit (c) SETB P1.0 (d) JB P1.0, bit

8. The internal RAM memory of the 8051 is

(a) 32 bytes (b) 64 bytes (c) 128 bytes (d) 264 bytes

9. During interface LCD to a microcontroller _____ line will instruct the LCD that microcontroller is sending data.

(a) DB0 (b) RW (c) EN (d) RS

10. Resolution of ADC is defined as

(a) 1/ (2N – 1) (b) 1/ (2^N-1) (c) 2^N-1 (d) 2N-1

PART - B (5 x 2 = 10 Marks)

11. Draw the contents of the flag register of 8085.

12. What are assembler directives? Give two examples.

13. List the six modes of timer.

14. How do you select the register banks of 8051?

15. What is the necessity to interface DAC with microcontroller?

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Describe the addressing modes of 8085. (8)

(ii) Write an assembly language program to sort the numbers in ascending order. (8)

Or

(b) (i) Explain in detail the Interrupts of 8085. (8)

(ii) Interface an 8KX8 EPROMM and 2KX8 RAM chip with the 8085 microprocessor such that the address for RAM and EPROM starts at 0000H and 4000H. (8)

17. (a) With neat diagram explain the minimum mode operation of 8086. Also explain its operation with timing diagrams. (16)

Or

(b) (i) Explain with examples the addressing modes of 8086. (10)

(ii) Write an assembly language program to find the average of '*N*'. (6)

18. (a) Discuss briefly about keyboard/display controller. (16)

Or

(b) Draw the architectural block diagram of a DMA controller and explain its operation. (16)

19. (a) Explain the architecture of 8051 with its diagram. (16)

Or

(b) (i) Explain the on-chip serial port structure of 8051 microcontroller with its SFRs. (8)

(ii) Write an assembly language program to generate a square wave using on chip timer in 8051 microcontroller. (8)

20. (a) Explain the working of microcontroller based stepper motor control with suitable diagrams. (16)

Or

(b) Develop a microcontroller based traffic light controller and explain its working. (16)

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