

10-12-2016
(AN)

Reg. No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 60458

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fifth Semester

Electronics and Instrumentation Engineering

EC 2312/10133 EE 503/EE 2354/10133 EC 506/EE 64 – MICROPROCESSORS AND MICROCONTROLLERS

(Common to Instrumentation and Control Engineering, Electrical and Electronics Engineering)

(Regulations 2008/2010)

(Also common to PTEE 2354/PTEC 2312/10133 EE 503 – Microprocessors and Microcontroller for B.E. (Part-Time) Fourth Semester – Electrical and Electronics Engineering – Regulations 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Specify the processor size of 8085 and 8086 microprocessors.
2. State the function of TF and DF flags in 8086 microprocessor.
3. What is Opcode fetch cycle?
4. State the function of two return instructions of 8085 microprocessor: RM, RP.
5. What is the use of CAS0-CAS2 signals of 8259 Programmable interrupt controller?
6. What is the advantage of Double buffering process used in 8251 USART?
7. How many Register banks are in 8051 microcontroller? What is the size of each bank?
8. Define function of SCON register of 8051 microcontroller.
9. Define the register indirect addressing mode of 8051 microcontroller.
10. List any four 8051 instructions that affect overflow flag.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the architecture of 8085 microprocessor with neat diagram. (8)
- (ii) Show the memory and I/O interfacing with 8085 microprocessor and explain how the data is transferred with the peripherals. (8)

Or

- (b) (i) Describe the function 8086 microprocessor signals. (8)
- (ii) Discuss about the interrupt structure of both 8085 and 8086 microprocessors. (8)
12. (a) (i) With suitable examples, explain the program control instructions of 8085 microprocessor. (8)
- (ii) Write an 8085 based assembly language program to compute the sum of 'n' elements. (8)

Or

- (b) (i) Explain the data manipulation instructions of 8086 microprocessor. (8)
- (ii) Write an 8086 based assembly language program to count the number of occurrences of a given data in a set of numbers. (8)
13. (a) (i) Explain the programming of 8255 PPI in mode 1 and mode 2 operations. (8)
- (ii) Explain the operation of 8253 Timer/counter as a square wave generator. (8)

Or

- (b) (i) Show block diagram and explain the function of 8279 Keyboard/Display controller. (8)
- (ii) Show and explain the D/A converter interfacing with 8085 microprocessor. (8)
14. (a) Show the block diagram of 8051 microcontroller. Explain the function of major components such as Memory, Ports, Onchip peripherals and Special function registers in detail. (16)

Or

- (b) (i) Describe the operating modes of Timer units in 8051 microcontroller. (8)
- (ii) Discuss about the serial communication using 8051 microcontroller. (8)

15. (a) (i) Discuss about the instruction set of 8051 microcontroller in detail. (10)
- (ii) Write an 8051 based assembly language program to transfer 8 bit data to be displayed through a parallel port. (6)

Or

- (b) (i) Explain in detail the microcontroller based servo motor control. (8)
- (ii) Explain the role of microcontroller in Washing Machine control operations. (8)
-