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Question Paper Code : 80453

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

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 and
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. State the function of 8085 instructions: CPI and RRC.
4. Write an assembly language program to place the contents of two consecutive memory locations to registers B and C respectively.
5. What are the functions performed by INTEL 8251A?
6. What is scanning in keyboard and what is scan time?
7. Mention the advantages of Harvard Architecture
8. Give the flags available in 8051.
9. What is the application of bit wise instruction?
10. What is PCON register?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the architecture of 8086 microprocessor in detail. (16)

Or

- (b) Draw the functional diagram of 8085 and explain it in detail. (16)

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) What is the need to interfacing PPI (8255) in 8085? (4)
(ii) Draw and explain the architecture of 8259. (12)

Or

- (b) (i) What are the important steps involved to interface an multichannel ADC with 8085? (4)

- (ii) Draw and explain the architecture of 8253 timer. (12)

14. (a) Discuss about the memory organization and special function registers in 8051 Microcontroller. (16)

Or

- (b) (i) Explain the function and operating modes with the associated registers of Timer/Counter in 8051 Microcontroller. (10)

- (ii) Discuss about the interrupts of 8051 Microcontroller. (6)

15. (a) With suitable diagrams, explain the closed loop control of servomotor with microprocessors.

Or

- (b) Explain the role of micro controller in washing machine control with assembly language program.