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Question Paper Code: 31545

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

Fifth Semester

Electronics and Communication Engineering

01UEC505 – MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is microprocessor? What is the difference between an microprocessor and CPU?
2. Mention the advantages of using the direct memory access.
3. What is the purpose of the following commands in 8086 (a) AAD (b) RCL?
4. List the flags in 8086 and its function.
5. What are the four display modes of 8279 Keyboard /Display controller?
6. Write the application of programmable interval timer.
7. What are the advantages of the register indirect addressing mode in 8051 microcontroller?
8. Differentiate microprocessor with microcontroller and advantages of microcontroller over microprocessor.
9. List the interrupts of 8051 microcontroller and what is the need for DAC?
10. What is the necessity of using driver circuit in microcontroller based stepper motor control?

PART - B (5 x 16 = 80 Marks)

11. (a) Enumerate in detail about architectural behaviour blocks of an 8085 microprocessor and bring its pin functions. (16)

Or

- (b) (i) What is addressing mode? Explain different types of addressing modes of 8085 processor by illustrating examples. (8)
- (ii) Explain the interrupt structure of 8085 microprocessor. (8)

12. (a) With neat sketch explain the architecture of 8086 processor. (16)

Or

- (b) Discuss the maximum mode configuration of 8086 by a neat diagram. Mention the functions of various signals. (16)

13. (a) Explain in detail about functional block and pin details of 8279 interfacing device, also illustrate the various modes of operation with their control words. (16)

Or

- (b) (i) Write short notes on programmable interval timers 8253 and 8254. (8)
- (ii) Explain the function of Programmable Peripheral Interface–Intel 8255. (8)

14. (a) Explain the Port operation of 8051 with necessary diagrams. (16)

Or

- (b) (i) Explain the architecture and different modes of operation of 8255 PPI. (8)
- (ii) Explain about logical and control transfer instructions of 8051. (8)

15. (a) Explain about interfacing of washing machine with 8051 controller and implement software instruction for controlling the various process of washing machine. (16)

Or

- (b) Explain how a stepper motor is interfaced with 8051 microcontroller and also make assembly language program to control the direction of rotation of the stepper motor along with interfacing diagram. (16)