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Question Paper Code: 54426

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Computer Science and Engineering

15UEC426– MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The add operations in the 8086 can be categorized as follows CO1- R
(a) Data transfer (b) Arithmetic (c) Logical group (d) Shift group
2. Port C of 8255 can function independently as CO2- R
(a) Input port (b) Output port
(c) Either input or output port (d) Both input and output port
3. The internal RAM memory of the 8051 is CO3- R
(a) 32 bytes (b) 64 bytes (c) 128 bytes (d) 256 bytes
4. Number of input ports in the 8051 microcontroller CO4- R
(a) 3 ports (b) 4 ports (c) 5 ports (d) 4 ports with 5 pins
5. How many clock pulses are confined by each machine cycle of PIC CO5- R
(a) 4 (b) 8 (c) 12 (d) 16

PART – B (5 x 3= 15 Marks)

6. List the various addressing modes of 8086 with examples. CO1- R
7. Give the various modes of 8254 timer with examples. CO2- R
8. Draw the pin diagram of 8051 and mention the port details. CO3- R
9. What are the types of sensors used for 8051 interfacing? CO4- R
10. Define the memory organization of PIC microcontroller. CO5- R

PART – C (5 x 16= 80 Marks)

11. (a) Explain the architecture of 8086 microprocessor with a neat diagram. CO1- U (16)
- Or
- (b) Discuss maximum mode configuration of 8086 with a neat diagram and mention the features of various signals. CO1- U (16)
12. (a) Explain in detail about DMA microcontroller with a neat sketch. CO2- U (16)
- Or
- (b) Explain the keyboard and display controller interfacing in detail with a neat sketch. CO2- U (16)
13. (a) Describe the different modes of operation of timers in 8051 with its registers. CO3- U (16)
- Or
- (b) Discuss about the 8051 instruction set with suitable examples. CO3- U (16)
14. (a) Draw the diagram to interface a stepper motor with 8051 microcontroller and write an ALP to run the stepper motor in both forward and reverse directions. CO4- App (16)
- Or
- (b) Draw the block diagram of traffic light control system using 8051 and write the algorithm and ALP for traffic light system. CO4- App (16)
15. (a) With a neat diagram discuss in detail about the architecture of PIC microcontroller. CO5- U (16)
- Or
- (b) Discuss in detail about the function of various port pins of PIC microcontroller. CO5- U (16)