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**Question Paper Code : 50446**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017  
Fourth/Fifth Semester

Electronics and Communication Engineering  
EC 6504 – MICROPROCESSOR AND MICROCONTROLLER  
(Common to Biomedical Engineering/B.E. Computer Science and Engineering/Medical  
Electronics/Information Technology)  
(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. List the modes of operation in 8086.
2. Define Macros.
3. What is the need of LOCK signal ?
4. Write some example for advanced processors.
5. What are the handshake signals used in Mode – 2 configuration of 8255 ?
6. How the DMA operation performed with 8086 ?
7. How to set 8051 in idle mode ?
8. Illustrate the DJNZ instruction.
9. List the 8051 interrupts with its priority.
10. Give two examples of sensors and state its uses.

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PART - B

(5×13=65 Marks)

11. a) Draw the architecture and explain the functional units of 8086. (13)  
(OR)  
b) Describe the interrupts of 8086 and its types with service routine. (13)
12. a) Explain the system bus structure of 8086. Draw the timing diagram for interrupt acknowledgment cycle. (13)  
(OR)  
b) Explain the loosely looped configuration with neat diagram. (13)
13. a) Draw and explain the functional diagram of 8251. (13)  
(OR)  
b) Draw and explain functional diagram of keyboard and display controller. (13)
14. a) Describe the architecture of 8051 with neat diagram. (13)  
(OR)  
b) Discuss the ports and its circuits of 8051. (13)
15. a) Illustrate the serial communication in 8051, with its special function register. (13)  
(OR)  
b) i) Interface the ADC converter with 8051 and explain with neat diagram. (7)  
ii) Write the assembly language program to execute the ADC conversion. (6)

PART - C

(1×15=15 Marks)

16. a) Develop a 8086 based system with 128 RAM and 4K ROM, to display the word HAPPY for every 2ms in the common anode seven segment LED display. Explain the delay timings. (15)  
(OR)  
b) Design a circuit to generate 12 MHz frequency for a system. Write a program for generation of unipolar square waveform of 1 KHz frequency using Timer 0 of 8051 in mode 0. (15)