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**Question Paper Code: 35405**

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

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. Distinguish between the shift and rotate instructions of 8085.
2. How many memory locations can be addressed by a microprocessor with 16 address lines?
3. List out the flags present in 8086 microprocessor.
4. What are the different types of interrupts supported in 8086?
5. Why interfacing is needed for I/O devices.
6. Give the salient features of the 8254 programmable interval timer.
7. What is need for bitwise instructions in microcontroller and how many ports are bit addressable in 8051 $\mu$ C?
8. Which of the 8051 port need pull-up registers to function as I/O port?
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) Draw the architecture of 8085 Processor and explain the various blocks. (16)

12. (a) Explain the various addressing modes of 8086 microprocessor with suitable examples. (16)

Or

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

13. (a) Explain with necessary diagrams the operation of 8255 programmable peripheral interface. (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) Draw the architectural block diagram of 8051 microcontroller and explain. (16)

Or

- (b) Illustrate the following status word and control word registers formats i) program status word ii) timer mode control iii) timer control register and iv) serial ports control register. (16)

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)