

**SUBJECT CODE NO: E-96**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**T.E.(EEP/EE/ EEE) Examination Nov/Dec 2017**  
**Microcontrollers & Applications**  
**(REVISED)**

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i. Solve three questions from each section.
  - ii. Q.1 & Q.6 are compulsory.
  - iii. Assume suitable data if necessary.

**Section A**

- Q.1 Solve the following questions 14
1. What is the pipelining in 8086?
  2. What is the function of Instruction Pointer in 8086?
  3. What is the function of instruction decoder in 8086?
  4. Define immediate Addressing mode with example for 8086.
  5. What is function of Data Pointer in 8051 microcontroller?
  6. What is the importance of baud rate in 8051 microcontroller?
  7. How the bit addressing is distinguished from byte addressing?
- Q.2 a) Draw and explain programming model of 8086 microprocessor. 07
- b) Explain the different addressing modes of 8086 microprocessor. 06
- Q.3 a) Explain the different data transfer instructions of 8086. 07
- b) Write ALP to Add two 8-bit numbers which are stored at internal RAM location 20H to 21H. store the 16-bit result at 30H & 31H. 06
- Q.4 a) Explain the stack and the stack pointer of 8051. 07
- b) Explain in detail TCON special function register of 8051 06

- Q.5 Write short note on (any three)**
- i) Features of 8086 05
  - ii) Comparison of microprocessor & microcontroller. 04
  - iii) Logical instructions of 8051 04
  - iv) Subroutines 04

**Section B**

- Q.6 Solve the following questions.** 14
- a) Explain cy and AC flag of 8051.
  - b) What is the use of internal RAM in 8051?
  - c) Explain the function of port 0 of 8051 microcontroller.
  - d) Explain function of ALU of 8051 microcontroller.
  - e) What is vectored & non-vectored interrupts?
  - f) Explain the working of counter in 8051 microcontroller.
  - g) What is the priority of interrupt?
- Q.7**
- a) Explain in detail serial data transmission mode 0 of 8051 microcontroller. 07
  - b) Write a program to generate 2kHz frequency on P1.4bit use timer 0. 06
- Q.8**
- a) Draw the interfacing of stepper motor with microcontroller 8051. Write a program to rotate the stepper motor continuously by step angle 1.8°. 07
  - b) It is required to interface 7-segment display to 8051 microcontroller. Draw the interfacing diagram and write a 3 program to display the BCD digits 0 to 9. 06
- Q.9**
- a) Explain detail how the timing operation is performed in 8051 microcontroller. 07
  - b) Draw a functional block diagram of 8051 & explain. 06
- Q.10 Write a short note (any three)**
- 1) Interrupts of 8051 04
  - 2) Features of 8051 05
  - 3) SFRS of 8051 04
  - 4) Keyboard interfacing. 04