

SUBJECT CODE:- 115
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(EEP/EE/ EEE) Examination Nov/Dec 2015
Microcontrollers & Applications
(Revised)

[Time: Three Hours]

[Max. Marks: 80]

“Please check whether you have got the right question paper.”

N.B i) Solve any three questions from each section.

ii) Assume suitable data wherever necessary.

SECTION-A

- Q.1 A Draw function block-diagram of 8057 microcontroller. Explain the function of each block. 07
 B Elaborate the function of each bit of program status word register. 06
- Q.2 A Interface external memory of 16k-EPROM & 8 k-RAM to 8051 microcontroller. 07
 B With suitable memory address, explain the operation of PUSH & POP instructions. 06
- Q.3 A Explain the happening of execution of following instructions. 06
 1) MOVX @ DPTR, A 2) SETB C 3) SWAP A 4) RRC A
- B Write 8051 instructions to copy the contents of external data memory location pointed by DPTR register to internal data memory location pointed by Ro. 07
- Q.4 A Draw and explain program model of 8086 microprocessor. 07
 B Generate physical memory location indicated by following instructions. 06
 i) MOV Ax, [SI+05] 2) ADD AL, [0301] 3) ADD Ax, [Bx+SI] 4) MOV Ax, [Bx]
 where DS=2000, Es=3000, Bx=0010, SI=0020
- Q.5 Write short note on (any two) 14
 1) Overview of 8051 family
 2) Addressing modes of 8086
 3) I/O mapped I/O & memory mapped I/O

SECTION-B

- Q.6 A Write 8051 ALP or C. program to send 8-bit binary numbers from 0 to 9 to port 2 repetitively 07
 B Write a program to toggle. LED'S at port 1. 06
- Q.7 A Interface 0808/0809 'A to D' convector to 8051 micro controller. Write a program to convert analog i/p connected to 1no into digital. Store your result in accumulator. 07
 B Interface DC motor to 8051 and write a program in ALP to rotate DC motor for given speed. 06
- Q.8 A Draw a functional block-diagram of timer/ counter section of 8051. Also explain function of corresponding SFRS. 06
 B Assume an oscillator running at 12MHz controls an 8051 microcontroller. Write a subroutine to create a time delay of 20ms. 07
- Q.9 A Explain interrupt services provided by 8051 micro controller. 06
 B Interface DAC 08 to 8051. Write an ALP/C language program to generate triangular waveform. 07
- Q.10 Write short note on 14
 1) Interfacing of stepper motor
 2) Serial communication in 8051.
 3) Different modes of timer section of 8051.