Total No. of Printed Pages:02

SUBJECT CODE NO: H-197
FACULTY OF SCIENCE AND TECHNOLOGY
T.E. (EEP/EE/EEE)
Microcontrollers & Applications
(OLD)

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
1) Solve three Questions from each section.
2) Q.1 & Q.6 are compulsory.
3) Assume suitable data if necessary.

Q.1 Solve :- 14

i) Explain the function of code segment of 8086 microprocessor.
ii) Explain the function of Queue in 8086 microprocessor.
iii) Define the control flags & explain interrupt enable flag.
iv) What is opcode & operand of an instruction?
v) In what way is the LCALL instruction differ from A CALL instruction.
vi) What are difference in execution of following instructions
   a) mov A, # 28H,
   b) mov A, 28H
vii) With example, explain the function of rotate instruction.

Q.2 a) Explain the features of 8086 microprocessor. 07

b) Explain in detail generation of 20 – bit physical address of 8086 microprocessor. 06

Q.3 a) Explain different addressing modes of 8086 microprocessor. 07

b) Write ALP to substract the content of two external memory locations 7400 H and 7401 H. store result at 7402H. 06

Q.4 a) Explain the program center & data pointer of 8051 microcontroller. 07

b) Explain in detail port 0 function of 8051 microcontroller. 06

Q.5 Write a short note on (any three)

i) Overview of 8051 family. 05

ii) Data transfer instruction of 8051 04

iii) Comparison of microprocessor & microcontroller. 04

iv) I/O mapped I/O & memory mapped I/O 04

57A45DC387A2A7715C23327DC560F603

Q.6 Solve:- 14

a) Explain the function of ALE pin in 8051 microcontroller.

b) What is program and data memories of 8051 microcontroller.

c) Explain the Boolean processor 8051 microcontroller.

d) Does 8051 microcontroller support serial and parallel data transfer? How?

e) Explain the function of R × D & T × D PIN. Of 8051 microcontroller.

f) Explain how bit addressing is distinguished form byte addressing in 8051 microcontroller.

g) What is the function of interrupt control for 8051 microcontroller?

Q.7 a) Write a program to generate 50Hz frequency on pl06 bit. Use timer1. 07

b) Draw the interfacing of ADC 0808/0809 with microcontroller 8051. Analog signal is applied at IN-3 of ADC. Write a program to read byte from IN-3 of ADC and store it at memory location 1000H. 06

Q.8 a) Draw the interfacing of stepper motor with 8051 microcontroller. Write a program to rotate the stepper motor in anticlockwise direction continuously by step angle of 1.8°. 07

b) It is required to interface 8 LEDS to 8051 microcontroller. Draw the interfacing diagram and write a program to blink the LEDS on and off continuously. Use common cathode configuration. 06

Q.9 a) Explain in detail interrupts of 8051 microcontroller. 07

b) Explain in detail TMOD Register of 8051 microcontroller. 06

Q.10 Write a short note on (<u>any three</u>)

1) Timer mode 0 of 8051 microcontroller. 04

2) Features of 8051 microcontroller. 05

3) Interfacing of seven segment display. 04

4) Serial interface of 8051 04

57A45DC387A2A7715C23327DC560F603