Roll No. ....

42111

May 2019

M.Tech. (ECE) Ist Semester (Reappear)

ADVANCED MICROPROCESSOR AND MICRO CONTROLLERS

(E16C-601)

Time : 3 Hours]   [Max. Marks : 75

Instructions :

(i)   *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*

(ii)   *Answer any four questions from Part-B in detail.*

(iii) *Different sub-parts of a question are to be attempted adjacent to each other.*

(iv)   *Assume any suitable missing address/daia.*

PART–A

1.   (a)   Enlist *four* specific functions performed by ALU.

(1.5)

(b)   What is the purpose of index registers in microprocessor?   (1.5)

(c)   Why the CX register is called count register?   (1.5)

(d)   How is bit addressing feature important in 8051 ?

(1.5)

(e) How is 8051 stack pointer different from other microprocessors? (1.5)

(f) What is the state of 68000 processor, when it responds to an interrupt? (1.5)

(g) What is ASCII code? (1.5)

(h) What is the major difference between logic analyzer and oscilloscope? (1.5)

(i) Enlist 8051 register associated with interrupt handling. (1.5)

(j) What is the role of Test pin in 8086? (1.5)

PART–B

2. (a) What do you understand by working model of a microprocessor? Explain Fetch and Execution cycle. (7.5)

(b) How can an instruction in a 16-bit microprocessor be 32 bit long? Why can't the instruction be 24 bit long? (7.5)

3. (a) Write an 8086 Assembly language program to convert a BCD number to its hex equivalent. (10)

(b) Write syntax of IN and OUT instruction in 8086. Show with example. (5)

4. (a) What are the SFRs associated with 8051 timers. Explain Mode 0 operation of the 8051. (7.5)

(b) Write a program in 8051 to convert binary number to BCD number. (7.5)

5. (a) An 8051 microcontroller is connected via pin P3.2 to a switch. Write an algorithm and flow chart to generate (i) 1 kHz if switch is on (ii) 10 kHz if switch is off. (8)

(b) Enlist various protocols of serial communication. Explain RS-232 in detail, showing microprocessor system communication with other device. (7)

6. (a) Draw Instruction format for 68000. Give example of any branching instruction. (7½)

(b) Enumerate various addressing modes of 68000. Explain Register Data Addressing with an example. (7½)

7. Show microprocessor based design giving example of microprocessor-based temperature controller using thermocouple as a transducer. (15)

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