2002 SCHEME

USN | | | | | | | | | | |

EC54

Fifth Semester B.E. Degree Examination, June 2012

Advanced Microprocessor

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

1 a. Explain with a block diagram, the personal computer model indicating address, data and control bus structure. **(05 Marks)**

b. With a block diagram, explain the internal architecture of 8086 indicating bus interfacing and execution units. **(10 Marks)**

c. What are the advantages and dividing memory into segments? **(05 Marks)**

2 a. Explain the various addressing modes used in 8086 with an example of each. **(10 Marks)**

b. Explain the operation of the following :
i) CALL DWORD PTR [BX] ii) SCASW iii) NEG iv) FCOM **(06 Marks)**

c. When a data word is stored at ODD address boundary 8086 processor needs 2 bus cycles for read, where as same data word stored at EVEN address boundary it needs one bus cycle for read. Justify your answer. **(04 Marks)**

3 a. Explain the following with examples of each :
i) Segment overriding prefix ii) Pseudo OP codes **(04 Marks)**

b. Write 8086 ALP to do the following operation on array of ten data bytes. If data byte is even leave it unaltered, else convert to even using logic instruction and store back at the same location. Use LODSB/STOSB instruction in your program. **(06 Marks)**

c. Write an ALP to evaluate the following equation :
$Y = P * Q + R * S$ where P, Q, R and S are 8 bit datas. Use main and FAR procedure for multiplication. **(10 Marks)**

4 a. What is modular programming? What are its advantages? **(05 Marks)**

b. Explain macros versus procedures. **(05 Marks)**

c. What do you mean by parameter passing? Explain with an example, at least two methods of passing parameters to convert 2 digit BCD to Hex. **(10 Marks)**

5 a. With a typical circuit diagram, explain the operation of 8086 in minimum mode. **(10 Marks)**

b. What is bus cycle? Explain memory read bus cycle in minimum mode. **(06 Marks)**

c. What are the functions of QS1, QS0 pin in maximum mode and which device use these pins? **(04 Marks)**

6 a. How are the interrupts classified in 8086? How are their priority determined? Explain the interrupt sequence after the recognition of INTR – Request. **(10 Marks)**

b. How are the data represented in NDP? Give format of each, with one numerical example of each and explain how they are stored in memory. **(10 Marks)**

7 a. Explain with a block diagram, the architecture of 80×87 arithmetic processor. **(07 Marks)**

b. How are the instrumentation set of 80×87 are classified? **(05 Marks)**

c. WALP to find the resonant frequency of LC-tank-circuit using NDP instructions. **(08 Marks)**

8 a. List out the features of 80486 processor. **(08 Marks)**

b. Write notes on : i) PCI-Bus **(07 Marks)**
ii) Library routines. **(05 Marks)**

* * * * *