Code No.: 10294/A

FACULTY OF ENGINEERING

B.E. III/IV Year (ECE) I Semester (Supplementary) Examination, May 2006

COMPUTER ORGANISATION AND MICROPROCESSORS

Time : 3 *Hours*] [*Max. Marks* : 75

Answer **all** *questions of* Part A.
Answer **five** *questions from* Part B.

Part A – (Marks : 25)

1. What is an addressing mode? Mention different types of addressing modes with necessary examples. 3
2. Derive the bar correct floating point number representation for the decimal number +3.25 and –3.25 using the 32-bit floating point standard. 3
3. Distinguish between memory mapping and I/O mapped I/O schemes. 2
4. How the memory hierarchy is used to obtain a high performance at reduced cost for a computer? 2
5. Write the classification of instruction set of 8085 and give examples in each case. 3
6. Assume that memory location 2345H has a data byte of 67H. Specify the contents of address bus A_{15} – A_8 and multiple bus AD7 – AD0, when 8085 assert no RD signal. 2
7. What are the various modes of operation of 8253 timer? 2
8. Show the interfacing circuit of 8085 with a keyboard matrix indication functional lines. 3
9. How does the pipe lining improves the performance of a machine? 2
10. Mention important functions of an operating system. 3

Part B – (Marks : 5 × 10 = 50)

11. (a) Explain the concept of Von-Nuemann machine. What are its drawbacks? 4
    (b) What is an instruction format? How does the instruction format influences the architecture and hence the performance of computer? 6

12. (a) What is interrupt system? How does this improve the through put of a microprocessor? Explain the interrupt feature provided in microprocessors and the process involved in its servicing. 7
    (b) Distinguish various types of printers. 3

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13. (a) Briefly explain the concept of virtual memory. 6

(b) A two level memory system has its access time 10^{-6} sec. and 10^{-8} sec. respectively. Average access time of the hierarchy is 10^{-7} sec. What is the bit ratio and how to reduce the average access time from 10^{-4} to 10^{-5} sec. 4

14. Explain the following instructions of 8085. 10

(a) SIM (b) RIM (c) DAA (d) PCHL (e) RAR

15. (a) Draw a timing diagram of each and explain the following instructions. 6

(i) MOV A,M (ii) IN01H

(b) Explain the interrupt structure in 8085. 4

16. Draw the functional schematic to interface 8-bit DAC to 8085 through 8255 and write an ALP to generate traingular wave output. 10

17. (a) Compare the features of RISC and CISC machines. 5

(b) Explain the importance of BIOS in system programming. 5