

G 3535

M.C.A. DEGREE EXAMINATION, MAY/JUNE 2007.

Third Semester

MC 1702 — MICROPROCESSORS AND APPLICATIONS

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain the terms machine cycle, instruction cycle.
2. Explain the following instructions :
 - (a) SHLD addr.
 - (b) STAX D.
3. Name the pointer group of registers in 8086, briefly explain their use.
4. Explain the following instructions :
 - (a) IMUL DI.
 - (b) LOOP addr.
5. What is the main drawback of DRAMs? How is it overcome?
6. What do you understand by handshaking?
7. Explain real mode and protected mode operations.
8. What is super scalar architecture?
9. What is 2 key lockout and n key rollover?
10. Name the two types of CRT display systems.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the addressing modes of 8085 giving one example for each mode. (12)
(ii) Explain how serial data transfer can be carried out using the SID, SOD lines of 8085. (4)

Or

- (b) Draw the timing diagram for MVI A, 8CH instruction and explain the operation of the processor T state by T state. (16)
12. (a) (i) Explain as to how the pipelined architecture works in 8086. (8)
(ii) What is the use of segment registers? Explain how the physical address is obtained using segment registers. (8)

Or

- (b) Explain the data related and branch related addressing modes of 8086 (using schematic diagram) in detail. (16)
13. (a) (i) With neat diagrams explain how memory is organized and data accessed in 8086 Processor based systems. (10)
(ii) Tabulate differences between I/O mapped I/O and memory mapped I/O. (6)

Or

- (b) (i) Name the different methods of data transfer. (2)
(ii) Explain handshaking mode of data transfer assuming an input device and output device are to be interfaced with a microprocessor in handshaking mode. (14)
14. (a) (i) Draw the programming model of 80386 and explain. (8)
(ii) Explain the protected mode operation of 80386. (8)

Or

- (b) (i) Draw the processor model of Pentium processor and explain its salient features. (8)
(ii) Show the control registers of Pentium processor and explain. (8)
15. (a) With neat block diagrams of 8279 key board display controller, explain its working and salient features. (16)

Or

- (b) Draw the block diagram of a CRT controller and explain its working. Also explain how it can be interfaced to 8085 processor. (16)