Y 3027

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

Third Semester

CA 231 — MICROPROCESSOR AND ITS APPLICATIONS

(Regulations 2002)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List any two machine control instruction with its operation.

2. Draw the Block diagram of microcomputer.

3. Write the operation of PUSHAD and POPAD.

4. What is assembler program and Linker program?

5. Write the advantage and dis-advantage of Memory mapped I/O.

6. Differentiate between minimum and maximum mode operation.

7. Define handshaking and explain how to use it with I/O device.

8. What is the use of DMA?

9. What is virtual memory? When it is used?

10. What advantages does a micro controller have over a micro processor?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the Bus structure of 8085.   (4)

    (ii) Explain the architecture of 8085 with a block diagram.   (12)

Or

    (b) Discuss in detail the internal architecture of 8086.   (16)

12. (a) Explain the various addressing mode supported by 8086 with an example. (16)

Or

(b) Explain addition, subtraction, multiplication and comparison instruction in 8086 with an example. (16)

13. (a) Discuss the characteristics of four common types of memory. (16)

Or

(b) Discuss Bus timing in 8086 Microprocessor. (16)

14. (a) Explain the operation of programmable communication interface (8251) in detail with functional block diagram. (16)

Or

(b) (i) Explain the working of DMA controller with neat diagram. (12)

(ii) Describe DMA transfer. Why is DMA data transfer faster than doing the same data transfer with program instruction? (4)

15. (a) (i) Describe the architectural design of 80286 microprocessor. (12)

(ii) Explain any two modes of operation of PENTIUM microprocessor. (4)

Or

(b) Explain in detail the operation of a simple four-coil stepper motor with neat diagram. (16)

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