(Pages : 2)

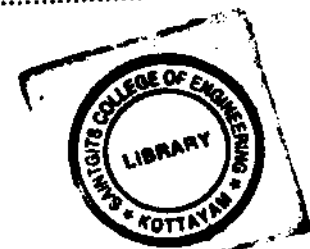# B.TECH. DEGREE EXAMINATION, MAY 2014

Eighth Semester

Branch : Electrical and Electronics Engineering

ADVANCED MICROPROCESSORS (Elective II) (E)

(Old Scheme—Supplementary/Mercy Chance—Prior to 2010 Admissions)

Maximum : 100 Marks

Time : Three Hours

Part A

Answer all questions briefly.
Each question carries 4 marks.

1. Find the content of BL register after the execution of the following instructions :—

       MOV AX, 0502H
       MUL AL
       MOV BL, AH.

2. Identify the errors in the following instructions :—

       MOV CH, BX,
       MOV ES, DS,

3. Write an ALP to find the LCM of two bytes.

4. Give the logical circuit for memory read, write and IO read, write signals derived from the 8086.

5. What is the size of physical and virtual memory in 80286?

6. Explain the stack architecture of 8087.

7. Draw the circuit for generating memory and I/O control signals for 80386?

8. What is the purpose of (i) BLAST and (ii) $\overline{\text{KEN}}$ pins on 80486?

9. List new flag bits added to the Pentium.

10. Explain the address space of Pentium III.

(10 × 4 = 40 marks)

Part B

Answer all questions.
Each full question carries 12 marks.

11. (a) Draw and explain the minimum mode circuit connection of 8086. (6 marks)

    (b) Draw the timing diagram of MOV [SI], AL instruction and explain the signal flow. (6 marks)

Or

12. (a) Explain the use of different flags available in 8086, with suitable examples. (8 marks)

    (b) Explain the interrupt cycle of 8086. (4 marks)

Turn over

13. Explain the instruction set, its classification, in 8086, with example to each.

Or

14. (a) Show how the signals on the microprocesor pins change for a memory write operation when 8086 writes a data byte 11H into 20000H location.

(6 marks)

(b) Design and draw the decoding logic circuit for interfacing an 8-bit output port in memory mapped I/O configuration.

(6 marks)

15. (a) Describe how 80286 generates physical address from the logical address.   (8 marks)

(b) Determine the physical address of the top of the stack in 80286 rea mode, if SS = 4000H and SP = A900H.

(4 marks)

Or

16. (a) Explain the four level privilege mechanism in the 80286 virtual mode.   (6 marks)

(b) What are the additional instructions and extensions to 8086 instructions that are provided in 80186 processor?

(6 marks)

17. (a) Explain the register organisation in 80486.   (4 marks)

(b) Explain clearly the paging mechanism of 80386.   (8 marks)

Or

18. (a) How the 80386 addresses a memory segment in the protected mode using a selector and a descriptor?

(6 marks)

(b) Explain the TSS of 80386 and its function.   (6 marks)

19. (a) Describe the super architecture and the operation of branch prediction logic in Pentium processor.

(8 marks)

(b) How many instructions can the Pentium processor execute simultaneously? Explain.

(4 marks)

Or

20. (a) Describe the memory system for Pentium processor.   (6 marks)

(b) Discuss the SIMD technique and the types of data and operations suited for this scheme.

(6 marks)

[5 × 12 = 60 marks]