

G 1630

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

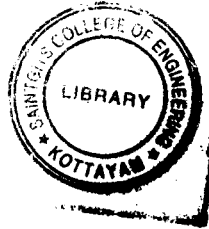
Fourth Semester

Branch : Computer Science and Engineering

ADVANCED MICROPROCESSORS AND PERIPHERALS (R)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]



Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 4 marks.*

1. How 8255 can operate in mode 1 ?
2. Explain the basic types of serial communication. Explain the format and typical control register for specifying the character format.
3. What is a key debounce ? Explain key debounce using hardware and software.
4. Describe how display is cleared and display position is selected in an LCD display.
5. What are the roles of various flags in 8086 flag register ?
6. Give the important features of stack memory addressing mode.
7. What are the roles of status signals S0, S1, S2 and queue status bits Q 50 and Q 51 w.r.t. microprocessor ?
8. Explain the access rights byte in the descriptor of 80286 along with definition of segment descriptor.
9. How is the paging directory located by 80386 ?
10. Explain how the superscalar dual integer units improve performance of Pentium processor.

(10 × 4 = 40 marks)

Part B

*Answer all questions.
Each question carries 12 marks.*

11. Explain the functional block diagram of 8255. Describe how its ports can be programmed to interface I/O devices.

Or

Turn over

12. (a) Explain the format of the control register of 8251 chip. In order for the receiver and transmitter baud rates to be 200 and 1200 respectively, what should be the frequency applied to \overline{TXC} and \overline{RXC} if baud rate factor is 16.

(6 marks)

- (b) Explain the formats of the following two commands of 8279 keyboard/display interface chip ;
(i) read FIFO sensor memory ; and (ii) write the display memory.

(6 marks)

13. Explain how ADC 0804 is interfaced to the microprocessor, using neat diagrams.

Or

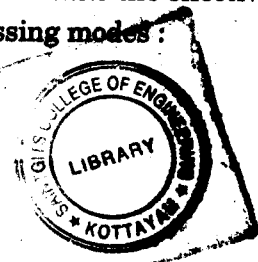
14. Draw the hardware schematics to design to interface 8255 with microprocessor using I/O interfacing.

15. Define addressing modes. Explain the various data related addressing modes of 8086.

Or

16. Given that BX = 0136, DS = 2000, displacement = 1B57 (D1) = 10A5. Determine the effective and physical addresses resulting from the registers and the following addressing modes :

- (i) Direct addressing.
- (ii) Register indirect using BX.
- (iii) Register relative using BX.
- (iv) Based indexed.
- (v) Relative based index.



17. Explain the various string instructions of 8086 and write program using 8086 instruction set to compare two strings stored in memory. If the strings are equal store FFH in AL register and 00H if they are not equal.

Or

18. (a) Explain the physical address formation in protected virtual address mode of 80286.

(6 marks)

- (b) Describe the four level privilege mechanism in the 80286 virtual mode.

(6 marks)

19. (a) Explain task switching.

(4 marks)

- (b) Discuss how does 80386 keep track of where the global descriptor table and the currently used local descriptor table are located in memory.

(8 marks)

Or

20. Clearly explain various features of Pentium processors that make its program execution very fast.

[5 × 12 = 60 marks]