F 7784 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2009

Fourth Semester

Branch : Computer Science and Engineering

ADVANCED MICROPROCESSORS AND PERIPHERALS (R)

(Supplementary—Prior to 2007 admissions only)

Time : Three Hours Maximum : 100 Marks

Part A

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

1. With a block diagram, show the connection of the keyboard Interface KDI to 8085 using 8279.
2. Explain the model operation of 8255.
3. Give a typical 8 bit ADC chip specifications.
4. What are the advantages of microcontroller over a microprocessor ?
5. Explain the use of instruction queue available in 8086.
6. Describe the rules and advantages of segmentation in 8086.
7. Explain the following instructions of 8086 :

   (i) AAA ; (ii) TEST ;

   (iii) XLAT ; (iv) DAS.
8. How can operating system kernal procedures and data be protected from access by application programs in 80286 ?
9. What are the various fields in a segment descriptor of 80386 ?
10. Explain the important features of paging mechanism.

(10 × 4 = 40 marks)

Part B

Answer **either** (*a*) **or** (*b*) *of each module.*
Each full question carries 12 *marks.*

MODULE 1

11. (a) Draw the internal architecture of 8251 and show how it helps in communication between two processors.

(12 marks)

Or

Turn over

(b) (i) Describe the control word formats of 8255 in various modes. (6 marks)

(ii) Describe the functions and one use of 8252. (6 marks)

MODULE 2

12. (a) With necessary diagrams, show how an 8 bit ADC chip can be interfaced with 8085. (12 marks)

Or

(b) Draw the block diagram arrangement to interface a keyboard and a 7-segment display to a 8085. (12 marks)

MODULE 3

13. (a) In 8086, the following data is available : (BX) = 2000, (DI) = 1000, Displacement = 0500 (DS) = 3000. find the physical address in the case of :

(i) Register indirect addressing ; (ii) Register relative addressing ;

(iii) Based indexed addressing ; (iv) Relative Based Indexed Addressing.

Assume missing data suitably. (12 marks)

Or

(b) With a neat block diagram, explain the internal architecture of 8086. What are its major difference between 8088 ? (12 marks)

MODULE 4

14. (a) How the instruction set of 8086 is divided ? Explain each with an example and instruction format. (12 marks)

Or

(b) (i) What are real and protected modes in 80286 ? Explain. (6 marks)

(ii) Explain virtual memory. How much virtual memory can an 80286 address ? (6 marks)

MODULE 5

15. (a) (i) Describe the descriptors and selectors with respect to 80386. (6 marks)

(ii) Explain the branch prediction in pentium processor. (6 marks)

Or

(b) Describe the process of address translation from logical address to physical address in 80386 in protected mode. (12 marks)

[5 × 12 = 60 marks]