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RM-7069-R

B. E. III (Sem. VI) (Computer) Examination

May / June – 2010

Advance Microprocessor Systems & Applications

Time : 3 Hours]

[Total Marks : 100

Instruction :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. 3 (Sem. 6) (Computer)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Advance Microprocessor Systems & Applications"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="0"/> <input type="text" value="6"/> <input type="text" value="9"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="1&2"/>	
	Student's Signature

SECTION - I

- 1 (a) Answer the following : 10
- (i) What is the physical address corresponding to DS : 103FH if DS = 90 D0H?
 - (ii) Each memory segment is _____ bytes long and address within a segment is referred to as _____ address.
 - (iii) Register _____ is the only register used as an I/O address pointer in IN and OUT instruction.
 - (iv) The 8086 can be single stepped if the _____ flag is set.
 - (v) Explain XLAT instruction with example.
 - (vi) Bring out the difference between DIV and IDIV instructions.
 - (vii) What is the difference between a near and a far memory location?
 - (viii) Identify the addressing mode of the following instruction:
MOV AH, TEMP [BP+SI]; TEMP defines a memory location.
 - (ix) Explain Even directive.
 - (x) Write about the following instruction :
MOV CS: [BX], DL
- (b) Explain IVT in brief. 4
- (c) Explain instruction pipelining and its advantages. 4

- 2 (a) Write a program that will accept a string from keyboard in lowercase, convert it in upper case and display result on screen. 8

OR

- 2 (a) Write a program to reverse the digits of a double word stored in memory. Store the result in memory. 8
(b) Explain various techniques of passing parameters to subroutines in 8086. Give the advantage and disadvantage of each. 8
- 3 (a) Why segmentation is required? What is the advantage of using a CPU register for temporary data storage over a memory location ? 6
(b) Explain the following 8086 instructions. 4
FPMEM FRNDINT.
(c) Write an 8087 program to compute the area of a circle. 6

OR

- (c) Explain complete process, when ESC instruction is encountered with respect to 8086 and 8087. 6

SECTION - II

- 4 (a) Match the following features with the appropriate processor from the Intel family that was the first to support it : 10
- (i) On chip common code and data cache (a) 8085
 - (ii) Integrated programmable interrupt controller (b) 8086
 - (iii) Built in Self Test (BIST) (c) 80186
 - (iv) Instruction Prefetch (d) 80286
 - (v) Interrupt (e) 80386
 - (vi) Speculative Execution (f) 80486
 - (vii) Coprocessor support (g) Pentium
 - (viii) Virtual Memory support (h) Pentium Pro
 - (ix) Integrated Programmable timers
 - (x) Two Integer Pipelines U and V

- (b) Explain how conversion of a linear address to a physical address is performed in 80386 μ P when paging mode is enabled. What is the maximum size of a segment in 80386 μ P.

OR

- (b) An IBM PC adapter board uses 10×15 dot matrix. **6**
For that find the following :
(i) Total scan lines per frame including retrace
(ii) Horizontal Synchronize frequency
(iii) Character clock frequency.

Assuming that we require 80+20 characters per row and 25+2 rows per frame and vertical synchronize frequency is 50 Hz.

- 5** (a) Draw and explain block diagram of 80286 μ P. **8**
Mention how much physical and virtual memory space is accessible in 80286 μ P.

OR

- 5** (a) Draw the flowchart for programming sequence to be followed by software routines for printer interface. **8**
(b) Describe write Pre-Compensation and Data Separation using PLO for Floppy Disk. **8**

- 6** (a) Design the memory decoding logic circuit and draw the required interfacing diagram to interface the following to 8086 : **10**
(i) 32 kB RAM - using 8 kB RAM ICs.
(ii) 64 kB ROM using 8 kB ROM ICs
Higher addresses are to be assigned to ROM and then RAM.

- (b) Answer the following (any **two**) **8**
(i) Explain ISA and EISA buses in brief
(ii) What is meant by MMX?
(iii) Explain SCSI bus
(iv) Write a note on Call Gates.