Total No. of Questions : 10 Roll No. : 0701.CS1410.14

B.E. FIFTH SEMESTER UECU (GR) EXAMINATION DECEMBER, 2016

(Branch : Computer Science and Engineering)

CS 5008 MICROPROCESSOR AND INTERFACING

Time : *Three Hours* *Maximum Marks* : *70*

Min. Pass Marks : *22*

Note : Attempt all questions. All questions carry equal marks.

1(a) Write the classification of microprocessor based on applications. 07

(b) Show by block diagram the register organization of 8086 microprocessor and explain the use of any five registers. 07

OR

2 (a) Draw and explain flag register structure of 8086 microprocessor. 07

(b) Explain any *three* of the followings :- (i) EPROM (ii) DRAM (iii) SRAM (iv) Nonvolatile RAM 07

3 (a) What is addressing mode? Explain in brief addressing modes of 8086 microprocessor. [01,06]

(b) Explain any *four* of the followings :- (i) READY (ii) HLDA (iii) BHE (iii) ALE (iv) DT/$\overline{R}$ (v) NMI 07

OR

4 (a) Describe the *Read* machine cycle of 8086 microprocessor. 07

(b) Write the operation performed by following instructions:
(1) POP (2) CMP (3) RCL (4) MUL (5) OUT (6) CALL (7) CLC 07

5 (a) What is interrupt? Write various types of interrupts used in 8086 microprocessor. [02,05]

(b) Write an assembly language program to move a byte string of 16 bytes long from the offset 0200H to offset 0300H in the segment 5000H. 07

OR

6(a) What is 8259A programmable interrupt controller. Draw and explain internal block diagram of interrupt controller. [02,05]

(b) Write a 8086 assembly language program that add the contents of memory location 4000H offset 0800H to the content of accumulator. 07

7(a) What is Direct Memory Access (DMA) scheme. Explain the operations of 8237 DMA controller. [03,04]

(b) What is EISA and VESA buses? Explain 07

OR

8(a) What is 8254 programmable interval timer? Explain how it is used to generate delay. [02,05]

(b) What is Programmable communication interface 8251A? Explain 07

9(a) What is microcontroller? Explain the architecture of 8051 microcontroller. [02,05]

(b) Describe in details single chip micro computer system. 07

OR

10 Write short notes on any two of the followings :- [07,07]
(i) Pentium microprocessor systems
(ii) Math co-processor
(iii)Microcomputer Development system

Total No. of Questions : 10

Roll No. : 0701CS131017

B.E. FIFTH SEMESTER UECU (G) / RGPV (N) EXAMINATION DECEMBER, 2015

(Branch : Computer Science & Engineering)

CS-5008 / CS-601(N) MICROPROCESSOR & INTERFACING

Time : *Three Hours* | *Maximum Marks* : *70/100* | *Min. Pass Marks* : *22/35*

Note : *Attempt all questions. All questions carry equal marks.*

1 (a) Draw internal block diagram of 8086 microprocessor. Explain in brief different phases of instruction execution. 07

(b) What is code segment register and instruction pointer register in 8086 microprocessor? How both registers are used to produce 20-bit physical address? 07

OR

2 (a) Explain the bus interface unit (BIU) of 8086 microprocessor. 07

(b) Describe the write machine cycle of 8086 microprocessor. 07

3 (a) What is addressing mode? Explain in brief addressing mode used in 8086 microprocessor. 07

(b) Write the operation performed by following instructions:
(1) PUSH (2) XCHG (3) LEA (4) DIV (5) TEST (6) SAR (7) RCL 07

OR

4 (a) Draw 8086 microprocessor pin diagram and write the function of signals used in minimum mode only. 07

(b) Explain *four* steps used in instruction fetch execute cycle. 07

5 (a) Write various types of interrupts used in 8086 microprocessor. Explain OVERFLOW interrupt. 07

(b) Write an assembly language program that perform BCD operation for addition. 07

OR

6 (a) Write the various methods of parallel data transfer. 07

(b) Write a 8086 assembly language program to find out the smallest number from an unordered array of sixteen 8-bit numbers stored sequentially in memory locations starting at offset 0800H in segment 1500H. 07

7 (a) By means of a simple block diagram, explain how a 8237 DMA controller operate in a microcomputer system. 07

(b) Write short note on ISA and EISA buses. 07

OR

8 (a) How an 8279 can be used to refresh a multiplexed LED display. 07

(b) Write short note on Accelerated graphics port (AGP). 07

9 (a) What is microcontroller? Write the difference between microcontroller and microprocessor. 07

(b) What is bit-slice processors? Explain. 07

OR

10 (a) Write short notes on 8086 microprocessor family. 07

(b) What is math co-processor? Explain. 07

Total No. of Questions : 10

Roll No. : 0701EE12104-C

B.E. FIFTH SEMESTER UECU (G/NG) / RGPV EXAMINATION DECEMBER, 2014

(Branch : Computer Science & Engineering)

CS-5008 / CS-601(N) MICROPROCESSOR & INTERFACING

Time : Three Hours | Maximum Marks : 70/100 | Min. Pass Marks : 22/35

Note : Attempt all questions. All questions carry equal marks.

1(a) What is microprocessor? Explain in detaiis.
(b) Explain the bus interface unit (BIU) of 8086 microprocessor.

OR

2 (a) Write the classification of microprocessor based on applications.
(b) Describe simple microcomputer bus operation.

3 (a) Draw the 8086 pin diagram and write the function of signals used in minimum mode only.
(b) Describe any *seven* bit manipulation instructions.

OR

4 (a) What is addressing mode? Write the types of addressing modes.
(b) Describe write machine cycle of 8086 microprocessor.

5 (a) Explain the function of 8259A priority interrupt controller.
(b) Write an assembly language program that add a data located at offset 0500H in 7000H segment to another data byte available at 0600H in same segment and store the result in 0700H in same segment.

OR

6(a) Write the methods of parallel data transfer.
(b) Write an assembly language program to move a byte string of 16 bytes long, from the offset 0500H to offset 0700H in the segment 2000H.

7(a) Explain the internal block diagram of 8254 programmable timer/counter.
(b) Write short note on universal series bus (USB).

OR

8(a) What is direct memory access (DMA) data transfer? Explain.
(b) Write short note on Extended ISA buses.

9(a) Explain the 8086 microprocessor family.
(b) Explain the block diagram of math coprocessor.

OR

10 (a) What is microcontroller? Write the features of microcontroller.
(b) Describe single chip micro computer system.

Total No. of Question : 05 Roll No. : 0701.....

B.E. FIFTH SEMESTER UECU (G) EXAMINATION DECEMBER, 2013

(Branch : Computer Science & Engineering)

CS-5008 MICROPROCESSOR & INTERFACING

Time : Three Hours Maximum Marks : 70
Min. Pass Marks : 22

Note : Attempt any two parts from each question (1 to 4) and as directed in question 5. All questions carry equal marks.

1(a) Define the term microcomputer and microprocessor. Describe how a microcomputer fetches and execute an instruction.

(b) What are static and dynamic RAMs? State the difference among ROM, PROM, EPROM, and EEPROM.

(c) Draw the internal architecture of 8086 microprocessor and describe the function of instruction queue.

2(a) Explain the concept of segmented memory. How many segments are there in 8086 memory and how these segments are maintained by 8086?

(b) What are various flags of 8086 flag register? Write the function and position of each flage in flag register.

(c) Explain the function of following signals of 8086 –
(i) ALE (ii) $\overline{LOCK}$ (iii) DEN
(iv) DT/$\overline{R}$ (v) $\overline{BHE}$

3(a) What do you understand by addressing modes? What are the different addressing modes supported by 8086? Explain each one with suitable example of instruction.

(b) For the following instructions, find out the syntax error (if any). Write correct from of instruction and explain the operation performed by 8086 on execution of instruction.
(i) MOV BH, AX (ii) MOV 7632H, CX (iii) MOV DX, CL
(iv) IN BL, 04H (v) ADD AL, 2073H

(c) Define the following assembler directires with example –
(i) ASSUME (ii) DB (iii) DW
(iv) EQU (v) EVEN

4(a) Write an assembly language program to add the contents of the memory location 2000H : 0500H to contents of 3000H : 0600H and store the result in location 5000H : 0700H.

(b) Define the following signals of DMA Controller -
(i) $DRQ_0 - DRQ_3$
(ii) $\overline{DACK_0} - \overline{DACK_3}$
(iii) HRQ
Describe the series of action that a DMA controller will perform after it receives a request from a peripheral to transfer data from a peripheral device to memory.

(c) Explain the control word format of 8254 timer. What are different modes of operations of 8254? Explain mode-0.

5 Write short note on any four of the following –
(i) 80286 (ii) 80287
(iii) Timer and counter in 8051 (iv) USB
(v) ISA Bus (vi) 8086 interrupt
(vii) 8255 I/O device (viii) Stack and procedure

Mani Sachdev

Roll No.

al No. of Question : 05

B.E. SIXTH SEMESTER UECU (NG) EXAMINATION JUN

(Branch : Computer Science & Engineering)

CS-6001 MICROPROCESSORS AND INTERFAC

M 100
Mi 35

Time Three Hours

Note Attempt any two parts from each question. All questions carry equal marks.

1(a) Draw block diagram of simple model of microprocessor and explain simple binary program stored in memory.

(b) Explain the different memory segments used in 8086 microprocessor. Find physical contents of registers as – DS = 2000H, Ax = 1000H, Bx = 5000H. Find address of source in following instructions:
(i) MOV Ax, [5000 H] (ii) MOV Ax, [Bx] (iii) MOV Ax,

(c) Define the following :
(i) SRAM and DRAM (ii) EPROM and EEPROM
(iii) Interrupt flag and Trap flag (iv) Bus Interface Unit and Execution

2(a) Write the function of following pin signals of 8086 :
(i) NMI (ii) $\overline{TEST}$ (iii) $\overline{BHE}$ (iv) $\overline{LOCK}$ (v) ALE

(b) Write the function of following instructions of 8086 :
(i) PUSH AX (ii) OUT AX (iii) ADC 2050H (iv) LOOP Label (v) WAIT

(c) Interface two RAMs of 32k each at address starting : 00000H and two ROMs of 16k each at address starting : F8000H with 8086.

3(a) Write an assembly language program to move a 16-bytes long string from offset 2000 to 3000 in the same segment.

(b) Differentiate between the following :
(i) Programmed I/O and Interrupt driven I/O
(ii) Memory mapped I/O and Direct I/O

(c) Explain the different modes of operation of 8255 I/O device and write the control word format of 8255 for each mode.

4(a) What is 8254? Explain the significance of each bit of control word register format of 8254.

(b) Explain the following signal description of 8251 USART :
(i) TXD (ii) RXD (iii) $\overline{DTR}$ (iv) $C/\overline{D}$ (v) $\overline{CTS}$

(c) Write the features of 8237A and explain the following modes of DMA transfer :
(i) Single transfer mode
(ii) Block transfer mode
(iii) Demand transfer mode

5(a) What are the advantages of microcontroller based system over microprocessor based system? Write the features of 8051 family of microcontroller.

(b) Write the function of following signals of 8051 :
(i) ALE / PROG (ii) $\overline{PSEN}$ (iii) TXD
(iv) $\overline{INT_0}$ and $\overline{INT_1}$ (v) T_0 and T_1

(c) Write short note on any two of the following :
(i) 80286 (ii) 80386 (iii) 8087