POKHARA UNIVERSITY

el: Bachelor
gramme: B.E
urse: Microprocessor and Assembly Language Programming

Semester – Fall

Year : 2013
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

ndidates are required to give their answers in their own words as far practicable.
he figures in the margin indicate full marks.
ttempt all the questions.

Differentiate microprocessor and microcontroller. Explain the chronological development of Intel microprocessor. 7

Draw the Functional block diagram of 8085 microprocessor and explain 8

Write an assembly language program of 8086 to read a string , count the vowels and display them in clear screen with reverse attribute 8

Explain assembler. Describe one-pass assembler and two – pass assembler with suitable diagrams. 7

Write a program to input string from keyboard and display it. 7

Define linking and relocation. Write an ALP to copy the contents of "TABLE 1" which contains 10 numbers into "TABLE 2" in reverse order. 8

Differentiate between memory mapped and I/O mapped input output. Draw a circuit diagram of an interfacing circuit that contains 4 KB RAM and 4 KB ROM assuming base address of RAM is 8000H. 8

) What is IVT in 8086? Explain the table in detail with diagram. is the difference between IDT and IVT? 7

a) Why 8255 PPI is used in IO interface? Explain 8255 PPI with block diagram. 8

b) What are the prority modes of 8259 PIC. Explain 8259 interrupt operation with block diagram. 7

6. a) Write a program for 8086 assembler to reverse the string read from keyboard.

   b) Draw a I/O write cycle timing diagram for minimum mode.

7. Write short notes on **any two:**

   a) Addressing Modes of 8085

   b) DMA

   c) Memory

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Spring

Year : 2013
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a) Draw the internal architecture of 8 bit microprocessor and explain it. 8
b) Compare Microprocessor, Microcomputer and Microcontroller. Which is better for high speed operation? Give reason. 7
a) Draw the timing diagram for the 8085 instruction STA 2013H. 8
b) Write a program for 8086 assembler to find the sum of even numbers from given array? 7
a) Explain assembler. Describe one-pass assembler and two-pass assembler with suitable diagrams. 7
b) Write an 80x86 programs to input string from the keyboard and display the characters on the monitor. 8
a) What do you mean by address decoding? Design an address decoding circuit to interface 2K×8 RAM, 2K×8 ROM and 8K×8 RAM with starting address 0000h. 7
b) What do u mean by IVT? Explain various interrupts of 8086 IVT. 8
a) How interrupt processing occurs in a microprocessor? Explain vector chain and polled interrupt. 8
b) Why 8251 USART is used in IO interface? Explain its use with block diagram. 7
a) What is DMA controller? How can we accommodate 16 interrupt sources with 8259 PIC? 8
b) Describe its internal architecture of 8254 PIT. 7

Write short notes on: (Any two) 2×5

a) 8086 flag register
b) Synchronous and Asynchronous bus
c) Memory Hierarchy.

POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2014
Programme: BE | Full Marks: 100
Course: Microprocessor and Assembly Language Programming | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a) What is microcontroller? Differentiate between Intel 4004 and Intel 8008 microprocessor. 7

b) Draw the timing diagram of 8085 instruction MVI A,12H. 8

a) Write an ALP in Intel 8085 microprocessor to find largest and smallest of 10 bytes stored in memory location starting from C001H and store the largest number in port 80H and the smallest number in port 81H. 8

b) Write an assembly language program for 8086 to accept the number from user through keyboard, calculate its factorial and prints on screen. 7

3. a) Describe modular programming and its advantages. Write an ALP to count the positive and negative numbers stored in "Table 1" which contains 10 numbers starting from C050 H. 7

b) What are the directives in assembly language programming? Explain the role of Macros. 8

4. a) Differentiate maskable and non-maskable interrupt with examples. Describe the interrupts of 8086 microprocessor with IVT. 8

b) Draw the block diagram of 8254 PIT. Write instructions to generate 5 kHz square waveform. 7

5. a) Explain the USART? Write different modes of 8255 PPI. 7

b) Describe the execution of DMA in both slave mode and master mode with interfacing circuit of 8237 A DMA with 8085 microprocessor. 8

6. a) What is memory interfacing? Draw an address decoding circuit to interface input device with 8 input switches at 41 H and LED output at 42H. 8

b) Explain 8259A PIC with suitable block diagram.

7. Write short notes on: **(Any two)**

a) RAM vs. ROM

b) Software interrupts

c) Polled Interrupt.

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessors and Assembly Language Programming

Semester: Spring
Year : 2014
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a) Explain the evolution of Intel Series Microprocessors from 16-bit processors to 64-bit processors. 7
b) Draw block diagram 8086 Microprocessor and explain its Bus Interface. 8
a) Draw a timing diagram of ADI 45H. 8
b) Describe various addressing modes provided in 8085 microprocessor. 7
a) The following 8085 instruction has been written to transfer the content of memory location 2014H to 2015H. Find out error in the instructions, give reason for the error and correct it. What will be the content of memory location 2015 after correction? 7

```
MVI B, 23H
LXI H, 2014H
MOV M, B
LDA 20H
LXI D, 2015H
STAX D
HLT
```


b) Write a 8086 program in MASM to find the square of a given number. 8
a) Write an assembly language program to input a string from keyboard and print it in reverse order. 7
b) What do you mean by address decoding? Design an address decoding circuit to interface 4K×8 RAM, 8K×8 ROM and 16K×8 RAM with starting address 8000h. 8
a) Explain how 8086 handles interrupt. 8
b) What do you mean by Interrupt Vector Table (IVT)? Explain 7

predefined interrupts of 8086 microprocessor.

6. a) Write a control word format of 8255 PPI in I/O mode.
   b) What is Programmable Interval Timer? Illustrate with a diagram.

7. Write short notes on: **(Any two)**
   a) Synchronous and Asynchronous bus.
   b) Macro Assembler.
   c) DMA controller.

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Fall

Year : 2015
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a)	Explain the evolution of Intel Series Microprocessors from 16-bit processors to 64-bit processors.	7
b)	Draw block diagram 8086 Microprocessor and explain its Bus Interface Unit.	8
a)	What do you mean by addressing modes? Explain 80863 addressing modes in detail.	7
b)	Define flags and addressing modes. Explain the role of all the flag bits in 8085 microprocessor with essential examples.	8
a)	What do you mean by assembler directives? Explain various assembler directives.	7
b)	What do you mean by Instruction Cycle? Draw the timing diagram of Memory Read operation? Explain.	8
a)	Write a 8086 assembly language program to transfer 16 bytes of data starting from memory locations D000H to E000H.	5
b)	Write an assembly language program to input a string from keyboard and print it in uppercase.	5
c)	What are procedures and macros? Which is better for the development of assembly language programming?	5
a)	What do you mean by Interrupt Vector Table (IVT)? Explain the software interrupts of 8086 microprocessor.	8
b)	What do you mean by address decoding? Design an address decoding circuit to interface 8K×8 ROM and 16K×8 RAM with starting address 8000h.	7
a)	Draw the block diagram of 8255 PPI and explain it in brief.	8
b)	How can we accommodate 16 interrupt sources with 8259 PIC?	7

7. Write short notes on: **(Any two)**
   a) DMA controller
   b) Macro Assembler
   c) Vector and Polled Interrupts

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Semester: Spring
Year : 2015
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Course: Microprocessor and Assembly Language Programming

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Explain the evolution of Intel Series Microprocessors from 16-bit processors to 64-bit processors. 7

   b) Draw the functional block diagram of 8085 microprocessor. What are the purposes of ALU and flags? 8

2. a) Draw the timing diagram for the 8085 instruction OUT 34H. If the clock frequency of 2MHz is used, then how much time will it take to execute this instruction? 5

   b) The following 8085 instruction has been written to add the content of memory location 2014H with 2015H. Find out error in the instructions, give reason for the error and correct it. What will be the content of memory location 2015 after correction? 5

```
MVI A, 32H
STA 2014H
MVI A, 23H
STA 2015H
LXI H, 2014H
MOV B, M
LDA 20H
ADD B
LXI D, 2015H
STAX D
HLT
```

   c) What will be the value of accumulator A after the execution of following 8085 instructions? Justify your result. 5

```
MVI A, 0
MVI B, 4
```

```
        MVI C, 5
LOOP:   ADD B
        DCR C
        JNZ LOOP
        HLT
```

3. a) Draw an interfacing circuit to interface 4 KB ROM and 2 KB RAM for 8085 microprocessor.
   b) What are IVT and ISR? How is it used to handle software and hardware interrupts? Explain.
4. a) Describe the different modes of 8255 PPI with diagram.
   b) Write down the instructions to generate 3 KHz square waveform for 8254 PIT.
5. a) How can we accommodate 16 interrupt sources with 8259 PIC?
   b) Write a 8086 program to find the square of a given number.
6. a) Define interrupts. Explain vector chain and polled interrupt.
   b) Assuming: DS=2000H, BP=2030H and SI=2020H; State the addressing mode of the following 8086 instructions and find the physical address of the source location.
      i. MOV BX, [1234H]
      ii. MOV BX, [BP]
      iii. MOV BX, [BP+SI]
      iv. MOV BX, [BP+SI+5]
      v. MOV BX, [SI+4]
7. Write short notes on: (**Any two**)
   a) Synchronous and Asynchronous Data Transfer
   b) Maskable and Nonmaskable Interrupts
   c) Macro Assembler.

POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2016
Programme: BE | Full Marks: 100
Course: Microprocessor and Assembly Language Programming | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1. a) Differentiate between microprocessor, microcontroller and microcomputer. 7
   b) Describe the flags available in 8085 microprocessor. Write an ALP to find the smallest number in a data array. Data are stored in location C000H to C005 H. 8
2. a) Draw the timing diagram of MVIA, 32 H. Also calculate the total time for execution if frequency is 2.5MHz. 7
   b) Write a program in 8086 microprocessor in MASM to find the square root of a given number. Given that the number is a perfect square of two digits. 8
3. a) Differentiate macros and procedures. Write an assembly language program to copy the string from one location in memory to other location. 8
   b) Write a program to display string "POKHARA" into a standard output device using DOS/BIOS interrupt. 7
4. a) Define bus structure. Draw an address decoding circuit to interface 2 KB ROM and 4KB RAM for 8085 microprocessor. 8
   b) How are non vectored interrupts processed? Describe with the necessary hardware implementation. 7

OR

What are interrupts and interrupt vector? What could be the different sources of interrupts? Describe in brief.

5. a) Differentiate: 8
   i. Data, Control and Address Bus
   ii. Vectored and Non Vectored Interrupts

b) Describe the process to transmit and receive the serial data in 8251A USART. 7

6. a) Describe the Input-output control word and BSR control word in 8255 PPI. 7

b) What is DMA? Describe how it works with suitable illustration. 8

7. Write short notes on: **(Any two)** 2×5

a) Types of Directives

b) Application of PIT

c) Evolution of Microprocessor

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Semester: Spring
Year : 2016
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Course: Microprocessor and Assembly Language Programming

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Compare microprocessor, microcomputer and microcontroller. What are the applications of microprocessor? 4+3
   b) Draw and explain the internal architecture of microprocessor. 8
2. a) What do you mean by addressing mode? Explain different addressing modes of 8086 microprocessor with example. 2+5
   b) Draw and explain the timing diagram for STA 8050H instruction. 8
3. a) What do you mean by assembly language programming? Explain the assembling process. What are one pass and two pass assemblers? 2+4+2
   b) Write a program for 8085 to transfer numbers from a table of ten eight bit numbers to another table if bit D_5 is 1 and bit D_5 is 0 else store 0 in the destination table. 7
4. a) Write an assembly language program for 8086 microprocessor to read a number from the user, find the sum of squares of the numbers from 1 up to the entered number and display the result. 7
   b) What do you mean by address decoding? Design an address decoding circuit to interface one RAM chip of 8KB and one ROM chip of 8KB for 8085 microprocessor consecutively at the address C000H. 8
5. a) Why is interrupt required in microprocessor system? Explain how interrupt pins of 8085 microprocessors are used. 2+5
   b) What is interrupt vector table? Explain how hardware interrupts are handled in 8086 microprocessor. 3+5
6. a) What are the parallel and serial interfaces? Explain RS232 standard. 2+5
   b) What are the modes of parallel data transfer? Draw the diagram of 8255 PPI and explain its operation. 3+5

Write short notes on: **(Any two)** 2×5

a) Stack operation
b) PIC
c) DMA

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Fall

Year : 2017
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a) How was microprocessor evolved? State the difference between microprocessor and microcontroller and what are its uses in daily life. 7
b) What are the different addressing modes in 8085? Explain in detail with an example. 8

a) Write an assembly language program to find factorial of numbers from 1 to 20. 7
b) Write an assembly language program to print "Gandaki College of Engineering and Sciences" and display it into a standard output device. 8

a) What are the different modes of operation of an 8086 microprocessor? Draw its internal architecture and explain each block in brief. 8
b) Differentiate between procedure and macro. List different assembly language development tools. 7

a) Draw the timing diagram for moving an immediate data to 8086. (Eg: MVI A, 45H). 7
b) What is the importance of memory interfacing? Draw a circuit diagram of an interfacing circuit for RAM of size 2KB starting at 5300H and ROM of size 4KB starting at 5400H. 8

a) Draw the block diagram of USART and explain each of them. What are the different control words used in USART? 7
b) Draw an internal structure of 8255 PPI. Also explain its modes in brief. 8

a) What is an interrupt and what are its types? Describe an interrupt vector table in 8086. 8
b) What are different flags in 8086 and how to calculate its physical address? 7

Write short notes on: **(Any two)** 2×5

a) IVT and ISR
b) Programmable Interval Timer
c) Synchronous and Asynchronous Bus

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Semester: Spring
Year : 2017
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Course: Microprocessor and Assembly Language Programming

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) You are required to buy a brand new personal computer. What would you want the specifications and features of the microprocessor in the system and why? Explain with reference to the evolution of microprocessors. 7

   b) Draw block diagram 8086 Microprocessor and explain its Execution Unit. 8

2. a) Write the function, addressing modes, size and name of machine cycles for the following instructions: 6
   i. MOV A,B
   ii. MVI A, 32H
   iii. LXI H, 2030H

   b) Define Instruction cycle, Machine cycle and T-states. 3

   c) Draw the timing diagram for the 8085 instruction IN 34H. 6

3. a) Assuming: DS=1000H, BX=2030H and SI=2020H; State the addressing mode of the following 8086 instructions and find the physical address of the source location. 5
   i. MOV AX, [1234H]
   ii. MOV AX, [BX]
   iii. MOV AX, [BX+SI]
   iv. MOV AX, [BX+SI+5]
   v. MOV AX, [SI+4]

   b) Write an 8085 ALP to subtract two 16-bit numbers and store the result in memory locations starting from 2017H. 5

   c) Explain various assembler directives in brief. 5

4. a) Write an assembly language program to find the sum of two no. which 7

is input by the user through the key board and display the sum in screen.

b) You have given string data "Microprocessor and Assembly language Programming". Write an ALP to print "Microprocessor Programming" from the above given data. 8

5. a) How interrupt processing occurs in a microprocessor? Explain vector chain and polled interrupt. 8

b) What do you mean by address decoding? Design an address decoding circuit to interface 4K×8 RAM, 8K×8 ROM and 16K×8 RAM with starting address 4000h. 7

6. a) Draw block diagram of 8254 PIT and explain in brief. 5

b) How can we accommodate 20 interrupt sources with 8259 PIC? 5

c) Explain the different control words of 8255A PPI. 5

7. Write short notes on: (**Any two**) 2×5

a) DMA controller

b) Macro Assembler

c) 8085 flag register

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Fall

Year : 2018
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a)	Describe in brief the evolution of INTEL series.	8
b)	Draw the block diagram of 8085 Microprocessor. Explain about its register set.	7
a)	Draw the timing diagram of 8085 instruction LDA CBD2H.	8
b)	What is addressing modes? Describe about the different addressing modes in 8085 microprocessor.	7
a)	Describe about the format of an ALP, illustrating a simple program.	7
b)	Write an ALP for 8085 microprocessor to copy the largest value among ten values at starting address CB08H to CD00H.	8
a)	Write an ALP to find the difference between two 8-bit numbers using two's complement method and display the difference in the screen.	8
b)	What are the different components of ALP Development tool? Describe their functions.	7
a)	Differentiate between synchronous and asynchronous bus.	5
b)	List out the possible sources of interrupts. Also Describe the Polled Interrupt hardware with necessary diagram.	10
a)	Explain 8259A modes of operation. How can we accommodate 18 interrupt sources with 8259A PIC?	8
b)	Describe in detail the working mechanism of USART with necessary diagram.	7

Write short notes on: (**Any two**) 2×5

a) Addressing Decoding
b) Interrupt Vector Table
c) Application of 8254 PIT

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Spring

Year : 2018
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

a)	Explain the evolution of Intel Series Microprocessors starting from 16-bit architecture to 64-bit architectures.	7
b)	Draw block diagram of a Microprocessor and explain it in detail.	8
2. a)	Write the function, addressing modes, size and name of machine cycles for the following instructions: i) LDAX D ii) ADI 32H iii) LXI B, 2075H	6
b)	Define Instruction cycle, Machine cycle and T-states.	3
c)	Draw the timing diagram for the 8085 instruction MVI A, 32H.	6
3. a)	What do you mean by Segmentation Offset Scheme in 8086 Microprocessor. Explain with suitable example.	5
b)	Write an 8085 ALP to subtract two 16-bit numbers and store the result in memory locations starting from 2075H.	5
c)	Explain various assembler directives in brief.	5
4. a)	Write an assembly language program to find the sum of two number which is input by the user through the key board and display the result in screen.	7
b)	Write a procedure program for 8086 for newline and use it to display three different strings in different lines.	8
5. a)	What are various sources of interrupts? Explain interrupt vector table of 8086 microprocessor.	8
b)	What do you mean by address decoding? Design an address decoding circuit to interface 4K×8 RAM, 8K×8 ROM and 16K×8 RAM with starting address 0000h.	7
6. a)	You are given a microprocessor system with clock frequency 10MHz. Write a program for 8254 PIT to generate a square wave of frequency 2KHz.	5

b) How cascading is done to handle more than 8 interrupts using 8259 PICs? 5
Explain.

c) Write 8085 program for 8255 PPI to take input from input device 5
connected to Port B and display the value of input on the output device
connected to Port A of 8255 PPI.

2×5

7. Write short notes on: **(Any two)**
   a) Direct Memory Access Controller
   b) Different types of Assemblers
   c) 8085 flag register

POKHARA UNIVERSITY

Level: Bachelor
Programme: BE
Course: Microprocessor and Assembly Language Programming

Semester: Fall

Year : 2019
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1. a) Compare Microprocessor, Microcomputer and Microcontroller. Which is better for high speed operation? Give reason. 7
   b) Define Instruction cycle. Explain flags, registers and control signals available in 8085 microprocessors. 8
2. a) What is addressing mode? Explain the addressing modes of 8086 microprocessor giving appropriate examples. 7
   b) Draw the timing diagram for the 8085 instruction MVI M,14H. 8
3. a) Write an Assembly language program to multiply two 8 bit numbers stored in the memory address D050H and E050H and if the result is less than 80H, save it to F050H else store it in FFFFH. 7
   b) What is the role of assemblers in ALP? Explain one-pass and two-pass assemblers in brief. What is macro assembler? 8
4. a) Write an assembly language program for 8086 to compare two strings and display "Strings are same" for same strings value otherwise display "Strings are Different" in Dos Screen. 7
   b) What is memory interfacing? Interface 4K x 8 EPROM, 8K x 8 RAM with starting address of 1000H. 8
5. a) What is interrupt? What are the source of interrupts? Explain Maskable/Non-maskable, vectored and non-vectored interrupt. 8
   b) Describe the process to transmit and receive the serial data in 8251 USART. 7
6. a) Describe 8254 PIT with diagram. Write down the instructions to generate 4 KHz square waveform for 8254 PIT 8
   b) What is DMA? Describe how it works with suitable illustration and block diagram. 7

7. Write short notes on: **(Any two)**

a) Interrupt Vector Table

b) MACRO vs PROCEDURE

c) Memory Classification.

POKHARA UNIVERSITY

Level: Bachelor Semester: Spring Year : 2019
Programme: BE Full Marks: 100
Course: Microprocessor and Assembly Language Programming Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

2. a) Define Op-code and operand with Example. Differentiate between microprocessor and microcontroller. 7
   b) What do you mean by instruction cycle? Draw the timing diagram of instruction MVI M,20H. 2+6
3. a) Explain the instruction set of 8085 microprocessor on the basis of its operation. 7
   b) WAP to find the sum of given series $1+2^2+3^2+.....+10^2$. Store the results in memory address 2040H and 2041H. 8
4. a) Identify the size, addressing modes, T-state and function of following instructions. 7
      i. MVI A,20H
      ii. LDA 1234H
      iii. CMP M
      iv. RRC
      v. ANA B
      vi. ADI 0FH
      vii. LXI H,1234H
   b) What is a macro and how can it be implemented for assembly language programming? Explain a program using macros. 8
5. a) Write an assembly language program for 8086 to find the sum of two numbers which is input by the user through the key board and display the sum on the screen 7
   b) Design an address Decoding circuit to interface an input device with eight input switches and eight LEDs output device at address 50H and 51H respectively. 8
6. a) Explain the interrupt processing in detail. Describe the methods of handling multiple interrupts. 7
   b) What is IVT? Briefly describe the conditions which cause the 8086 to perform each of the following types of interrupts: Type 0, Type 1, 8

Type2, Type 3 and Type 4.

6. a) Describe about the pin configuration of 8237 controller and explain the types of modes available in it.

   b) Draw a labelled diagram of 8254 PIT controller and write down the instructions to generate 5KHz square wave for 2854 PIT.

7. Write short notes on: (**Any two**)

   a) Application of PIC.

   b) One pass and Two pass Assemblers

   c) ALP Development tools