

# University of Engineering and Technology Taxila

Sub Campus Chakwal

End Semester Examination (Spring 2013)  
2K11 Electronic Engineering (4<sup>th</sup> Semester)

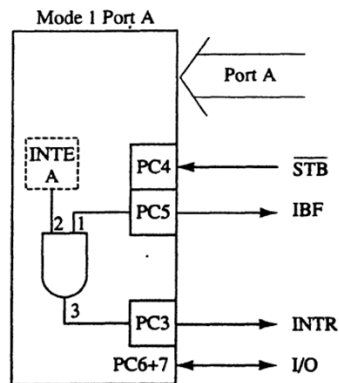
Course Title: **Microprocessors and Microcontrollers**

Total Marks: 40  
Time Allowed: 135 mins

NOTE Attempt all questions. Each Question as a whole carries 8 marks.

Q No.2. (2+4+1+1)

- What is priority rotation? what is its advantage ?
- Describe the mode 1 strobed input mode of 82C55 by explaining the functions of these pins. Also draw its timing diagram.



- Describe the purpose of **CA** (current address) and **CWC** (current word count) registers of DMA controller.
- Describe the purpose of **IMR** (interrupt mask register) of 8259A.

Q No.3. (2+3+3)

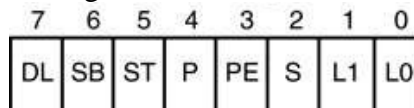
- Draw basic DMA operation timing diagram.
- Describe three types of DMA data transfer modes.
- When an interrupt is found, what are the 5 steps that microprocessor goes through to service that interrupt?

Q No.4. (5+2+1)

- (a) Draw a simplified Read Timing Diagram of microprocessor, also explain what happens during T1,T2,T3 and T4.
- (b) What is High bank and Low bank? What is 'Separate Bank Write Strobes' method of controlling 16-bit Memory?
- (c) Where have you heard the term 'R-2R' Ladder network. What does it do?

Q No.5. (4+4).

- (a) Use a 74LS138 decoder to map eight (8) 2732 EPROMs in the address range F8000-FFFFH. Just show the individual range of each memory chip at the output pin of decoder. No need to draw individual chips.
- (b) Describe the Line Control register of 16550 communications device.



Q No.6. (8)

- (a) Describe the functions of following pins.

Intel 8086/8088			
i) NMI	ii) HOLD	iii) IO/M	iv) DT/R
16550 Communications Device			
v) RI	vi) SIN,SOUT		
8259 Interrupt Controller			
vii) IR0-IR7		viii) SP/EN	

=====Best of Luck=====