

[68]

## SARDAR PATEL UNIVERSITY

INSTRUMENTATION - M.Sc. (SEM.-1) - NOV.-2012

8-BIT MICROPROCESSOR &amp; MICROCONTROLLER SYSTEMS

SUBJECT CODE: PS01CINS02

TIME: 10:30am to 1:30p.m

DATE: 03/12/2012

MARKS: 70

Q-1 Choose the correct answer from given.

[08]

- (1) \_\_\_\_\_ is 16-bit register in 8085up.  
 (A) Flag register (B) stack pointer  
 (C) instruction register (D) none of above
- (2) \_\_\_\_\_ Section of 8085 decode machine code of instruction.  
 (A) Instruction decoder (B) control  
 (C) ALU (D) none of above
- (3) In MODE-1 of 8255 PIO, port use to transact handshake signal is \_\_\_\_\_.  
 (A) PORT-A (B) PORT-C  
 (C) PORT-B (D) control register
- (4) MODE-2 of 8254 is described as \_\_\_\_\_.  
 (A) Programmable one-shot (B) rate generator  
 (C) software triggered strobe (D) none of above
- (5) In cascading-mode 8259 can handle \_\_\_\_\_ level of interrupt.  
 (A) 16 (B) 8  
 (C) 64 (D) 32
- (6) In single PIC mode of 8259 the ICWS required are \_\_\_\_\_.  
 (A) ICW 1&2 (B) ICW 1&3  
 (C) ICW 2&3 (D) none of above
- (7) 8051 is \_\_\_\_\_ pin chip.  
 (A) 24 (B) 40  
 (C) 20 (D) 64
- (8) Following is special function register in 8051.  
 (A) accumulator (B) control register  
 (C) TCON (D) none of above

Q-2 Short answer type questions.(attempt any seven)

[14]

- (1) State instructions of logical group of 8085.
- (2) Draw block diagram of 8255.
- (3) Differentiate BSR mode and I/O mode of 8255.
- (4) Draw pin configuration of 8259 PIC.
- (5) Draw functional block diagram of 8254-IC.
- (6) Briefly discuss rotating priority mode of DMA controller 8257.
- (7) Explain control word of 8255 PIO.
- (8) State different special function registers of 8051.
- (9) State meaning of ANL A,#n and MOV Rr,A instructions.

- Q-3 (A) Discuss technique of generating different control signals in 8085 system. [06]  
 (B) Draw functional block diagram of 8085 and briefly explain it. [06]
- OR
- (B) Discuss logical and arithmetic instructions of 8085. [06]
- Q-4 (A) With the help of necessary diagram discuss different operating mode of 8255. [06]  
 (B) Draw block diagram of 8259 PIC and explain ICW-1 & ICW-2 of it. [06]
- OR
- (B) With the help of necessary diagram explain MODE-0 & MODE-1 of 8254 interval timer. [06]
- Q-5 (A) Explain following architectural section of 8051 microcontroller. [06]  
 (1) internal memory (2) Special function register  
 (B) Draw architectural block diagram of 8051 micro controller and briefly discuss it [06]
- OR
- (B) Describe technique of serial port interfacing in 8051. [06]
- Q-6 (A) Discuss different data transfer and arithmetic group instructions of 8051. [06]  
 (B) (1) Write instructions to copy the byte in TCON to register R2 using at-least three different methods. [03]  
 (2) Write instructions to Double the number in register R2 and put the result in registers R3 and R4. [03]
- OR
- (B) (1) Write instructions to put the number 34h in register R5, R6 and R7. [03]  
 (2) Write note on Assembler Directives. [03]