

KADI SARVA VISHWAVIDHYALAYA

BE Semester IV Electronics & Communication Dept.

Examination – April/May 2015

Roll Code: EC 404

Date: 05/05/2015

Time: 10:30am to 01:30pm

Sub Name: Microprocessor

Architecture and Interfacing

Total Marks: 70

Instructions:

1. Answer Each Section in Separate Answer sheet.
 2. Use of Scientific Calculator is permitted.
 3. All questions are separate.
 4. Indicate clearly, the options you attempted along with its respective question number.
 5. Use the last page of supplementary for rough work.
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SECTION I

Q.1 (a) Draw functional block diagram of 8085. [05]

(b) Explain all the buses of 8085. [05]

(c) Draw and explain flag register of 8085. [05]

OR

(c) Compare memory mapped I/O and Peripheral I/O. [05]

Q.2 (a) What are the control signals? How do we generate them? Give their Importance. [05]

(b) How many machine cycles are required to execute STA 2010h instruction? Draw complete timing diagram and explain it. [05]

OR

Q.2 (a) Pins of 8085 are whether input line or an output line and mention its function. [05]
(1) ALE (2) SOD (3) INTR (4) READY (5) HOLD

(b) Distinguish between the following pairs of instructions. [05]
(1) STA 1234H and LDA 1234H (2) RAL and RAR

Q-3 (a) Write an 8085 Program to add three BCD numbers stored at starting add. 2000h and store BCD result at memory location 2050h. [05]

(b) Write an 8085 Program to find the largest number from given three data stored at starting add. 2000h. [05]

OR

Q-3 (a) Write an 8085 Program to convert the given hexadecimal number to ASCII. [05]

(b) Write an 8085 Program to find the smallest number from given three data stored at starting add. 2000h. [05]

SECTION II

Q.4 (a) Write status of Flag register for this program. [05]

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LXI H 2010H  
MVI A,01H  
MOV M,A  
ADD M  
HLT
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(b) Write Addressing mode of each instruction. [05]

(1) LXI H 2010H (2) MVI A,01H (3) MOV M,A (4) ADD M (5) HLT

(c) Draw control word of 8255 and explain any one mode. [05]

OR

(c) What is RIM and SIM? Explain in detail. [05]

Q.5 (a) What is stack? Explain subroutine with example. [05]

(b) Draw and explain block diagram of Programmable Peripheral Interface. [05]

OR

Q.5 (a) Define simplex, duplex and baud? [05]

(b) Draw and explain interrupt vector table. [05]

Q-6 (a) Draw and explain block diagram of Programmable interval timer. [05]

(b) Draw block diagram of 8259 and 8279. [05]

OR

Q-6(a) Write short note on DMA controller. [05]

(b) Draw and explain block diagram of Programmable communication Interface. [05]

KADI SARVA VISHWAVIDYALAYA

B.E SEMESTER IV EXAMINATION (MAY/2014)

SUBJECT CODE : EC- 404

SUBJECT NAME : Microprocessor Architecture and Interfacing

DATE: 14/05/2014

TIME: 10:30 TO 1:30

TOTAL MARKS: 70

Instructions:

1. Answer each section in separate Answer Sheet.
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate **clearly**, the options you attempted along with its respective question number
5. Use the last page of main supplementary for rough work.

Section - 1

Q:1 (All Compulsory)

- (A) Draw and Explain Architecture of 8085 microprocessor. 05
- (B) Explain bus organization of 8085 microprocessor. 05
- (C) What is multiplexing? How it is done in microprocessor 8085 for address and data bus? 05
Explain With neat diagram.

OR

- (C) Write short note on status flag register. Also write the condition under which the flag bits 05
Affected.

Q:2 Answer the following Question.

- (A) Compare memory mapped I/O and peripheral mapped I/O. 05
- (B) Explain the addressing mode of 8085 microprocessor with suitable example. 05

OR

- (A) What are interrupts? List and explain the interrupt available in microprocessor 8085? 05
- (B) Explain the following pin function of 8085. (i) Ready (ii) INTR (iii) ALE (iv) X1 and X2 (v) CLKOUT. 05

Q:3 Answer the following Question.

- (A) Explain the following instructions of microprocessor 8085. (i) DAD (ii) DAA. (iii) CMA (iv) RRC 05
(v) RET
- (B) Draw the diagram for interfacing 4KB of ROM and 4KB of RAM with microprocessor 8085 and 05
Also explain the number of pins used for such interfacing.

OR

- (A) Draw and explain the timing diagram of instruction MVI A, 45H Find execution time required 05
if clock frequency is 12 MHz
- (B) Explain (i) Machine cycle (ii) T-state (iii) conversion time (iv) instruction Cycle (v) OP CODE. 05

Section - 2

Q:4 (All Compulsory)

- (A) What is Stack and Stack pointer register? Explain the working and use of stack in Subroutine program. 05
- (B) Write a note on a general purpose & Special purpose registers of 8085. 05
- (C) Write an Assembly language program to copy block of ten numbers starting from location 1000h to locations starting from 2000h 05

OR

- (C) Write an 8085 program to count the number of odd numbers in a block of five numbers. Store your answer in ACC. 05

Q:5 Answer the following Question.

- (A) A data array of length 10(Decimal) has been stored in ascending order starting from memory Location 3000H to 3009H. Write an Assembly language program to store the data in Descending order from memory location 4000H to 4009H. 05
- (B) Write an Assembly Language Program to add two 16 bit numbers Assume that the answer Does not generate carry. 05

OR

- (A) Write an Assembly Language program to convert HEX to ASCII. 05
- (B) Draw the internal block diagram of 8255 and explain the functions of each block in details. 05

Q:6 Answer the following Question.

- (A) Write short note on 8237 DMA controller. 05
- (B) Write short note on 8279 Keyboard / Display interface. 05
- OR
- (A) Give the control word of 8255 and explain the mode 1 Input operation in detail 05
- (B) Draw and explain the logical block diagram of the 8251 with functions of each block. 05

ALL THE BEST