SEAT No._____ No. of Printed Pages : 2

[42]

SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar

B.Sc. (5th Sem) Examination - 2017

07th November, 2017 (Tuesday)

10:00 AM - 01:00 PM

US05CINS01 (Instrumentation)

8085 Microprocessor Architecture and Programming - 1

Maximum Marks: 70

Que 1 **Each question below gives a multiple choice of answers. Choose the most appropriate one.** **[10]**

1 _____: Group of Program.
a) Firmware **b)** Hardware
c) Software **d)** Machine

2 Each Manufacturer of a Microprocessor has devised (developed) a Symbolic Code for each Instruction. Known as _____.
a) Mnemonic **b)** Firmware
c) Machine Language **d)** Assembly Language

3 Assembly Language is in _____.
a) Binary **b)** Octal
c) Hexadecimal **d)** English-Like Languages

4 The Microprocessor (MPU) Uses _____ Bus to Identify a Peripheral or Memory Location.
a) Data **b)** Control
c) Address **d)** Address and Data

5 The Eight Data Lines Enable the MPU to Manipulate 8 - Bit Data Ranging From _____.
a) 00_H to FF_H **b)** 00000001_B to 11111111_B
c) 0000_H to $FFFF_H$ **d)** 0001_H to $FFFF_H$

6 _____: Comprised of Various Single Lines that Carry Synchronization Signals.
a) Data Bus **b)** Address Bus
c) Control Bus **d)** Data Bus and Control Bus

7 _____: Non - Maskable Interrupt.
a) INTR **b)** RST 5.5
c) RST 7.5 **d)** TRAP

8 _____: Associated With DMA.
a) INTR **b)** READY
c) HLDA **d)** RESET OUT

9 _____: Flag Not Affected By INR Instruction.
a) Parity **b)** Zero
c) Sign **d)** Carry

10 _____: No Flags Affected.
a) IN **b)** ADD
c) ANA **d)** XRI

(PTO)

Que 2 Short Questions (Attempt any TEN) **[20]**

1 Define: Program and Software.
2 What is the Use of Flag Register?
3 Explain Briefly Use of Accumulator.
4 Data Bus Is Bidirectional. Justify.
5 Give Relation Between Width of Address Bus and Memory Size. Calculated Memory Size of 8085 Microprocessor.
6 Explain: Encoder.
7 Explain: SID and SOD.
8 Explain: ALE and CLK (OUT).
9 Write on DMA.
10 Write Assembly Language Program to Load 37_H in Register B. Display the Number at Out Port 1.
11 Write Assembly Language Program to Add 93_H (in Register C) and $B7_H$ (in Register D).
12 Write Assembly Language Program to Subtract 40_H (in Register H) From $8C_H$ (in Register B).

Que 3 **[A]** Write a Note on 8085 Programming Model With Necessary Diagram. **[05]**
[B] Give Classification of 8085 Instructions on the Basis of Instruction Word Size. **[05]**

OR

[C] Write a Note on 8085 Hardware Model With Necessary Diagram. **[05]**
[D] Discuss 8085 Instruction Classification on the Basis of Various 8085 Operations. **[05]**

Que 4 **[A]** Write a Brief Note on Tri - State Devices and Buffer. **[05]**
[B] Explain Peripheral - Mapped and Memory - Mapped I/O. **[05]**

OR

[C] Discuss Bidirectional Buffer and Decoder. **[05]**
[D] Give an Account of Microprocessor - Initiated Operations and 8085 Bus Organization. **[05]**

Que 5 **[A]** Write a Note on 8085 Microprocessor. **[10]**

OR

[B] Draw Schematic of Latching Low - Order Address Bus. Explain it. **[05]**
[C] Draw Schematic to Generate Read/Write Control Signals for Memory and I/Os. Explain it. **[05]**

Que 6 **[A]** Write Assembly Language Program to Mask Higher Nibble from BC_H (in Register L) and CD_H (in Register C). AND Lower Nibbles. Store Result at $C500_H$. **[05]**
[B] Write Assembly Language Program to Add DF_H (in Register B) and $E5_H$ (in Register H). If Sum is Greater Than FF_H, Store CC_H at $D500_H$ Otherwise Store Sum at $D500_H$ **[05]**

OR

[C] Write Assembly Language Program to Mask Lower Nibble from AB_H (in Register D) and EF_H (in Register H). XOR Lower Nibbles. Store Result at $D000_H$. **[05]**
[D] Explain: ANI and ADD With Suitable Examples. **[05]**