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**SARDAR PATEL UNIVERSITY**

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**B.Sc. (5<sup>th</sup> Sem) Examination - 2017**07<sup>th</sup> November, 2017 (Tuesday)

10:00 AM - 01:00 PM

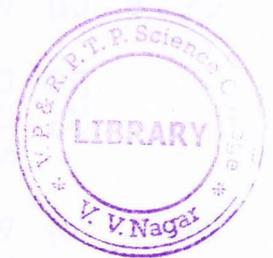
**US05CINS01 (Instrumentation)**

8085 Microprocessor Architecture and Programming - 1

**Maximum Marks: 70**

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

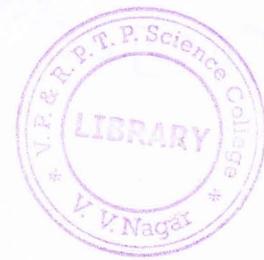
- 1 \_\_\_\_: Group of Program.
  - a) Firmware
  - b) Hardware
  - c) Software
  - d) Machine
- 2 Each Manufacturer of a Microprocessor has devised (developed) a Symbolic Code for each Instruction. Known as \_\_\_\_\_.
  - a) Mnemonic
  - b) Firmware
  - c) Machine Language
  - d) Assembly Language
- 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<sub>H</sub> to FF<sub>H</sub>
  - b) 00000001<sub>B</sub> to 11111111<sub>B</sub>
  - c) 0000<sub>H</sub> to FFFF<sub>H</sub>
  - d) 0001<sub>H</sub> to FFFF<sub>H</sub>
- 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



①

(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<sub>H</sub> in Register B. Display the Number at Out Port 1.
- 11 Write Assembly Language Program to Add 93<sub>H</sub> (in Register C) and B7<sub>H</sub> (in Register D).
- 12 Write Assembly Language Program to Subtract 40<sub>H</sub> (in Register H) From 8C<sub>H</sub> (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<sub>H</sub> (in Register L) and CD<sub>H</sub> (in Register C). AND Lower Nibbles. Store Result at C500<sub>H</sub>. [05]

- [B] Write Assembly Language Program to Add DF<sub>H</sub> (in Register B) and E5<sub>H</sub> (in Register H). If Sum is Greater Than FF<sub>H</sub>, Store CC<sub>H</sub> at D500<sub>H</sub> Otherwise Store Sum at D500<sub>H</sub> [05]

**OR**

- [C] Write Assembly Language Program to Mask Lower Nibble from AB<sub>H</sub> (in Register D) and EF<sub>H</sub> (in Register H). XOR Lower Nibbles. Store Result at D000<sub>H</sub>. [05]

- [D] Explain: ANI and ADD With Suitable Examples. [05]