

**B.Tech. V-Sem. (Main & Back) Examination, January/February - 2024**  
**Information Technology**  
**5IT3-01 Microprocessor and Interfaces**

**Time : 3 Hours**

**Maximum Marks : 70**

**Instructions to Candidates:**

*Attempt all Ten questions from Part A, Five questions out of Seven questions from Part B and Three questions out of Five questions from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No.205)*

**PART - A**

**(Answer should be given up to 25 words only).**

**ALL questions are Compulsory.**

**(10×2=20)**

1. Differentiate Microprocessor and Microcontroller.
2. Explain priority interrupts? Explain non maskable interrupts.
3. Define instruction cycle, machine cycle and T-State.
4. List out the five categories of 8085 instructions. Give examples of the instructions for each group.
5. Write a program to obtain 2's complement of the number.
6. What is a flag? State the various flags used in 8085.
7. What is Program Counter and Stack Pointer.
8. What are the various registers in 8085?

9. Differentiate between memory mapped I/O and peripheral mapped I/O.
10. How many machine cycles does 8085 have, mention them all.

### **PART - B**

**(Analytical/Problem solving questions)**

**Attempt any FIVE questions.**

**(5×4=20)**

1. Write an assembly language program to transfer a block of ten data elements from memory location 5000H to 6000H.
2. What is the importance and use of Stack? Illustrate about PUSH and POP instructions.
3. Explain the control word format of 8255 in IO mode and BSR mode.
4. Write notes on status flag register. Also write down condition under which the flag bits affected.
5. Sketch and explain the timing waveform for fetch operation.
6. Draw the Pin Diagram of 8085 microprocessor. Explain important pins used for interfacing with the memory and peripherals.
7. State any three features of 8259 programmable interrupt controller in detail.

### **PART - C**

**(Descriptive/Analytical/Problem Solving/Design questions)**

**Attempt any THREE questions.**

**(3×10=30)**

1. Draw and explain interrupt structure of 8085.
  2. Write the use of Stack and illustrate PUSH and Pop operations in detail with suitable examples. Also list stack related instructions.
  3. Why are  $AD_7$ - $AD_0$  lines multiplexed with help of latching circuit? Explain how these lines are de-multiplexed.
  4. Explain the term addressing modes and with suitable examples illustrate the addressing modes of 8085 microprocessor.
  5. Write an assembly language program in 8085 microprocessor to generate Fibonacci series.
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