**Seat No.: _____** **Enrolment No._____**

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code:2150707 Date:30/04/2018**

**Subject Name:Microprocessor and Interfacing**

**Time:02:30 PM to 05:00 PM Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

| | | | MARKS |
|---|---|---|---|
| **Q.1** | **(a)** | Answer the following questions:<br>(1) How many machine cycles are executed by 8085 microprocessor? List down it.<br>(2) How many flags are available in 8085 microprocessor? List down each.<br>(3) List down various segment registers of 8086 microprocessor. | **03** |
| | **(b)** | Differentiate: (1) higher level language and low level language<br>(2) hardware and software interrupt | **04** |
| | **(c)** | Draw and explain the internal block diagram of 8085 microprocessor. | **07** |
| **Q.2** | **(a)** | What are the addressing capacity of 8085 microprocessor and 8086 microprocessor? | **03** |
| | **(b)** | Write an 8085 program to add two 16-bit nos stored in memory locations 2100H and 2200H respectively. | **04** |
| | **(c)** | Explain 8085 data transfer instructions with suitable examples. | **07** |
| | | **OR** | |
| | **(c)** | Explain 8085 branch instructions with suitable examples. | **07** |
| **Q.3** | **(a)** | How many flags are available in an 8086 microprocessor? How the parity flag (PF) is used by 8086 microprocessor? | **03** |
| | **(b)** | Explain stack and subroutine with suitable example. | **04** |
| | **(c)** | Explain various addressing modes of 8085 microprocessor. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | How many I/O modes are available in 8255A programmable peripheral interface? List and explain them in short. | **03** |
| | **(b)** | Differentiate 8085 microprocessor with 8086 microprocessor. | **04** |
| | **(c)** | Explain programmable interrupt controller 8259A in detail. | **07** |
| **Q.4** | **(a)** | Draw timing diagram for an arithmetic instruction: MOVE A, B. | **03** |
| | **(b)** | Write an assembly language program to find the factorial of a number from 0 to 10. | **04** |
| | **(c)** | Draw and explain the architecture of Pentium processor. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | What are the main features of ARM processor? List down each. | **03** |
| | **(b)** | How the physical addresses are calculated from segment register in 8086 microprocessor? | **04** |
| | **(c)** | Draw and explain internal architecture diagram of 8086 microprocessor. | **07** |
| **Q.5** | **(a)** | What is page table? How it works? | **03** |
| | **(b)** | Explain arithmetic instruction of SUN SPARC with example. | **04** |
| | **(c)** | Differentiate 80286 with 80386 microprocessor. | **07** |

**OR**

| | | | |
|---|---|---|---|
| **Q.5** | **(a)** | What is a descriptor table? What is it's main usage? | **03** |
| | **(b)** | Explain branch instruction of SUN SPARC with example. | **04** |
| | **(c)** | Draw and explain SUN SPARC microprocessor architecture in detail. | **07** |

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