

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026

Subject Code: 3160712

Date: 22/05/2026

Subject Name: Microprocessor and Interfacing

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1**
- (a) Define (1) Microprocessor (2) Program Counter (3) Accumulator **03**
 - (b) Explain general purpose registers in 8085 Microprocessor **04**
 - (c) Draw and explain Pin diagram of 8085 Microprocessor **07**
- Q.2**
- (a) Explain functions of following pins in 8085 (1) TRAP (2) SID (3) HLDA **03**
 - (b) Explain Memory Write Machine Cycle of 8085 with suitable diagram **04**
 - (c) Elaborate different addressing modes in 8085 with suitable examples **07**
- OR
- Q.2**
- (c) Draw the memory interface 4kB of EPROM with starting address from 0000H and 2kB of RAM with starting address followed by EPROM with 8085 Microprocessor **07**
- Q.3**
- (a) Define (1) Assembler (2) Linker (3) Debugger **03**
 - (b) Describe any four data transfer instructions in 8085 with examples **04**
 - (c) Write an assembly language program to add two 16-bit numbers stored in memory with carry in 8085 simulator. Store result in the memory **07**
- OR
- Q.3**
- (a) Specify byte size of each instruction (1) ADD B (2) MVI A,32H (3) CMA **03**
 - (b) Describe any four arithmetic instructions in 8085 with examples **04**
 - (c) Write an assembly language program in 8085 to arrange five 8-bit numbers in ascending order stored at memory location starting from 1000H **07**
- Q.4**
- (a) Define Stack. Explain importance of Stack in 8085 Microprocessor **03**
 - (b) Differentiate the memory-mapped IO with the IO-mapped IO **04**
 - (c) Explain various operating modes of 8255A **07**
- OR
- Q.4**
- (a) Explain following instructions: (1) RIM (2) SHLD (3) RRC **03**
 - (b) Explain working of CALL and RET instructions in 8085 microprocessor with example **04**
 - (c) Draw and explain architecture of 8259A **07**
- Q.5**
- (a) Describe different types of segment registers in 8086 Microprocessor **03**
 - (b) Explain flag register in 80286 Microprocessor **04**

(c) Draw and explain BIU and EU in 8086 Microprocessor 07

OR

Q.5 (a) Differentiate 8086, 80286 and 80386 03

(b) Explain operating modes of 8086 Microprocessor in detail 04

(c) Draw and explain architecture of 80286 Microprocessor 07
