Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

V SEMESTER B. Tech. (BME) DEGREE MAKE UP EXAMINATIONS DEC/JAN 2016-17

SUBJECT: MICROPROCESSORS (BME 307)

(REVISED CREDIT SYSTEM)

Saturday, 7th January, 2017, 2 to 5 PM

TIME: 3 HOURS **MAX. MARKS: 100**

Instructions to Candidates:

1. **Answer any FIVE full questions.**
2. **Draw labeled diagram wherever necessary.**

1. **(a)** With illustrations explain different types of memory access carried out by the 8086 microprocessor. **8**

(b) Draw the Programmer's model of the Motorola 68000 microprocessors and write significance of resources. **6**

(c) Make a list and write significance of minimum mode signals of the 8086 microprocessor. **6**

2. **(a)** Write the operations carried out and identify the addressing modes of the following instructions: **12**

(i) XLATB

(ii) PUSHF

(iii) LAHF

(iv) CBW

(b) What are effective and physical addresses? Illustrate. **4**

(c) Make a list of memory and I/O port addressing modes of the 8086 microprocessor. **4**

3.	**(a)**	Make a list of and explain dedicated interrupt vectors of the 8086 microprocessor.	**8**
	(b)	Write an assembly language program to convert ten single digit hexadecimal numbers available in a memory array starting at DS:1000H in to corresponding ASCII codes.	**6**
	(c)	How do you implement decimal addition and subtraction in the 8086 microprocessor? Illustrate.	**6**
4.	**(a)**	How do you make use of function codes to expand the memory space in the Motorola 68000 microprocessor system?	**6**
	(b)	What is auto-vectoring? How is it implemented in the Motorola 68000 microprocessor?	**6**
	(c)	How do you set and reset the flag '**TF**' of the 8086 microprocessor? Illustrate.	**8**
5.	**(a)**	How do you make use of the 8284 clock generator chip to provide "CLOCK", "RESET", and "READY" signals to the 8086 microprocessor?	**10**
	(b)	Draw the 8086 microprocessor's minimum mode memory-read bus cycle timing diagram.	**6**
	(c)	What is the response of the 8086 microprocessor to INTR input?	**4**
6	**(a)**	Design an 8086 microprocessor system to generate a periodic saw-tooth waveform of frequency 1 KHz.	**8**
	(b)	Write a memory efficient 8086 assembly language program to transfer 100 bytes from the location DS:1000 H to location DS:2000H.	**8**
	(c)	Explain the DOS interrupt function "08H" and the BIOS interrupt function "02H".	**2+2**