Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Microprocessors and Microcontrollers

Subject Code: 5SC02MPM1 **Branch: M.Sc. (Physics)**

Semester: 2 **Date: 27/04/2018** **Time: 10:30 To 01:30** **Marks: 70**

Instructions:

(1) Use of Programmable calculator and any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

SECTION – I

Q-1		**Attempt the Following questions.**	**(07)**
	a.	What is MPU?	(02)
	b.	Which signal lines are used as an address bus or a data bus in 8085 MPU?	(01)
	c.	Give the classification of Branch operations.	(01)
	d.	Write basic concept of memory interfacing.	(01)
	e.	Define INTR(I/P).	(01)
	f.	State the names of flags of ALU.	(01)
Q-2		**Attempt all questions**	**(14)**
	A	Explain the 8085 microprocessor and its architecture with its functional block diagram in details.	(07)
	B	Describe briefly 8085 machine cycles and bus timing with the help of a diagram.	(07)
		OR	
Q-2		**Attempt all questions**	**(14)**
	A	Illustrate the program: data transfer from register to output port. Problem statement: load the hexadecimal number 37H in register B, and display the number at the output port labeled PORT1.	(07)
	B	Explain in details different types of data transfer instruction.	(05)
	C	Give only different types of logical instructions.	(02)
Q-3		**Attempt all questions**	**(14)**
	A	Describe pin outs and signals of 8085 MPU with its diagram in details.	(07)
	B	Explain in detail memory mapped I/O of 8085 microprocessor.	(07)
		OR	
Q-3		**Attempt all questions**	**(14)**
	A	State different types of arithmetic instruction and explain addition in details.	(05)
	B	Explain in detail arithmetic logic unit with its all flags.	(05)
	C	Draw block diagram of the microprocessor communication and its bus timings.	(04)

SECTION – II

Q-4		**Attempt the Following questions.**	**(07)**
	a.	What is Microcontroller?	(01)
	b.	Which special function resisters are used for interrupt?	(01)
	c.	Define PSW.	(02)
	d.	What do you mean by DPTR register? For which purpose it is used?	(02)
	e.	Express Stack pointer (SP).	(01)
Q-5		**Attempt all questions**	**(14)**
	A	Draw the block diagram of 8051 microcontroller and explain each block of it briefly.	(07)
	B	Explain in details oscillator and clock in 8051 microcontrollers.	(04)
	C	Write a short note on A and B CPU resisters.	(03)

OR

Q-5		**Attempt all questions**	**(14)**
	A	Explain in detail counters and timers with its special function resisters.	(07)
	B	Describe briefly stack and the stack pointer.	(05)
	C	Write a program to exchange the internal RAM location 20H and resister B.	(02)
Q-6		**Attempt all questions**	**(14)**
	A	Draw the pin diagram of 8051 microcontroller.	(05)
	B	Explain the internal RAM (organization) with figure.	(05)
	C	Give a comparison between microprocessors and microcontrollers.	(04)

OR

Q-6		**Attempt all Questions**	**(14)**
	A	State different types of data transfer instruction and explain any four in details.	(05)
	B	Explain in details special function registers.	(05)
	C	Discuss arithmetic operation and state its instructions.	(04)