

B.E. ELECTRICAL ENGINEERING (PART TIME) SECOND YEAR SECOND SEMESTER 2019(1st/ 2nd Semester/Repeat/Supplementary/Annual/Bi-Annual)**SUBJECT: - SEQUENTIAL SYSTEMS AND MICROPROCESSOR**

Full Marks 100

(50 marks for each part)

Time: Three hours

Use a separate Answer-Script for each part

No. of Questions	PART I	Marks
	Answer any three Questions Two marks are for neat and systematic answers	
Q1.	a) Describe the terms NO, NC and Rung in the context of ladder diagram. b) A system is described by, $Y=A(B+AB)+B.(A+AB)$ i) Simplify the system using Boolean Algebra ii) Implement the simplified expression through ladder diagram. iii) Implement the original expression through ladder diagram.	6 10
Q2.	a) Explain the advantages of programmable logic over a relay logic based system. With the help of neat sketch show the essential parts of a relay. b) Draw and explain the block diagram of a 4-bit shift left register using D-FF.	8 8
Q3.	a) Enumerate the difference between the excitation table and truth table. With help of truth tables develop the excitation table of J-K and T FF. b) What is state diagram? Explain different symbols that are used to draw state diagram of a sequential system.	4+6 6
Q4.	a) Define Propagation delay time, Set-up time time and Hold time in the context of flipflop operation. b) What is tri-stating logic? Define Read Cycle time, Write Cycle time and Access time with respect to the specification of a memory chip.	8 8

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PART - II

Answer any *three* questions.

Two marks are for neatness and well organised answer.

6.	a) Draw the block diagram of Intel 8085 Microprocessor.	8
	b) Explain the requirement of Accumulator, Program Counter, Flags in Intel 8085 Microprocessor.	8
7.	a) Discuss the function of ALE, IO/ \overline{M} , READY, HOLD signals in Intel 8085 microprocessor.	8
	b) Draw and explain the timing diagram for memory read operation.	8
8.	a) Classify 8085 instructions in various groups. Give instructions for each group.	8
	b) Explain the operation is performed when the following instructions are executed: DAD rp, DAA, CMP r, CMP M, CMA, RAL, RAR, and SHLD addr	8
9.	a) Discuss different types of Addressing Modes of Intel 8085 with suitable example.	8
	b) What is Stack? What is the function of Stack Pointer? Discuss PUSH and POP operation.	8
10.	a) Write an assembly language program to add two 8-bit numbers, the sum may be 16-bits.	6
	b) Write an assembly language program to find the largest number in a data array.	10