

S.B. Roll No.....

**PROGRAMMABLE LOGIC CONTROLLERS AND MICROCONTROLLERS**

**6<sup>th</sup> Exam/Elect/EEE/5228/4452/Nov'17**

**Duration: 3Hrs.**

**M.Marks:75**

**SECTION-A**

**Q1. Fill in the blanks.**

**15x1=15**

- a. A very commonly used method of programming PLCs is based on the use of .....
- b. PLCs have limited ..... as compared to computers and have fixed ..... For a particular PLC.
- c. .... is a technique often used when planning a program after a written description has been developed.
- d. .... instructions are used to copy a data from one location to another.
- e. In register addressing mode ..... Lies in a register and is specified by name of register.
- f. The data transmission can be ....., ..... or .....
- g. The ..... Method transfers a block of data at a time while the ..... method transfers a single byte at a time.
- h. UART stands for .....
- i. Traffic light control system can be easily designed using ..... With its various features.
- j. The ..... operation starts with input scan.
- k. The CPU also called ..... is the brain of PLC.
- l. .... Instruction is used to determine if a Bit is off.
- m. The process control application requires a particular ..... sequence between two operations.
- n. The ..... Input instruction compares two words with each other.
- o. The 8051 microcontroller has ..... of RAM and ..... of ROM.

**SECTION-B**

**Q2. Attempt any six questions.**

**5x6=30**

- i. What is an assembly language programming?
- ii. How PLC differs from a computer?
- iii. What is Harvard architecture? Explain.
- iv. What are different types of PLC registers?
- v. Why 8051 is called 8-bit microcontroller?
- vi. How a microcontroller differs from a microprocessor?
- vii. What do you understand by BALANCED SLOPE detector?

**SECTION-C**

**Attempt any three questions.**

**3x10=30**

**Q3.** With the help of block diagram, explain the working of different blocks of 8051.

**Q4.** With the help of block diagram, explain the function of different blocks of PLC.

**Q5.** What are different addressing modes available in 8051? Explain them with examples.

**OR**

Explain the memory organization of 8051.

**Q6.** Draw and explain the functional block diagram of PIC microcontroller.