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S.E. (Electrical) (Second Semester) EXAMINATION, 2019

**FUNDAMENTALS OF MICROCONTROLLER AND ITS
APPLICATIONS**

(2015 PATTERN)

Time : 2 Hours

Maximum Marks : 50

1. Attempt Q no1 or 2, Q no 3 or 4, Q no 5 or 6, Q no 7 or 8
2. Figures to the right indicate full marks
3. Neat diagram must be drawn wherever necessary.
4. Use suitable data

- Q1 A) Explain the various addressing modes of 8051 and give one example of each 6
addressing mode.
- B) Explain the Function of following 8051 pins 6
1. ALE
 2. \overline{PSEN}
 3. \overline{EA}

OR

- Q2 A) Write short note on comparison of Microprocessor & Microcontroller. 6
- B) Draw & Explain the Program Status Word of 8051 Microcontroller. 6

- Q3 A) Draw & Explain TMOD register. 6
- B) Write a program to clear External data memory location From E800H to E8FFH 7

OR

- Q4 A) Draw & Explain SCON register. 6
- B) Write a program to generate square waveform of frequency 2KHz on pin2.0 7
Assume XTAL=11.0592MHz

- Q5 A) Draw & Explain interfacing diagram ADC 0809 with 8051. 6
- B) Explain following microcontroller development tools: 6
1. Assembler
 2. Simulator
 3. Compiler

P.T.O.

OR

- Q6 A) Draw and Explain Block Diagram of 8255 PPI. 6
B) Explain the function of following pin of ADC 0809 6
1. SOC 2. EOC 3. ALE 4. Output Enable

- Q7 A) Draw & explain power factor measurement using 8051. 6
B) Draw interfacing diagram of a stepper motor with 8051 and write assembly language 7
program to rotate stepper motor in clockwise direction.

OR

- Q8 A) With the help of block diagram explain Flow measurement using 8051. 6
B) Write a program to monitor a status of SW, if SW is connected to Pin P2.1 and 7
do following:
1. If SW= 0 DC motor rotate in Clockwise direction
2. If SW= 1 DC motor rotate in anticlockwise direction