

**B.Tech. SEM -V Electrical 2014 Course (CBCS) : WINTER - 2018**

**SUBJECT: MICROCONTROLLER**

Day: Saturday  
Date: 24/11/2018

**W-2018-2398**

Time: 02.30 PM TO 05.30 PM  
Max. Marks: 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Use of non-programmable calculator is **ALLOWED**.
- 3) Figures to the right indicate **FULL** marks.
- 4) Draw a neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data, if necessary.

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- Q1.** Draw and explain the architecture of 8051 Microcontroller. (10)  
**OR**
- Q1. a)** How many ports are supported by 8051 Microcontroller? Discuss Port 1 in detail. (05)  
**b)** Which are the pins involved in clock operation? Draw the oscillator circuit. (05)
- Q2. a)** Which are the addressing modes supported by 8051 explain in detail with example. (05)  
**b)** What is the difference between LJMP, AJMP and SJMP (05)  
**OR**
- Q2. a)** How do RETI and RET instruction differ? Explain in detail. (05)  
**b)** Explain bit and byte level logical operation (05)
- Q3.** How many interrupts are supported by 8051? Discuss their priorities, vector address and flags affected by each. (10)  
**OR**
- Q3. a)** Discuss mode 1 of serial communication in detail. (05)  
**b)** Discuss 8 bit format of SFRs related to serial communication. (05)
- Q4.** Write a short note on interfacing of 8051 with ADC with a neat diagram. (10)  
**OR**
- Q4.** Write a short note on interfacing of Stepper motor with 8051 with a suitable diagram. (10)
- Q5. a)** Explain the architecture of PIC microcontroller in detail. (05)  
**b)** Explain the interrupt structure of PIC Microcontroller. (05)  
**OR**
- Q5. a)** Write a short note on instruction pipelining. (05)  
**b)** Which are the addressing modes supported by PIC Microcontroller. (05)
- Q6.** Explain in detail: a) Editor b) Assembler c) Compiler d) Debugger (10)  
**OR**
- Q6. a)** Write a short note on SPI protocol. (05)  
**b)** Explain Timer operation in PIC microcontroller. (05)

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