

**B.TECH. SEM -V ELECTRICAL 2014 COURSE (CBCS) :**  
**SUMMER - 2018**  
**SUBJECT: MICROCONTROLLER**

Day: **Tuesday**  
Date: **22/05/2018**

**S-2018-2343**

Time: **10.00 AM TO 01.00 PM**  
Max Marks: 60

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**N.B:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Assume suitable data if necessary.
  - 4) Use of non-programmable **CALCULATOR** is allowed.
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- Q.1 a)** What is the difference between Timer and counter? (05)  
**b)** What are the different flags stored in the PSW. Discuss each bit. (05)
- OR**
- Q.1 a)** Which port in microcontroller 8051 has no alternate function? Explain in brief. (05)  
**b)** Draw a neat block diagram showing internal RAM organization. (05)
- Q.2 a)** Discuss JUMP and CALL instructions. (05)  
**b)** Explain any two logical instructions in detail. (05)
- OR**
- Q2 a)** Discuss the opcodes that access external memory. (05)  
**b)** Write a code to put the number 43 h in registers R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> (05)
- Q.3 a)** Discuss each bit of of SFR SCON and PCON. (05)  
**b)** What are the different modes of serial communication? Explain anyone in detail. (05)
- OR**
- Q.3 a)** Discuss any two logical instructions in brief. (05)  
**b)** Discuss 8 bit format of IE and IP. (05)
- Q.4 a)** Explain the interfacing of an 8 bit DAC to the 8051. (05)  
**b)** Write note on ADC interfacing with 8051 microcontroller. (05)
- OR**
- Q.4 a)** With detailed schematic design a traffic light control system using 8051. (05)  
**b)** Explain speed control of DC motor using 8051 with suitable diagram. (05)
- Q.5 a)** Mention features of Harvard architecture. Also explain pipelining. (05)  
**b)** Explain addressing modes of PIC microcontrollers with example. (05)
- OR**
- Q.5 a)** Compare different addressing modes of PIC microcontrollers. (05)  
**b)** Explain any five instructions of PIC with example. (05)
- Q.6 a)** How do you make port as input and output port in PIC? (05)  
**b)** What are modes of operation of timers in PIC microcontroller (05)
- OR**
- Q.6 a)** Explain the role and functions of IO port in addressing modes of PIC microcontroller. (05)  
**b)** Write note on I<sup>2</sup>C bus. (05)

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