AB-3186
Third Year B. Sc. (Sem. V) Examination
March/April – 2015
Electronics : Paper - VIII
(\textit{Introduction to Microcontrollers})

Time : 2 Hours] [Total Marks : 50

\textbf{Instruction} :

\begin{itemize}
  \item Figures on the right indicate full marks.
  \item All symbols and abbreviations have their usual meaning.
  \item Non-programmable calculators are allowed.
  \item Q.1 is compulsory.
  \item Assume data if necessary.
\end{itemize}

1 Write Very Short Answers: 8

\begin{enumerate}
  \item What is a microcontroller.
  \item Draw the pin diagram of microcontroller 8051.
  \item Explain the instruction DJNZ.
  \item What is the use of TRO and TRL bits in timer counter module.
\end{enumerate}

2 (a) What is the difference between a microprocessor and a microcontroller? Draw the architecture of 8051 and explain each block. 10

(b) Write a program to AND the values of P1 and P2 and place the result on P3. 4

\textbf{OR}

AB-3186] 1 [Contd...
2 (a) Discuss the indirect addressing mode of 8051. Explain the indirect addressing mode using at least two different instructions.

(b) Write a delay program of 1 mSec and explain it.

3 (a) Discuss the register structure of 8051. Discuss how the registers are organised in register banks and hence enumerate the importance of RS0 and RS1.

(b) Write a program to copy the content of register bank 1 to the register bank 3 of 8051.

OR

3 (a) Explain the Timer/Counter module of 8051. Explain the SFRs' related to the timer counter module.

(b) Discuss the various modes of operations of timer/counter module.

4 Write Short Notes (Any Two)

(1) Bit Addressed RAM.

(2) Ports of 8051.

(3) Timer counter module of 8051.

(4) Special function Register TMOD and TCON.