Code No: RT32021          **R13**          SET - 1

**III B. Tech II Semester Supplementary Examinations, November - 2017**
## MICROPROCESSORS AND MICROCONTROLLERS
(Electrical and Electronics Engineering)

Time: 3 hours                                                      Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**
\*\*\*\*\*

### PART –A

| | | | |
|---|---|---|---|
| 1 | a) | Explain how segmentation provides effective task switching mechanism. | [3M] |
| | b) | Write a note on Branch Instruction and Loop Instruction of 8086. | [4M] |
| | c) | What is MACRO? Give an example. | [4M] |
| | d) | Write a note on BSR (Bit set/Reset mode) mode of operation. | [4M] |
| | e) | What is the memory organization of 8051 Micro Controller? | [3M] |
| | f) | Write the applications of Micro Controllers. | [4M] |

### PART -B

| | | | |
|---|---|---|---|
| 2 | a) | Explain the functioning of an 8086 microprocessor. | [4M] |
| | b) | Give the 16-bit flag register format of 8086 and explain Control Flag in detail. | [8M] |
| | c) | Explain i)AND  ii)OR  iii)XOR  iv)NOT logical instructions of 8086 microprocessor. | [4M] |
| | | | |
| 3 | a) | Describe how the control bus signals are produced for an 8086 system operating in maximum mode. | [3M] |
| | b) | What is assembly language program? Discuss the assembler directives in details. | [8M] |
| | c) | Write an ALP in 8086 to find average of two numbers. | [5M] |
| | | | |
| 4 | a) | Draw the block diagram of 8255 and explain each block. | [8M] |
| | b) | Describe the operation of 8279 with a neat block diagram. | [8M] |
| | | | |
| 5 | a) | Draw the block diagram of microcontroller and explain each block in detail. | [8M] |
| | b) | Differentiate between the external and internal program memory of 8051. | [8M] |
| | | | |
| 6 | a) | Interface an 8-bit,7-segment LED display to 8051 through port1 and port3 and write an 8051 assembly language program to display message on the display. | [8M] |
| | b) | Write a short note on interface keyboard with 8051. | [8M] |
| | | | |
| 7 | a) | Discuss about ADC & DAC interfacing with one example. | [8M] |
| | b) | Give the 16-bit flag register format of 8086 and explain Control Flag in detail. | [8M] |

\*\*\*\*\*