Paper Code: EE-504	**Roll No.**									

B.Tech

FIFTH SEMESTER EXAMINATION, 2016-17

MICROPROCESSOR & ITS APPLICATIONS

[Time: 3 hrs.] [Max. Marks: 100]

Note: Attempt ***ALL*** questions. Assume suitable data, if required. All question carry equal marks.

1. Attempt any four questions from the following: - **(5x4=20)**
   (a) What is bus? What are different types of buses supported by 8085 microprocessor. Explain with suitable block diagram.
   (b) Discuss evolution of microprocessor with suitable diagram.
   (c) What is addressing mode .Explain various types of addressing modes supported in 8085 microprocessor.
   (d) What following instructions do in the 8085 microprocessor?
   (i) MOV B,C (ii) MOV A, M
   (iii) MOV M, B (iv) MVI D, 09H (v) MVI M,E7H
   (e) What are the machine cycles in the 8085 microprocessor? Explain in brief.
   (f) Write short notes on:
   (i) Microprocessor (ii) CPU
   (iii) Minicomputer (iv) Higher level language

2. Attempt any *two* questions of the following: - **(10x2= 20)**
   (a) Draw the internal architecture of 8085 microprocessor. Explain each block with suitable diagrams.
   (b) Draw and explain the Opcode fetch machine cycle timing diagram of the 8085 microprocessor.
   (c) What is flag? List its type. What is the structure of flag register? Explain each flag with an example.

3. Attempt any *two* questions of the following: - **(10x2= 20)**
   (a) Draw and explain timing diagram of memory write cycle in 8086 maximum mode.
   (b) Draw pin diagram of 8086 microprocessor. Explain pins are associated with maximum mode.
   (c) Explain the following instructions with suitable examples. Also indicate the flag conditions.
   (i) DAA (ii) RCR (iii) XRA (iv) AAA (v) ORA

4. Attempt any *two* questions of the following: - **(10x2= 20)**
   (a) Draw flow chart and write program of subtraction of two 8-bit numbers without borrow.
   (b) Draw the flow chart and write program of 4-digit BCD addition.
   (c) Write addressing mode and T-states of the following instructions:
   (i) MOV B, C (ii) MOV A, M (iii) MVI D, 09H (iv) MVI M, E7H (v) XCHG
   (vi) LHLD 1050H (vii) STA 2050H (viii) SHLD 305AH (ix) XCHG (x) LXI H, 1050H

5. Attempt any *two* questions of the following:- **(10x2= 20)**
   (a) Explain 8255 PPI with suitable block diagram. Discuss its operating modes in brief.
   (b) What is 8237 DMA controller and also write its features. Draw the pin diagram of 8237 DMA controller and explain its pins in brief.
   (c) Draw and explain the architecture of 8253 programmable timer/counter.