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***B.Tech. Degree V Semester Supplementary Examination
November 2020***

**CS 15-1505 ADVANCED MICROPROCESSORS AND MICROCONTROLLERS
(2015 Scheme)**

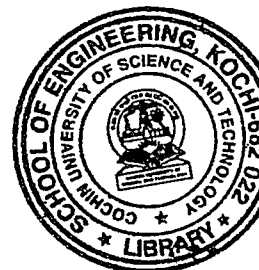
Time: 3 Hours

Maximum Marks: 60

PART A
(Answer *ALL* questions)

(10 × 2 = 20)

- I. (a) Explain the register organization of 80386 with diagrams.
- (b) Explain with an example how pipelining improves the performance of a system.
- (c) What do you mean by instruction level parallelism?
- (d) What are multicore processors? What are the advantages and major issues in multicore processors?
- (e) Compare the features of core i3, i5 and i7 processors.
- (f) Explain briefly about the intel skylake microarchitecture
- (g) Explain the various timer modes of operation of 8051 microcontroller.
- (h) Explain how 8051 microcontroller can be interfaced with ADC.
- (i) Explain the memory organization of PIC 16F84A micro controller.
- (j) State how the interrupts and registers of PIC 18F2420 are arranged.



PART B

(4 × 10 = 40)

- II. (a) Explain the memory system of 80386. (5)
- (b) Explain the I/O system of 80386. (5)
- OR**
- III. (a) Explain the different modes of operation of 80386. (6)
- (b) Explain about dynamic branch prediction. (4)
- IV. Explain in detail about the Nehalem microarchitecture. Also compare its features with Bonnell microarchitecture. (10)
- OR**
- V. (a) Explain the various power reduction techniques in processors. (6)
- (b) Explain the technical features in IA processors. (4)
- VI. With a neat diagram explain the architecture of 8051 microcontroller. (10)
- OR**
- VII. Explain the interfacing of 8051 to stepper motor and write an assembly language program to rotate the motor first +4 steps and then -4 steps. (10)
- VIII. Explain the architecture of PIC 16F84A micro controller. (10)
- OR**
- IX. (a) Explain the various I/O ports and their corresponding registers of PIC 18F series micro controller. (6)
- (b) Explain briefly about the various timers in PIC 18F series micro controller. (4)