FACULTY OF SCIENCE
M.Sc. III – Semester (CBCS / Non-CBCS) Examination, December 2014
Subject: Physics (Spl. Electronics Instrumentation)
Paper – IV: Microprocessing, DSPs & Interfacing

Time: 3 Hours
Max. Marks: 80

Note: Answer all questions from Part - A and Part - B.
Each question carries 4 marks in Part - A and 12 marks in Part - B.

PART – A (8 x 4 = 32 Marks)
[Short Answer Type]

1. Explain the functions of following signals.
   i) ALE  ii) DT/ R  iii) MN / MX  (iv) READY
   2. Distinguish between instruction cycle and bus cycle.
   3. Differentiate polling and interrupt I/O methods.
   4. Construct the control word to configure port-A and upper port-C as input ports and
      Port-B and lower port-C as output ports in mode-0.
   5. Discuss the on-chip memory of TMS 320 C5X processor.
   6. Explain the Bus structure of TMS 320 C5X processor.
   7. Describe the assembly language syntax of TMS 320 5X instructions.
   8. Explain the NORM instruction of TMS 320 5X processor.

PART – B (4 x 12 = 48 Marks)
[Essay Answer Type]

9. List and explain bit-manipulation and interrupt instructions of 8086 micro processor.
   a) Write an ALP to find the largest value in an array of words using 8086 μP instructions.

10. a) Draw a neat internal block diagram of programmable interval timer (8254) and
    explain its modes of operation.
    b) Discuss protected mode operation in detail.

11. a) Explain in detail central architecture logic unit (CALU) of TMS 320 C5X.
    b) Explain the following of TMS 320 C5X processor
       i) Parallel logic unit (PLU)  ii) Block move address register

12. a) Describe addition / subtraction and move instructions of TMS 320 C5X.
    b) Explain the following instructions of TMS 320 C5X processor
       i) Program control instructions  ii) Peripheral control instructions.

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