

Code No. 3995 / CBCS / Non-CBCS

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/\bar{R} iii) MN/\bar{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 ✓ a) List and explain bit-manipulation and interrupt instructions of 8086 micro processor with suitable examples.
OR
b) Write an ALP to find the largest value in an array of words using 8086 μ p instructions.
- 10 ✓ a) Draw a neat internal block diagram of programmable interval timer (8254) and explain its modes of operation.
OR
b) Discuss protected mode operation in detail.
- 11 ✓ a) Explain in detail central architecture logic unit (CALU) of TMS 320 C5X. —
OR
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.
OR
b) ✓ Explain the following instructions of TMS 320 C5X processor
i) Program control instructions ii) Peripheral control instructions.
