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Code No. 8829 / CBCS / Non-CBCS

FACULTY OF SCIENCE

M. Sc. IV – Semester (CBCS) Examination, May / June 2016

**Subject : Physics
(Spl. Electronic Instrumentation)**

**Paper – III : (Embedded System & its Application)
Paper : III (New) / II (Old)**

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 Compare the features of the embedded devices with that of external memory devices.
- 2 Explain the instructions pertaining to register addressing mode.
- 3 With suitable examples, explain signed and unsigned number representation.
- 4 Explain the differences between AJMP, SJMP and LJMP.
- 5 What are the important features of PIC16C61/71 microcontroller.
- 6 Draw the pin diagram of PIC 16F877 micro controller.
- 7 With a neat diagram explain how relays are connected to micro controller.
- 8 Explain the principles of working of a strain gauge.

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

- 9 (a) Draw the diagrams of Harvard and Von Newmann architectures.
(b) Compare the features of RISC and CISC processors.
OR
(c) Explain different flags of the PSW register.
(d) What is the role of register and stack in 8051? Explain.
- 10 (a) Explain multiplication and division instructions of 8051?
(b) Explain with example, the ROTATE and SWAP instruction.
OR
(c) Explain the delay generation using a program.
(d) Describe the interrupts of 8051.
- 11 (a) Explain the registers of PIC16C61/71 micro controller.
(b) With a neat circuit diagram explain the RESET functions.
OR
(c) Discuss the working register of PIC16F8XX flash controller.
(d) Explain the I/O ports presented by PIC16F8XX microcontroller and its special properties.
- 12 (a) With a neat sketch, explain how a seven segment display can be interfaced with PIC microcontroller.
(b) What is a latch? What is its use in interfacing?
OR
(c) What is LVDT? Explain its uses.
(d) With a neat diagram explain the working of dc motor in control application.
