

FACULTY OF SCIENCE**M. Sc. IV – Semester (Old) Examination, May / June 2017****Subject : Physics
(Specialization : Electronic Instrumentation)****Paper – III (New) / II (Old) : Embedded System and Applications****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 Harvard and Von Newmann architectures.
- 2 Explain the bits of the PSW register of 8051.
- 3 Explain the SWAP instruction of 8051.
- 4 Mention the interrupts of 8051.
- 5 Explain the RESET action in PIC 16C6x/7x controller.
- 6 Draw the pin diagram of PIC 16F 8 xx microcontroller.
- 7 Draw the interfacing circuit of 89C51 with relays.
- 8 Compare the features of a normal dc motor with a stepper motor.

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

- 9 (a) Compare the features of RISC and CISC processors.
(b) Explain the register bank of 8051 microcontroller.
OR
(c) Explain different data types and directives of 8051 programming.
(d) Explain bit manipulation instructions of 8051.
- 10 (a) What are the signed and unsigned numbers? Explain.
(b) Explain compare and rotate operations of 8051.
OR
(c) Explain the time delay generation and calculation.
(d) Draw the interfacing diagram of 8051 with MAX 232.
- 11 (a) Draw the internal architecture for IC 16C6X/7X microcontroller and explain each block of it.
OR
(b) Discuss in detail the register, memory and I/O port organization of PIC 16X F8 XX flash microcontroller.
- 12 (a) With a neat circuit diagram explain the interfacing of DAC0800 with 89C51.
OR
(b) With a neat circuit diagram explain the interfacing of stepper motor with 89C51.