

(041130402)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017

THIRD SEMESTER

Branch - Physics

Paper IV — ELECTRONICS-EMBEDDED SYSTEMS

(New Syllabus)

Time : 3 Hours

Max. Marks : 70

**PART - A**

Answer any FIVE questions. Each question carries 4 marks.

(Marks :  $5 \times 4$  marks = 20 marks)

1. Distinguish between microprocessors and microcontrollers.
2. Briefly describe. Power-up and Reset functions in 16F84A.
3. Explain the technical challenges presented by 16F84A.
4. Discuss the salient features of PIC F84A controller.
5. Write a note on Arithmetic instructions in PIC 16-series.
6. Give a note on the development environment of PIC Controller.
7. Draw the memory map of PIC 16F84A. Explain.
8. Give a brief note on Sensors and Actuators.

**PART - B**

Answer FOUR of the following. Each question carries 12.5 marks.

(Marks :  $4 \times 12.5$  marks = 50 marks)

**UNIT - I**

9. Discuss PIC microcontroller using 12-Series.

**Or**

10. With a neat diagram explain the Architecture of PIC 16F84A Controller.

**UNIT - II**

11. Discuss with diagrams the parallel port facilities of 16F84A controller.

**Or**

12. Explain Watch dog timer and sleep mode in PIC microcontroller.

[P.T.O.]

### UNIT - III

13. With examples explain the instruction set of PIC-16 series microcontroller.

Or

14. What is Timer? Explain how to generate time delays in 16-series controller.

### UNIT - IV

15. Draw the block diagram of CPU and explain the architecture of 16F87XA series.

Or

16. (a) Explain the pulse width modulation.

(b) Write a note on LED displays.

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