Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80324

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Electronics and Communication Engineering

EC 6013 — ADVANCED MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How many memory banks are available in Pentium microprocessor?
2. What is Interrupt processing? Mention the interrupt instructions available in Pentium.
3. Define Branch with Link and exchange instruction in ARM Processor.
4. What is the application of SWI instruction?
5. What is context switching?
6. How are relocation registers used in memory management unit?
7. Write Motorola 68 HC 11 micro controller I/O related instruction.
8. What is the function of condition code register (CCR) in 68HC11 microcontrollers?
9. What is watchdog timer in PIC microcontroller?
10. What is the function of INDF register in PIC microcontrollers?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain in detail the different levels and advantages of branch prediction in Pentium architecture. (8)

(ii) Discuss the integer and floating point pipeline operation in Pentium processor with examples. (8)

Or

(b) (i) Describe the different groups of instructions of Pentium with examples. (8)

(ii) Discuss the exception conditions supported in real mode of Pentium architecture. (8)

12. (a) (i) Draw and explain different registers organization available in ARM processors. (10)

(ii) Write an ARM assembly language program to find square root of given number. (6)

Or

(b) Explain in detail the thumb instruction set of ARM processor with examples. (16)

13. (a) Explain the block filter algorithm in the design of a FIR filter using ARM7TDMI. (16)

Or

(b) Explain in detail the ARM memory protection unit. (16)

14. (a) (i) List the addressing modes used in 68HC11. Give five exemplary uses of each mode. (8)

(ii) Explain ADC unit features in 68HC11. (8)

Or

(b) (i) Discuss about the different types of instructions available in Motorola micro controller. (10)

(ii) Explain the UART interface with Motorola micro controller. (6)

15. (a) (i) Discuss the core architectural features of PLC microcontrollers. (8)

(ii) Describe the interrupt structure of PLC microcontrollers. (8)

Or

(b) (i) Explain the various timers associated with PIC. (8)

(ii) Explain I^2C interfacing with PIC micro controller. (8)
