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

Question Paper Code : 71713

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth/Seventh/Eighth Semester

Electronics and Communication Engineering

EC 6013 — ADVANCED MICROPROCESSORS AND MICROCONTROLLERS

(Common to Medical Electronics Engineering)

(Regulations 2013)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Compare RISC and CISC.
2. What are the advantages of segmented memory?
3. Define pointer aliasing.
4. What is meant by Profiler?
5. Identify the role of Memory Management Unit.
6. Distinguish between caches flush and clean.
7. Examine the major features of UART.
8. Classify the different techniques of A/D conversion.
9. Evaluate the role of INDF register in PIC micro controller.
10. What are the applications of PWM output?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the hardware signals and superscalar architecture of Pentium processor. (16)

Or

(b) Write short notes on :

(i) Pipelining (8)

(ii) Multitasking. (8)

12. (a) (i) Define the architectural inheritance of ARM processor and explain. (8)

(ii) Name the principle features of ARM architecture. (8)

Or

(b) Describe the organization of CPU of a high performance RISC architecture. (16)

13. (a) (i) List the guidelines to write code for FIR filters on ARM. (6)

(ii) Implement a block filter in ARM processor using DSP concepts. (10)

Or

(b) Write in detail about the fundamental components of Embedded operating systems. (16)

14. (a) (i) Name the various operating modes of Motorola 68HC11 Microcontroller. (4)

(ii) Summarize about each operating mode in detail. (12)

Or

(b) Discuss in detail about

(i) ADC unit features in 68HC11. (8)

(ii) A/D conversion process in 68HC11 microcontroller. (8)

15. (a) (i) Describe the architecture of PIC micro controllers. (10)

(ii) Discuss the features of register bank in PIC micro controller. (6)

Or

(b) (i) Explain the data communication protocol of 12 C bus. (8)

(ii) Discuss in detail the organization of program and data memory of PIC microcontrollers. (8)

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