

Reg. No. :

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Question Paper Code : 52895

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Sixth/Seventh/Eighth Semester

Electronics and Communication Engineering

EC 6013 – ADVANCED MICROPROCESSORS AND MICROCONTROLLERS

(Common to Electronics and Communication Engineering/Medical Electronics)

(Regulation 2013)

(Also common to PTEC 6013 – Advanced Microprocessors and Microcontrollers for
B.E. Part-Time – Sixth Semester – Electronics and Communication Engineering
Regulation 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why pipe line mechanism of instructions execution is preferred in processors?
2. What is bus snooping?
3. State any two features of a RISC machine.
4. What do Load-Store instructions of an ARM processor do? What are the types of Load-store instructions?

5. What is effect of memory overflow?
6. What is a boot loader?
7. In serial RS 232 Bus, What is RTS and CTS?
8. Write down the registers of Motorola 68HC11 microcontrollers.

9. State the function of Timer 1 in PIC microcontroller.

10. In IIC Bus communication how does a slave device gain Bus access for transmission.

PART B — (5 × 13 = 65 marks)

11. (a) Explain with the block diagram the functional features of a pentium processor.

Or

- (b) Explain the multitasking feature in a pentium processor.
12. (a) Explain the following sets of Thumb instructions of an ARM processor.
- (i) Branch instructions
 - (ii) STACK instructions
 - (iii) Software interrupt instruction.

Or

- (b) For a ARM processor explain the instruction types, and brief on how programming in C is advantageous then assembly language programming.
13. (a) Explain the architecture of a 4 kB, four-way set associative cache of an ARM processor.

Or

- (b) Explain briefly on the protected regions of ARM cores.
14. (a) Explain any five addressing modes used in 68 HC 11 microcontroller with an example each.

Or

- (b) Explain the block diagram of 68HC 11 microcontroller.
15. (a) Explain the I²C bus operation in PIC microcontroller.

Or

- (b) Explain UART data-handling circuitry of a PIC microcontroller.

PART C — (1 × 15 = 15 marks)

16. (a) Write a C program under ARM environment to realise a signed division by a constant.

Or

- (b) Explain the fundamental components that makeup an embedded operating system.