**G 386**

# B.TECH. DEGREE EXAMINATION, MAY 2014

## Sixth Semester

Branch : Electronics and Communication Engineering

EC 010 604—COMPUTER ARCHITECTURE AND PARALLEL PROCESSING (EC)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours                                    Maximum : 100 Marks

### Part A

*Answer all questions.*
*Each question carries 3 marks.*

1. What is the use of condition codes ?

2. Compare sign-magnitude, 1's complement and 2's complement forms of number representations.

3. Write a note on memory-mapped I/O.

4. What are the hazards of pipelining ?

5. Write a note on USB.

(5 × 3 = 15 marks)

### Part B

*Answer all questions.*
*Each question carries 5 marks.*

6. List the factors that affect the performance of CPU.

7. Write a note on fast adders.

8. Explain the concept of virtual memory.

9. Briefly explain multithreading.

10. What are the differences between multiprocessors and multicores ?

(5 × 5 = 25 marks)

### Part C

*Answer all questions.*
*Each full question carries 12 marks.*

11. Explain superscalar architecture. What is meant by instruction level parallelism ?

*Or*

12. Explain various addressing modes.

**Turn over**

13. Explain Booth's algorithm, with example. Explain fast multiplication technique.

Or

14. Explain hardwired and microprogrammed control.

15. Explain direct, associative and block-set associative mapping techniques used in Cache memory, with examples.

Or

16. (a) Explain interrupt handling techniques.

    (b) Explain dynamic memories.

17. Explain various interconnection networks.

Or

18. Explain message passing architecture.

19. Explain various hardware units of PC.

Or

20. Explain the evolution and features of Pentium processor series.

(5 × 12 = 60 marks)