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

Question Paper Code : 13292

M.E./M.Tech. DEGREE EXAMINATION, JANUARY 2015.

First Semester

Applied Electronics

CP 7103 — MULTICORE ARCHITECTURES

(Common to M.E. Computer Science and Engineering, M.E. Computer Science and Engineering (with specialization in Networks) M.E. Digital Signal Processing, M.E. Multimedia Technology and M.Tech. Information Technology)

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is synchronization?

2. What are the limitations of single core processors?

3. What is the need for GPUs?

4. Can a process be parallelized in a single core processor?

5. What do you mean by shared address?

6. What is a Virtual Machine?

7. What is meant by cloud computing?

8. Write short notes on processing requirements of a data warehouse.

9. Define latency.

10. List any four embedded systems in a car.

PART B — (5 × 16 = 80 marks)

11. (a) (i) "Parallelized System are here to rule the nex gen computing arena." – Justify. (8)

(ii) Explain the concepts of multithreading. (8)

Or

(b) Briefly discuss the various Classes of Parallelism. (16)

12. (a) Discuss the need for parallelization in processing multimedia. Explain the architecture of GPU with neat diagrams. (16)

Or

(b) (i) Explain Data Level Parallelism in Vector Architecture. (8)

(ii) Describe loop level parallelism. (8)

13. (a) (i) With neat diagrams, explain Shared Memory architectures. (10)

(ii) What is Cache Coherence? Discuss Cache Coherence Issues in a multiprocessor system. (6)

Or

(b) Analyze the different types of interconnection networks. Bring out the suitability of each with examples. (16)

14. (a) (i) Differentiate a Warehouse scale computer and a high performance computer. (4)

(ii) Explain the Map Reduce Model. (4)

(iii) Discuss the computer architecture of a Warehouse scale computer. (8)

Or

(b) Explain the architecture of a cloud. Discuss the commercial applications of cloud computing. (16)

15. (a) (i) Describe the requirements for an embedded system. (10)

(ii) Explain the features of a digital signal processor. (6)

Or

(b) (i) Discuss the various components of an embedded system. (6)

(ii) Explain the embedded multiprocessor architectures. (10)

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